Thermo Fisher Scientific Inc. - Climate Change 2022

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Thermo Fisher Scientific Inc. (also referred to in this document as “Thermo Fisher,” “we,” the “company,” or the “registrant”) is the world leader in serving science. Our Mission is to enable our customers to make the world healthier, cleaner and safer. We serve customers working in pharmaceutical and biotech companies, hospitals and clinical diagnostic labs, universities, research institutions and government agencies, as well as environmental, industrial quality and process control settings. Our global team delivers an unrivaled combination of innovative technologies, purchasing convenience and pharmaceutical services through our industry-leading brands, including Thermo Scientific, Applied Biosystems, Invitrogen, Fisher Scientific, Unity Lab Services, Patheon and PPD.

As the world leader in serving science, the products and services we provide to our customers help them tackle some of the world’s greatest societal and environmental challenges. Given our industry position, the scale of our operations, the talent of our colleagues and the depth of our capabilities—all powered by our culture of continuous improvement—Thermo Fisher is uniquely qualified to positively impact the global community Learn more about our CSR approach initiatives in our 2021 Corporate Social Responsibility Report.

On December 8, 2021, the Company acquired PPD, Inc., a leading global provider of clinical research services to the pharma and biotech industry. PPD data is not included in the scope of this report.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2021	December 31 2021	Yes	3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Argentina
Australia
Austria
Belgium
Brazil
Canada
Chile
China
Colombia
Costa Rica
Croatia
Czechia
Denmark
Finland
France
Germany
Hungary
India
Indonesia
Ireland
Israel
Italy
Japan
Lithuania
Luxembourg
Malaysia
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Republic of Korea
Russian Federation
Singapore
Slovakia
South Africa
Spain
Sweden
Switzerland
Taiwan, China
Thailand
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States Minor Outlying Islands
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, a CUSIP number	883556 10 2
Yes, a Ticker symbol	NYSE: TMO

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	The Nominating and Corporate Governance Committee (the Committee) of the Board of Directors oversees the Company's environmental, social and governance efforts and associated risks (as listed in the Committee charter), including those related to climate. In addition to regular reports, in 2021, the Committee engaged in a session dedicated to Thermo Fisher's carbon reduction strategy and key initiatives. The resulting strategy associated with our net-zero by 2050 commitment was endorsed by the Committee.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Nominating and Corporate Governance Committee of the Board of Directors periodically reviews and reports to the Board of Directors on Thermo Fisher's corporate responsibility and sustainability efforts, including the impact of environmental and social issues on the Company. In 2021, the Committee reviewed the Company's corporate social responsibility progress, carbon reduction roadmap and key initiatives through regular reports and in depth during two of its meetings. The Audit Committee of the Board of Directors is responsible for overseeing guidelines and policies to govern the process by which the Company's exposure to risk is handled. Enterprise risk management is presented to the Board of Directors annually, following an extensive cross-functional review, and includes climate change risk as appropriate. Individual risk topics are presented to the Board of Directors and its committees, as applicable during regularly scheduled meetings.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	We have at least two board members with competence on climate-related issues: • Ruby Chandy serves on the Environmental, Health, Safety and Sustainability Committee at DuPont de Nemours • R. Alexandria Keith is the Executive Sponsor for Corporate Sustainability at Procter & Gamble	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Senior Vice President, Global Business Services)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Half-yearly
Other C-Suite Officer, please specify (Senior Vice President, Head of Strategy and Corporate Development at Thermo Fisher Scientific)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Annually
Other committee, please specify (Executive Oversight Group)	<Not Applicable>	Other, please specify (Company level oversight of climate program)	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

In 2021, we enhanced strategic investments in staffing, re-evaluating and resourcing our climate program to support the design and implementation of our net-zero roadmap. We also expanded our governance model around climate to enable decision making that purposefully accelerates our climate strategy.

Our Senior Vice President, Global Business Services is a member of the Company Leadership Team and serves as executive sponsor for the climate program with responsibility for the achievement of our Company's greenhouse gas targets. This role reports directly to the Chief Financial Officer. Tiered steering committees within the organization, laddering up to the executive sponsor were established to develop and execute the climate program.

Our Senior Vice President, Strategy and Corporate Development is a member of the Company Leadership Team and has oversight of the Corporate Social Responsibility (CSR) program, which has responsibility for external climate reporting and strategic market risks and opportunities. This role reports directly to the Chief Executive Officer.

Our Executive Oversight Group, headed by our Chairman, President and Chief Executive Officer, consists of top executives (including those noted above) with climate, operations and finance expertise who are responsible for reviewing our climate-related plans, risks and performance results on a quarterly basis.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Our Company-wide annual bonus determinations include non-financial metrics (weighted at 30%), with a goal of delivering on our commitments to all stakeholders and advancing our position as the world leader in serving science. For 2021, non-financial performance included progress on our greenhouse gas emission reduction goals

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	
Corporate executive team	Monetary reward	Emissions reduction target	
Business unit manager	Monetary reward	Emissions reduction target	
Procurement manager	Monetary reward	Emissions reduction target Environmental criteria included in purchases Supply chain engagement	
Environment/Sustainability manager	Monetary reward	Emissions reduction target Behavior change related indicator Company performance against a climate-related sustainability index	
Energy manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Efficiency project	

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	This short-term definition comes from the Company's operating budget terms.
Medium-term	3	10	This falls outside of annually reviewed budget timelines but within the long-term set goals of the Company.
Long-term	10		This timeline corresponds to the Company's long-term vision goals.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

A substantive strategic impact on our business is defined in our risk management process as follows: can increase operating costs to the point where margins are eroded; affect the reputation of the business, its products or services.

Within our enterprise risk management process, our risk assessment process includes both a quantitative and qualitative assessment of risks and opportunities. From a quantitative perspective, we evaluate risks and opportunities based on their potential impact on certain key financial statement amounts and operating results (e.g., assets, revenues, earnings, cash flow, etc.). From a qualitative perspective, we evaluate risks and opportunities based on the consideration of all other relevant facts and circumstances, including potential impact and probability of occurrence.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
A specific climate-related risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term

Description of process
To inform the wider enterprise risk management process of any specific risks and opportunities posed by climate change and/or the transition to a low-carbon economy, we review insurance reports outlining flooding, wildfires and extreme weather risks for all Company sites. To manage identified risks, site-specific mitigation plans are developed. Between July 2021 and June 2022, risk improvements were undertaken across our global operations at a total cost of approximately $3.1 million related to these plans. In 2022, our priority is to develop climate scenario analysis processes to help us understand the potential impact of physical and transitional risks across low-, medium- and high-case scenarios based on Representative Concentration Pathways shared by the Intergovernmental Panel on Climate Change. Climate science is clear. Urgent action is needed to avoid the worst impacts of climate change, which Thermo Fisher has prioritized as core to our Mission and integral to our business and sustainability strategies. In 2021, we increased our climate ambition by committing to net-zero emissions across our value chain by 2050 and joining the Business Ambition for 1.5°C campaign led by the Science Based Targets initiative, aligning our goals with the Paris Agreement. This net-zero target builds on our near-term climate goals. We are actively developing our operational roadmap to a net-zero value chain to manage climate-related risks. Key components of our plan include a transition from fossil fuels to renewable electricity, supplier engagement program and sustainable product design program to enable our customers to achieve their goals and drive innovation. As our roadmap evolves, we continue to frame our approach toward a broader range of emissions sources such as our fleet, waste generation, transportation and business travel. With insights in these areas, our colleagues and other stakeholders are critical partners in helping us achieve our goals.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	As our business operates around the world, we are subject to numerous regulations, some of which are climate-related. As an example, we are subject to the UK Climate Change Levy regulation that places a carbon tax on our energy consumption in that country, which amounts to roughly USD 500,000 per year.
Emerging regulation	Relevant, always included	As our business operates around the world, we are subject to numerous regulations, some of which are climate-related. With increased scrutiny around climate, we anticipate growth in climate-related regulations that will impact our business. An example is a recent decision to ban the sale of new fossil fuel-powered vehicles in the EU after 2035. Thermo Fisher currently operates over 5,000 vehicles in that region requiring a strategic change in our sourcing of vehicles as we look to the future.
Technology	Relevant, always included	We strive to provide customers with innovative products that meet their needs. As the climate becomes a larger criterion in the eyes of our customers, we need to be aware of climate-positive technological advances in measurement, energy efficiency, refrigerants, or plastics, that can be incorporated into our product offerings or used to create new product offerings.
Legal	Relevant, always included	With increasing US and EU government regulation specific to climate-related claims and financial reporting, the heightened potential for litigation must be monitored and managed appropriately.
Market	Relevant, always included	Our customers are outlining the importance of environmental sustainability criteria as part of their sourcing decisions. We must actively monitor and meet the requirements of these criteria as well as our competitors to maintain the demand for our products and services.
Reputation	Relevant, always included	Our climate performance, including the achievement or non-achievement of our targets, has the potential to negatively impact our corporate reputation lowering our brand value in the eyes of customers, investors, and current and prospective colleagues and from a talent attraction and retention perspective.
Acute physical	Relevant, always included	The risk of extreme weather events to our facilities continues to change. The Company has a program for periodic inspection and audit of facilities to ensure they are prepared to withstand acute climate-related threats.
Chronic physical	Relevant, always included	Long-term trends in local temperatures and weather pattern shifts can present new or increased chronic climate-related risks to our facilities, such as extreme heat and water scarcity.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Wildfire

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
We review insurance reports outlining flooding, wildfires and extreme weather risks for all Company sites. These risks include increased wildfire exposure in California where the Company has many manufacturing locations. Wildfire can affect the facilities themselves, and/or force operations to shut down due to smoke, poor air quality and workforce evacuations. The Company also has risk of hurricanes and increased coastal flooding due to sea level rise in Puerto Rico, Florida and North and South Carolina. Lastly, the Company has flooding risk at a number of locations throughout the world, inclusive of traditional flooding events along rivers and surface water intrusion into facilities, which appears to be getting more common as weather events increase in severity. While the majority of our sites are located in areas with low risk or are prepared for extreme weather risks, we did identify some requiring mitigation plans. To manage the identified risks, site-specific mitigation plans were developed.

Time horizon
Medium-term

Likelihood
More likely than not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The financial impact is a combination of the amount of self-insured risk the Company takes in the form of deductibles and self-insured retentions and an estimate of impact for which there is no insurance coverage available in the market (e.g., reputational risk, permanent loss of business, etc.)

Cost of response to risk

Description of response and explanation of cost calculation
To manage identified physical risks associated with short-term extreme weather-related risks, site-specific mitigation plans are developed. Between July 2021 and June 2022, nearly 30 risk improvements were undertaken across our global operations. The most significant risk improvement project was related to improving roof and window resilience against windstorms at one of our North Carolina sites. Other improvements included stormwater protection at several sites in the United States and Italy.

Comment
As our evaluation identifies new and adjustments in risk, site-specific mitigation plans may be created or adjusted as needed. Additional spend may be required in those cases.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In the medium-term carbon taxes are forecasted to increase in coverage and price, specifically: - As we serve customers globally, a Carbon Border Adjustment Mechanism may be applied to some of our products. - As we operate globally, an international carbon pricing floor as promoted by the International Monetary Fund (IMF) and World Trade Organization (WTO) would impact our operations not already impacted by carbon pricing mechanisms. - Existing carbon pricing mechanisms are noted as needing to increase to meet the Paris Agreement temperature goals, as less than 4% of global emissions are currently covered by a direct carbon price within the range needed by 2030. Findings based on The World Bank. 2022. “State and Trends of Carbon Pricing 2022” (May), World Bank, Washington, DC. Doi: 10.1596/978-1-4648-1895-0. License: Creative Commons Attribution CC BY 3.0 IGO.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
An example financial impact would use a range of 0.005 to 0.020 USD per KWH of fossil fuel energy purchased (representing a carbon tax of around USD 25 to 100 per MTCO2) and represents per year financial impacts. Total fossil fuel consumption in 2021 for Thermo Fisher was roughly 1,350,000,000 KWH.

Cost of response to risk

Description of response and explanation of cost calculation
Our climate strategy consists of transitioning away from the use of fossil fuels while accelerating the adoption of new wind and solar facilities, both on and off-site. We achieved our first fossil fuel-free site in Germering, Germany this year, eliminating this risk for that site. Our strategic action plan through 2030 includes investments for net-zero infrastructure-related capital expenses across all global operations and investments for operational expenses to achieve our targets.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Upstream

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description
Our climate strategy includes accelerating the adoption of new wind and solar facilities, both on and offsite. Through the power purchasing agreement (PPA) model, we can support the installation of these new facilities and acquire renewable electricity to meet our climate targets. In addition, PPAs can sometimes provide operating savings, whether via lower electrical rate or cash flow positive contract for differences settlement. North America and Europe are regions we foresee the greatest potential for offsite PPA projects in the near term due to region regulatory environment and the scale of our energy consumption. Onsite solar opportunities are highly dependent on local regulations as well as site-specific energy rates with our focus in the near term on applicable regions of the United States, Europe, and Asia.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The potential financial impact figure would be based on the vPPA contract for differences settlement range of outcomes. Based on market conditions, settlements can also be positive or negative but unlikely to consistently result in costs that exceed purchasing of unbundled environmental attribute certificates.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
To realize this opportunity, we will continue our efforts while working with leading advisors and developers to invest in new onsite and offsite wind and solar projects. We anticipate this work to be a multi-year endeavor given our size and scale. The estimated cost to realize is associated with advisor and legal fees to support us with identifying and contracting with developers using a Power Purchasing Agreement model in the regions identified. In 2021, we launched engagements with leading advisors to identify vPPA opportunities in the North American market that would enable Thermo Fisher to achieve its emission reduction targets without the use of unbundled renewable energy certificates. We also began discussions with solar developers to develop onsite PPA solar projects at several of our facilities, now including six in the United States and three in Europe.

Comment
The market for PPAs continues to evolve around the world and can be impacted by raw material costs, market variations, and government regulations. The figures presented are based on current conditions and may change in the future.

C3. Business Strategy

C3.1

(C3.1) Does your organization’s strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan
Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan
Yes

Mechanism by which feedback is collected from shareholders on your transition plan
We have a different feedback mechanism in place

Description of feedback mechanism
We are committed to an active and robust shareholder engagement program. We believe that understanding the perspectives of our shareholders is a key component of good corporate governance. The goals of our shareholder engagement program include: • Providing visibility and transparency into our business, our financial and operational performance and our strategy; • Determining which issues are important to our shareholders and sharing our views on those issues; and • Discussing and seeking feedback on our business and our executive compensation and corporate governance policies and practices, and our sustainability initiatives. We approach shareholder engagement as an integrated, year-round process involving our investor relations team, senior management and a member of the Board as appropriate and/or requested. This includes participation in investor conferences and other formal events and one-on-one meetings and conference calls throughout the year. Throughout 2021 and into 2022 we engaged with shareholders representing over 50% of our outstanding shares to solicit their feedback on our business and financial performance, governance and executive compensation programs, and environmental and social matters. Members of our investor relations team and senior management participated in each discussion, with certain engagements including a member of our Board.

Frequency of feedback collection
More frequently than annually

Attach any relevant documents which detail your transition plan (optional)
2021 CSR Report Thermo Fisher Scientific.pdf

Explain why your organization does not have a transition plan that aligns with a 1.5°C world and any plans to develop one in the future
<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy
<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative, but we plan to add quantitative in the next two years	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios RCP 6.0	Company-wide	<Not Applicable>	We utilize the WWF Water Risk Filter Tool to understand from a qualitative perspective the climate-related risks associated with water (e.g., flooding, water scarcity) in 2030 and 2050. The high-end scenario pathway "represents a world with unequal and unstable socio-economic development (SSP3) and high GHG emission levels (RCP6.0 /RCP8.5), leading to an increase of global mean surface temperature of approximately 3.5/4°C by the end of the 21st century."
Physical climate scenarios RCP 4.5	Company-wide	<Not Applicable>	We utilize the WWF Water Risk Filter Tool to understand from a qualitative perspective the climate-related risks associated with water (e.g., flooding, water scarcity) in 2030 and 2050. The current trend scenario pathway "represents a world similar to current socio-economic development trends (SSP2) and intermediate GHG emission levels (RCP4.5 /RCP6.0), leading to an increase of global mean surface temperature of approximately 2°C by the end of the 21st century."
Transition scenarios IEA NZE 2050	Company-wide	<Not Applicable>	"The Net Zero Emissions by 2050 Scenario (NZE). This is a normative IEA scenario that shows a narrow but achievable pathway for the global energy sector to achieve net zero CO2 emissions by 2050, with advanced economies reaching net zero emissions in advance of others. This scenario also meets key energy-related United Nations Sustainable Development Goals (SDGs), in particular by achieving universal energy access by 2030 and major improvements in air quality. This is consistent with limiting the global temperature rise to 1.5 °C without a temperature overshoot (with a 50% probability), in line with reductions assessed in the IPCC in its Special Report on Global Warming of 1.5 °C." Source: https://www.iea.org/reports/world-energy-model/net-zero-emissions-by-2050-scenario-nze A qualitative evaluation against the policy assumptions with a IEA NZE scenario indicates strong alignment with our net-zero strategy, particularly our approach to transition away from fossil fuels, which will require continued investment. Examples include: 2025: No new sales of fossil fuel boilers. 2030: 60% of global car sales are electric vehicles. 2035: Overall net zero-emissions electricity in advanced economies. 2045: 50% of heating demand met by heat pumps.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

We are early in the usage of climate-related scenario analysis. Our focal questions will focus on: - What possible future developments need to be probed? - What variables are needed to support decision-making? - What forces and developments have the greatest ability to shape future performance?

Results of the climate-related scenario analysis with respect to the focal questions

By utilizing the physical scenario analysis of the WWF Water Risk Filter Tool, we are able to understand that water scarcity is a regionally specific variable to consider. This qualitative analysis can provide context to support future investment and facility siting. For existing facilities in these regions, it also indicates that we should become more aware of local policy and its impact from a financial and reputation perspective.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	The risks and opportunities associated with climate have already influenced our product strategy. Examples include the replacement of Styrofoam coolers for cold chain shipments with our award-winning 100% recyclable paper cooler and the conversion of our cold storage portfolio to low-impact refrigerants. As customer expectations around climate continue to evolve, we are evaluating the strategic expansion of our design for sustainability process across our business segments.
Supply chain and/or value chain	Evaluation in progress	Our value chain represents approximately 95% of our total emission footprint. To achieve our net-zero commitment, significant reductions will be required across all aspects of our value chain, from purchased goods and services to transport to business travel. We are still in the early stages of evaluating our strategy to achieve this reduction level.
Investment in R&D	Evaluation in progress	Our mission is to enable our customers to make the world healthier, cleaner, and safer. With a changing climate, the needs of our customers are changing as well. As we continue to gain a better understanding of these evolving expectations, we are evaluating the best opportunities for innovation, whether through switching our products to more recyclable and lower carbon materials or dramatically reducing the use phase emissions of our products.
Operations	Yes	Our 2030 commitment to reduce Scope 1 + 2 emissions by 30% and our net-zero strategy to transition away from fossil fuels while accelerating the adoption of new wind and solar facilities both on and offsite— a direct result of the risks and opportunities associated with climate change—has significantly influenced our operational strategy. How we design and operate buildings and facilities will be very different in 2050 than it is today.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Capital expenditures Capital allocation	Our net-zero by 2050 commitment reflects our approach to strategically manage climate-related risks and opportunities. The influence on our financial planning can be seen in the following ways: - In 2021, we enhanced direct strategic investments in staffing, reevaluating and resourcing our climate program to support the design and implementation of our net-zero roadmap. - In 2022, we established carbon expectations for business units that will influence capital expenditures towards facility infrastructure, specifically away from fossil fuel equipment and towards equivalent electric-powered equipment. - In 2022, business units are directly evaluating environmental sustainability-specific opportunities to enhance their market opportunities, which may result in a change in allocation towards these climate-related initiatives.

C3.5

(C3.5) In your organization’s financial accounting, do you identify spending/revenue that is aligned with your organization’s transition to a 1.5°C world?

No, but we plan to in the next two years

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2019

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Market-based

Scope 3 category(ies)
<Not Applicable>

Base year
2018

Base year Scope 1 emissions covered by target (metric tons CO2e)
283161

Base year Scope 2 emissions covered by target (metric tons CO2e)
416195

Base year Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
699356

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
100

Target year
2030

Targeted reduction from base year (%)
30

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]
489549.2

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
298043

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
314972

Scope 3 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
613015

% of target achieved relative to base year [auto-calculated]
41.1526223172938

Target status in reporting year
Underway

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

Target ambition
Well-below 2°C aligned

Please explain target coverage and identify any exclusions
This target, a 30% absolute reduction in Scope 1 and 2 greenhouse gas emissions by 2030 from a 2018 baseline covers 100% of relevant Thermo Fisher Scientific emission sources using operational control as a boundary. There are no exclusions.

Plan for achieving target, and progress made to the end of the reporting year
As presented in our 2021 Corporate Social Responsibility Report, our plan to achieve this target includes transitioning away from fossil fuels in our buildings and fleet, transitioning to low-impact refrigerants, and accelerating the adoption of new wind and solar facilities both on and offsite. In 2021, we've achieved a 12% reduction compared to our 2018 baseline, representing 40% of the way to the target. We achieved this progress primarily through increasing our investment in renewable electricity including direct utility contracts and purchasing unbundled environmental attribute certificates.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2022

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with suppliers	Percentage of suppliers (by procurement spend) with a science-based target

Target denominator (intensity targets only)
<Not Applicable>

Base year
2021

Figure or percentage in base year
6

Target year
2027

Figure or percentage in target year
90

Figure or percentage in reporting year
6

% of target achieved relative to base year [auto-calculated]
0

Target status in reporting year
New

Is this target part of an emissions target?
Yes, this is our science-based near-term target for Scope 3 emissions in alignment with the Science Based Target Initiative guidance.

Is this target part of an overarching initiative?
Science Based targets initiative - other

Please explain target coverage and identify any exclusions
This target, 90% of suppliers, by spend, setting a science-based target by 2027 covers our purchasing of goods and services and transportation of those goods for the Company. There are no exclusions.

Plan for achieving target, and progress made to the end of the reporting year
As presented in our 2021 Corporate Social Responsibility Report, our plan to achieve this target includes engaging with suppliers to support them on their journey. We currently engage with our suppliers using EcoVadis and the CDP Supply Chain program. In 2021, 9% of our suppliers, by spend, had a science-based target, as defined by the Science Based Target Initiative.

List the actions which contributed most to achieving this target
<Not Applicable>

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Abs1

Target year for achieving net zero
2050

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

Please explain target coverage and identify any exclusions
This target, net-zero emissions by 2050 covers 100% of Thermo Fisher Scientific's Scope 1, 2 and 3 emission sources using operational control as a boundary. There are no exclusions.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?
Yes

Planned milestones and/or near-term investments for neutralization at target year
As neutralization of any unabated emissions (if any) with permanent carbon removals would not occur until our target year of 2050, our focus is on our near-term efforts on absolute reductions to drive emissions by at least 90%.

Planned actions to mitigate emissions beyond your value chain (optional)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	100	65000
To be implemented*	20	15000
Implementation commenced*	1	283
Implemented*	3	43568
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Fugitive emissions reductions	Other, please specify (Switch to lower impact refrigerants in chillers)

Estimated annual CO2e savings (metric tonnes CO2e)
149

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
21-30 years

Comment
Our Manati, PR facility was due to replace two chillers as the existing units had reached their end of life. The impact of the refrigerants was considered in the replacements and to support emission reductions, a very low-impact refrigerant - HFO-R514A was selected. The result was a reduction of 149 MTCO2e annually compared to HFC-134a, a common refrigerant used in chillers. As this change took place during the standard replacement cycle, there was no investment cost required.

Initiative category & Initiative type

Low-carbon energy consumption	Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
43200

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
650000

Payback period
No payback

Estimated lifetime of the initiative
3-5 years

Comment
We purchased and retired 108,000 MWHs of Green-e certified renewable energy certificates (RECs) in the United States market. 2021 was the first year we completed this type of initiative. Our renewable electricity strategy is to shift from purchasing unbundled RECs to virtual purchasing power agreements over the next 12 to 36 months.

Initiative category & Initiative type

Company policy or behavioral change	Other, please specify (IT program to transition from physical deck phone to digital phones)

Estimated annual CO2e savings (metric tonnes CO2e)
219

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
121000

Investment required (unit currency – as specified in C0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
>30 years

Comment
The Desk Phone Elimination Project led by our global IT function replaced 4700 devices in China/Singapore and 9460 devices in the United States. Monetary savings is based on projected electricity savings.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	An example is Europe's planned ban on fossil fuel vehicles in 2035.
Other (Business unit emission reduction targets)	We've established Scope 1 emission targets for each of our business units.
Dedicated budget for other emissions reduction activities	In 2021, we established $20 million in funding for emission reduction projects.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

Green Bond Principles (ICMA)

Type of product(s) or service(s)

Heating and cooling	Other, please specify (Ultra-Low Temperature Freezers)

Description of product(s) or service(s)

TDE Series ULT freezers use natural, non-hydrofluorocarbon (HFC) refrigerants, which help reduce environmental impact and further increase cooling efficiency. The United States Environmental Protection Agency [1] and European Commission [2] have identified that HFCs are powerful greenhouse gases with significant global warming potential. We are phasing out the use of these refrigerants in our freezers and refrigerators in favor of hydocarbon (HC) alternatives, which are more environmentally friendly. Additionally, the foam insulation in TDE Series freezers is water blown, which helps reduce the chemical emissions and outgassing that are common in other foam products.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify (Reduction calculated by identifying lifetime refrigerant emissions of current refrigerant used in Freezers compared to previous refrigerants (R-134a).)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

Per Unit

Reference product/service or baseline scenario used

Ultra-Low Temperature Freezers

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

7422

Explain your calculation of avoided emissions, including any assumptions

Reduction is calculated by identifying lifetime refrigerant emissions of current refrigerant used in freezers compared to previous refrigerants (R-134a) based on Calculating HFC and PFC Emissions from the Manufacturing, Installation, Operation, and Disposal of Refrigerants & Air-conditioning Equipment (Version 1.0) prepared by the GHG Protocol.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.5

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?
Yes, an acquisition

Name of organization(s) acquired, divested from, or merged with
In December 2021, we closed our acquisition of PPD, Inc, a global contract research organization.

Details of structural change(s), including completion dates
Per GHG Protocol, financial reporting standards, and our Environmental Sustainability Data Collection and Reporting Procedure, this acquisition will be accounted for in the next reporting period, calendar year 2022. All data disclosed herein excludes emissions or other related activities associated with PPD.

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology No, but we have discovered significant errors in our previous response(s)	In 2021, improvements made to our methodology include applying market-based emission factors and increasing coverage from approximately 80% to 100% of global facilities and fleet. In 2021, we identified and corrected gaps in emission coverage required by the GHG Protocol including our leased and owned vehicle fleet, fugitive refrigerant emissions, onsite electricity generated where we did not keep the associated environmental attribute certificates, and electricity generated by onsite contracted fuel cell and cogeneration facilities.

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	From our Environmental Sustainability Data Collection and Reporting Procedures: "There are certain scenarios in which the baseline data will require adjustment to ensure that comparisons are consistent. The baseline for any indicator shall be adjusted if any of the following scenarios occur and the occurrence results in a +/- 5% change from the baseline value of a given sustainability indicator at the global level: • Mergers, acquisitions, and divestments; • Insourcing or outsourcing of activities, if those activities were not included in the base year; • Changes in calculation methodologies or improvements in emission factors/activity data; or • Errors or omissions of data from the base year. Note: In the case of greenhouse gas emissions, Scope 3 emissions shall be considered separately from Scope 1 and 2 when determining whether a baseline adjustment is needed. The uses of the terms mergers, acquisition and divestments are defined by financial reporting requirements. If deemed significant (i.e., creating a +/- 5% change), the environmental and financial impacts of this activity shall be added or removed from the baseline and all subsequent years, using the methodology outlined by the GHG Protocol Corporate Standard. Reporting on an amended Company structure shall be consolidated no later than six (6) months following activity finalization, where feasible and not in conflict with requirements of the partnering business. For example, data associated with mergers, acquisitions and divestments occurring in January through June should be incorporated into that year's external report(s). In contrast, events occurring in July onward should be incorporated into the following year's external report(s). Organic growth or decline, including purchasing of individual buildings, shall not be considered in any baseline adjustment."

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start
January 1 2018

Base year end
December 31 2018

Base year emissions (metric tons CO2e)
283161

Comment
This number is a restatement from the 2020 CDP Climate Change disclosure (and all other previous disclosures). Significant updates include the inclusion of our vehicle fleet, fugitive refrigerant emissions, and expanded coverage from 80% to 100% of global energy use. These updates resulted in a significant increase to the base year emissions.

Scope 2 (location-based)

Base year start
January 1 2018

Base year end
December 31 2018

Base year emissions (metric tons CO2e)
373648

Comment
This number is a restatement from the 2020 CDP Climate Change disclosure (and all other previous disclosures). Significant updates include the expanded coverage from 80% to 100% of global energy use. These updates resulted in a significant increase to the base year emissions.

Scope 2 (market-based)

Base year start
January 1 2018

Base year end
December 31 2018

Base year emissions (metric tons CO2e)
416195

Comment
This number is a restatement from the 2020 CDP Climate Change disclosure (and all other previous disclosures). Significant updates include the application of market-based emission factors in the United States (Green-e® Residual Mix Emissions Rates) and Europe (European Residual Mix Rates), the inclusion of electricity generated onsite from contracted fuel cell, cogeneration and solar facilities, and the expanded coverage from 80% to 100% of global energy use. These updates resulted in a significant increase to the base year emissions.

Scope 3 category 1: Purchased goods and services

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
6121014

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 2: Capital goods

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
224832

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
130493

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 4: Upstream transportation and distribution

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
2559007

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 5: Waste generated in operations

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
11972

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 6: Business travel

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
40687

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 7: Employee commuting

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
230062

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
0

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
2268399

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 12: End of life treatment of sold products

Base year start
January 1 2021

Base year end
December 31 2021

Base year emissions (metric tons CO2e)
116458

Comment
Our baseline for Scope 3 emissions is 2021. There is no restatement associated with our reported Scope 3 emissions.

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
US EPA Center for Corporate Climate Leadership: Direct Fugitive Emissions from Refrigeration, Air Conditioning, Fire Suppression, and Industrial Gases
US EPA Emissions & Generation Resource Integrated Database (eGRID)

C6. Emissions data

C6.1

(C6.1) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
298043

Start date
January 1 2021

End date
December 31 2021

Comment
This value was assured by Bureau Veritas.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
278993

Start date
January 1 2020

End date
December 31 2020

Comment
This value is a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing emissions from fleet vehicles and fugitive refrigerant leakage and increasing energy coverage to 100% of our global facilities.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
280407

Start date
January 1 2019

End date
December 31 2019

Comment
This value is a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing emissions from fleet vehicles and fugitive refrigerant leakage and increasing energy coverage to 100% of our global facilities.

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)
283161

Start date
January 1 2018

End date
December 31 2018

Comment
This is our baseline year for our Scope 1 + 2 reduction target. This value is a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing emissions from fleet vehicles and fugitive refrigerant leakage and increasing energy coverage to 100% of our global facilities.

C6.2

(C6.2) Describe your organization’s approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization’s gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
365356

Scope 2, market-based (if applicable)
314972

Start date
January 1 2021

End date
December 31 2021

Comment
These values were assured by Bureau Veritas.

Past year 1

Scope 2, location-based
345364

Scope 2, market-based (if applicable)
334885

Start date
January 1 2020

End date
December 31 2020

Comment
These values are a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing onsite generation and purchasing of renewable electricity and increasing energy coverage to 100% of our global facilities.

Past year 2

Scope 2, location-based
339090

Scope 2, market-based (if applicable)
408555

Start date
January 1 2019

End date
December 31 2019

Comment
These values are a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing onsite generation and purchasing of renewable electricity and increasing energy coverage to 100% of our global facilities.

Past year 3

Scope 2, location-based
373648

Scope 2, market-based (if applicable)
416195

Start date
January 1 2018

End date
December 31 2018

Comment
The market-based value is our baseline value for our Scope 1 + 2 reduction target. These values are a restatement resulting from improvements in data collection and methodology that resulted in a change greater than 5%. Some of the improvements include capturing onsite generation and purchasing of renewable electricity and increasing energy coverage to 100% of our global facilities.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
6121014

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We calculate emissions associated with purchased goods and services mapping our Company spend to standard industrial classification codes that have corresponding 2011 DEFRA spend-based emissions factors. 2011 is the last year DEFRA updated these factors. We adjust the spend to account for inflation since 2011 and currency exchange rates. The reported emissions cover our business purchases and our distribution channel business (FisherSci).

Capital goods

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
224832

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We calculate emissions from capital goods in the same manner as we do for purchased goods and services. See above for that methodology. Spend mapped to the standard industrial classification code “Machinery and equipment n.e.c.” is classified as capital goods.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
130493

Emissions calculation methodology
Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
84

Please explain
We calculate this category by applying UK BEIS well-to-tank emission factors for all purchased fossil fuels, electricity, steam and hot water across our facilities and vehicles. in 2021, approximately 16% of energy purchases are estimated using regional energy intensity factors.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
2559007

Emissions calculation methodology
Distance-based method
Other, please specify (Weight-based method)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
74

Please explain
We calculate transportation and distribution (T&D) emissions using transport mode, weight, and distance data. Shipment origins and destinations are reported at a country-level granularity and for the United States, state-level granularity. Distance is estimated using the geographic center of each origin and destination or where the origin/destination is in the same country/state, an assumed city-to-city trip is used. UK BEIS emissions factors are applied including the use of radiative forcing and well-to-tank factors. As data is available for approximately 74% of our T&D spend, the total value is extrapolated accordingly. The value provided covers upstream and downstream T&D (category 9).

Waste generated in operations

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
11972

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
57

Please explain
We calculate this category using actual waste disposal records from waste vendors outlining mass per material type and waste disposal stream. UK BEIS emission factors are applied to these waste streams. In 2021, data from 57% of our sites, by floor space, was collected and extrapolated to estimate total waste for the Company.

Business travel

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
40687

Emissions calculation methodology
Average data method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We calculated this category based on primary data from our vendors associated with 1) air travel segmentation based on segment distance and cabin class 2) rail travel distance 3) rental vehicle days of use 4) number of hotel stays per country, and 5) estimated travel distance associated with our car allowance program. UK BEIS emission factors were applied including well-to-tank factors and radiating forcing for air travel.

Employee commuting

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
230062

Emissions calculation methodology
Average data method
Other, please specify (Homeworking emissions white paper from EcoAct)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Our employee commuting emissions include both commuting and working from home due to a significant shift in work from home starting in 2020. We calculated employee commuting emissions based on country-specific breakdown of travel forms to estimate total distance per travel type and then applied UK BEIS emission factors including well-to-tank factors. For work from home emissions, we estimated the electricity usage for lighting and computer usage as well as electricity and gas usage for space heating and cooling with country-specific estimations of heating and cooling needs.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Thermo Fisher did not have any upstream leased assets during the 2021 calendar year that were not already calculated as part of Scope 1 and 2 using an operational boundary.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
0

Emissions calculation methodology
Distance-based method
Other, please specify (Weight-based model)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
74

Please explain
Our transportation and distribution (T&D) data cannot flag whether a transit trip is upstream or downstream. As a majority of our T&D is upstream, the entirety of our calculated upstream and downstream T&D emissions is disclosed in our upstream T&D emissions above.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not relevant as the products we sell represent the end of their processing chains as a final product for customer use (examples being freezers and pipette tips).

Use of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
2268399

Emissions calculation methodology
Methodology for direct use phase emissions, please specify (Lifetime electricity consumption and refrigerant leakage for all relevant products sold)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
For calculation of use of sold products emissions, we identified products that consumed electricity or contained refrigerants. None of our products consume fossil fuels. For products consuming electricity, we identified the number units sold during the reporting period and determined estimates for consumption per day, number of days the unit is used annually useful life in years. Together, these provide the estimated total lifetime electrical usage of our products. An average of global residual electricity emission factors was applied to the total electricity value as we conservatively assumed no renewable electricity usage by our customers. For products containing refrigerants, we identified the number of units sold in the reporting period, refrigerant capacity of the unit, type of refrigerant, and estimated lifespan. An average fugitive emission rate of 5.5% per year, based on IPCC Good Practices Guidelines for Stand-Alone Commercial Applications, was utilized in combination with IPCC refrigerant specific emission factors to calculate total greenhouse gas emissions.

End of life treatment of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
116458

Emissions calculation methodology
Other, please specify (Methodology based on estimated disposal of sold products)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions associated with end-of-life treatment of our sold products is difficult to determine as we do not have data associated with the final disposal by our customers. To calculate this emission category, we developed an estimation methodology for the total weight of products sold during the reporting and assumed an equal distribution between waste to energy incineration, landfill, and recycling. UK BEIS waste disposal emission factors were used.

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Thermo Fisher does not have any downstream leased assets nor plans to have downstream leased assets in the future that would fall outside of our operational boundary.

Franchises

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Thermo Fisher does not operate using a franchise model.

Investments

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Thermo Fisher does not operate as a financial institution (e.g., private equity, bank, etc).

Other (upstream)

Evaluation status
Please select

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

Other (downstream)

Evaluation status
Please select

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

January 1 2020

End date

December 31 2020

Scope 3: Purchased goods and services (metric tons CO2e)

5643961

Scope 3: Capital goods (metric tons CO2e)

215064

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

90412

Scope 3: Upstream transportation and distribution (metric tons CO2e)

2580787

Scope 3: Waste generated in operations (metric tons CO2e)

16116

Scope 3: Business travel (metric tons CO2e)

37291

Scope 3: Employee commuting (metric tons CO2e)

157805

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Our data collection coverage in 2020 was incomplete and emission values should not be compared to 2021 reported values.

Past year 2

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Past year 3

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
15.6

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
613015

Metric denominator
unit total revenue

Metric denominator: Unit total
39211000000

Scope 2 figure used
Market-based

% change from previous year
18

Direction of change
Decreased

Reason for change
Our purchasing of renewable electricity increased significantly in 2021, from 15% of global electricity to 22%, resulting in no significant change in absolute emissions while our revenue grew 22%.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	253995	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	353	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	394	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	43301	IPCC Fifth Assessment Report (AR5 – 100 year)
PFCs	0	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	0	IPCC Fifth Assessment Report (AR5 – 100 year)
NF3	0	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Argentina	18
Australia	581
Austria	4307
Belgium	1520
Brazil	835
Canada	10701
Chile	10
China	6531
Colombia	1
Costa Rica	74
Croatia	1
Czechia	2044
Denmark	903
Finland	1318
France	6308
Germany	8732
Hungary	331
India	1006
Indonesia	0
Ireland	8404
Israel	52
Italy	27293
Japan	1282
Lithuania	3404
Luxembourg	1
Malaysia	218
Mexico	1737
Netherlands	4711
New Zealand	465
Norway	276
Poland	95
Portugal	50
Russian Federation	398
Singapore	2333
Slovakia	10
South Africa	381
Republic of Korea	901
Spain	838
Sweden	2245
Switzerland	2503
Taiwan, China	17
Thailand	5
United Arab Emirates	15
United Kingdom of Great Britain and Northern Ireland	20830
United States of America	169620
United States Minor Outlying Islands	4737
Viet Nam	1

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Analytical Instruments	19631
Corporate Offices and Fleet	32636
Laboratory Products and Biopharma Services	177488
Life Sciences Solutions	53667
Specialty Diagnostics	14621

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Argentina	68	68
Australia	2990	2990
Austria	4099	4099
Belgium	582	721
Brazil	88	88
Canada	5007	5007
Chile	33	33
China	26271	26271
Colombia	2	2
Costa Rica	3	3
Croatia	2	4
Czechia	1861	2247
Denmark	973	4286
Finland	2167	4462
France	804	879
Germany	7036	2812
Hungary	65	78
India	4922	4922
Indonesia	2	2
Ireland	9232	208
Israel	111	111
Italy	10557	16962
Japan	1901	1901
Lithuania	1384	0
Luxembourg	1	1
Malaysia	383	383
Mexico	17551	17551
Netherlands	4660	4371
New Zealand	706	706
Norway	22	842
Poland	21	25
Portugal	13	21
Russian Federation	1026	1026
Singapore	7427	7427
Slovakia	24	38
South Africa	2067	2067
Republic of Korea	2175	2175
Spain	433	624
Sweden	89	162
Switzerland	161	205
Taiwan, China	248	248
Thailand	30	30
United Arab Emirates	102	102
United Kingdom of Great Britain and Northern Ireland	15557	3881
United States of America	216231	194926
United States Minor Outlying Islands	16264	0
Viet Nam	5	5

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Analytical Instruments	37684	30383
Specialty Diagnostics	20788	19664
Laboratory Products and Biopharma Services	240926	206525
Life Sciences Solutions	60410	53729
Corporate Offices	5548	4671

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	43200	Decreased	7	We increased our renewable electricity from 15% to 22% of total global electricity usage, resulting in a reduction of approximately 43,200 MTCO2e. [43,200 MTCO2e / 613,878 MTCO2e (2020 Scope 1 + 2) = 7.0%]
Other emissions reduction activities	368	Decreased	0.1	Reductions from projects in 2021 totaled 368 MTCO2e. [368 MTCO2e / 613,878 MTCO2e (2020 Scope 1 + 2) = 0.1%]
Divestment	0	No change	0	No significant divestments occurred during the reporting period
Acquisitions	0	No change	0	The PPD, Inc acquisition was completed in December 2021 and will be included starting next reporting period.
Mergers	0	No change	0	No mergers occurred during the reporting period
Change in output	42705	Increased	7	We experienced significant growth in output to meet the needs of the healthcare industry in 2021, resulting in significant increases in electricity and natural gas consumption across the enterprise. [42,705 MTCO2e / 613,878 MTCO2e (2020 Scope 1 + 2) = 7.0%]
Change in methodology	0	No change	0	2020 values were restated to use the refined methodology updated for 2021. See restated 2020 values in Section C5.
Change in boundary	0	No change	0	2020 values were restated to use the same boundary as 2021 values. See restated 2020 values in Section C5.
Change in physical operating conditions	0	No change	0	No significant changes in physical operating conditions occurred in 2021.
Unidentified	0	No change	0	No other significant changes occurred in 2021 as compared to 2020.
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	1356937	1356937
Consumption of purchased or acquired electricity	<Not Applicable>	248088	914689	1162777
Consumption of purchased or acquired heat	<Not Applicable>	0	5599	5599
Consumption of purchased or acquired steam	<Not Applicable>	0	13246	13246
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	10760	<Not Applicable>	10760
Total energy consumption	<Not Applicable>	258848	2290471	2549319

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
No sustainable biomass is recorded as being used by our operations.

Other biomass

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
No biomass is recorded as being used by our operations.

Other renewable fuels (e.g. renewable hydrogen)

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
No hydrogen is recorded as being used by our operations.

Coal

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
No coal is recorded as being used by our operations.

Oil

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
No fuel oil is recorded as being used by our operations.

Gas

Heating value
HHV

Total fuel MWh consumed by the organization
1195169

MWh fuel consumed for self-generation of electricity
1000

MWh fuel consumed for self-generation of heat
600000

MWh fuel consumed for self-generation of steam
544169

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
50000

Comment
Breakdown of enterprise natural gas usage per use is estimated based general site operational characteristics

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value
HHV

Total fuel MWh consumed by the organization
19353

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
569

MWh fuel consumed for self-generation of steam
18784

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
0

Comment
Includes propane, diesel, and liquified propane gas.

Total fuel

Heating value
HHV

Total fuel MWh consumed by the organization
1214522

MWh fuel consumed for self-generation of electricity
1000

MWh fuel consumed for self-generation of heat
600569

MWh fuel consumed for self-generation of steam
562953

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
50000

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	13669	10760	13669	10760
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify (unknown mix)

Country/area of low-carbon energy consumption
Czechia

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
940

Country/area of origin (generation) of the low-carbon energy or energy attribute
Czechia

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Country/area of low-carbon energy consumption
Germany

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

15561

Country/area of origin (generation) of the low-carbon energy or energy attribute
Germany

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify (unknown mix)

Country/area of low-carbon energy consumption
Lithuania

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
21193

Country/area of origin (generation) of the low-carbon energy or energy attribute
Lithuania

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify (unknown mix)

Country/area of low-carbon energy consumption
United Kingdom of Great Britain and Northern Ireland

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
55677

Country/area of origin (generation) of the low-carbon energy or energy attribute
United Kingdom of Great Britain and Northern Ireland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Unbundled energy attribute certificates (EACs) purchase

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify (unknown mix)

Country/area of low-carbon energy consumption
United States of America

Tracking instrument used
US-REC

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
108000

Country/area of origin (generation) of the low-carbon energy or energy attribute
United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area
United States of America

Consumption of electricity (MWh)
684719

Consumption of heat, steam, and cooling (MWh)
13246

Total non-fuel energy consumption (MWh) [Auto-calculated]
697965

Is this consumption excluded from your RE100 commitment?
<Not Applicable>

Country/area
United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)
63850

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
63850

Is this consumption excluded from your RE100 commitment?
<Not Applicable>

Country/area
Mexico

Consumption of electricity (MWh)
44056

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
44056

Is this consumption excluded from your RE100 commitment?
<Not Applicable>

Country/area
China

Consumption of electricity (MWh)
41940

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
41940

Is this consumption excluded from your RE100 commitment?
<Not Applicable>

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Energy usage

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change
<Not Applicable>

Please explain

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Bureau Veritas - 2022 CDP Assurance Statement.pdf
2021 Assurance Statement-CSR Report.pdf

Page/ section reference
All pages of attached Independent Limited Assurance Statement from Bureau Veritas

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Bureau Veritas - 2022 CDP Assurance Statement.pdf
2021 Assurance Statement-CSR Report.pdf

Page/ section reference
All pages of attached Independent Limited Assurance Statement from Bureau Veritas

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Bureau Veritas - 2022 CDP Assurance Statement.pdf
2021 Assurance Statement-CSR Report.pdf

Page/ section reference
All pages of attached Independent Limited Assurance Statement from Bureau Veritas

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Upstream leased assets
Scope 3: Use of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Bureau Veritas - 2022 CDP Assurance Statement.pdf

Page/section reference
All pages of attached Independent Limited Assurance Statement from Bureau Veritas

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ISAE3000	Limited assurance was conducted for all forms of energy consumption. 2021 Assurance Statement-CSR Report.pdf
C8. Energy	Renewable energy products	ISAE3000	Limited assurance was conducted for all renewable electricity purchases and onsite generation. 2021 Assurance Statement-CSR Report.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
Other carbon tax, please specify (Our UK facilities are subject to the UK Climate Change Levy related to the consumption of electricity and natural gas.)

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Other carbon tax, please specify

Period start date
January 1 2021

Period end date
December 1 2021

% of total Scope 1 emissions covered by tax
81

Total cost of tax paid
890000

Comment
Our UK facilities are subject to the UK Climate Change Levy related to the consumption of electricity and natural gas. Excludes Scope 1 emissions associated with fugitive refrigerant emissions. Total cost of tax paid is approximate.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Our net-zero emission roadmap establishes our intent to transition away from fossil fuels in our facilities and vehicles across the globe while accelerating the adoption of new wind and solar generation facilities on and off-site. This approach will mitigate the negative impact of carbon pricing systems on our business and, depending on the specific regulations, may provide a favorable opportunity for our Company. While the exact timing for when such regulation might commence is unknown, we are closely monitoring the momentum in European countries.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Change internal behavior

GHG Scope
Scope 1

Application
Our net-zero emission roadmap establishes our plan to transition away from fossil fuels entirely in our facilities and vehicles. We are developing approval processes that prohibit the purchasing of new fossil fuel-consuming equipment within our operations.

Actual price(s) used (Currency /metric ton)
0

Variance of price(s) used
With our approach to transition away from fossil fuels within our operations, our price on carbon has no specific value (thus entering 0 above) as the decision is based on considerations other than cost.

Type of internal carbon price
Other, please specify (Prohibition on capital projects that lock in long-term carbon emissions)

Impact & implication
Our net-zero emission roadmap establishes our plan to transition away from fossil fuels in our facilities and vehicles. The impact of this roadmap is to prevent the purchasing of any new fossil fuel-burning equipment. This may not always be possible, but the consideration becomes related to limitations in electrical infrastructure at the local grid level rather than cost. We are developing a new net-zero construction playbook to support our engineers, facility managers, and consultants integrate this new way of thinking into their decision-making. As an example of the implication of this approach, all future natural-gas-fired cogeneration equipment plans are on permanent hold.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
1

% total procurement spend (direct and indirect)
24

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
In 2021, ~200 suppliers, representing 24% of total procurement spend (direct and indirect) were asked to disclose information on environmental management systems and performance via the EcoVadis platform. EcoVadis' environmental assessment includes questions on policy, actions and results related to climate and measures KPIs including if suppliers disclose using CDP and/or have a Science Based Target. Suppliers are expected to achieve a score of at least 45 overall and 25 within the Environmental section to meet Thermo Fisher's Supplier Responsibility expectations.

Impact of engagement, including measures of success
Engagement activities in 2021 were focused on providing resources to suppliers to build capability on Environmental, Labor and Human Rights, Ethics, and Supplier Responsibility topics. Asking suppliers about their ability to measure, disclose, set targets against, and ultimately reduce carbon emissions promotes sustainability literacy and maturity towards our aim of aligning our procurement spend with suppliers who have set science-based targets. 2021 served as the first year for tracking spend percentage with suppliers who had validated (6%) or committed (9%) science-based targets, a metric we will continue to track moving forward as our primary measure of success. The data gathered through these efforts provide our procurement teams with valuable information for sourcing decision-making. Year-over-year we continue to see additional suppliers improve their performance. In 2022, we are expanding our engagement to include not only EcoVadis engagement on the four aspects described above but also additional targeted engagement on climate change via the CDP Supply Chain platform. Through this scheme, we are inviting suppliers representing the top 60% of our estimated Scope 3 Purchased Goods and Services emissions, and our top 16 transportation carriers and freight forwarders to disclose their climate risks, targets, and performance in order to better understand what capabilities various supplier segments will require in order to move suppliers towards setting Science Based Targets.

Comment

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
1

% total procurement spend (direct and indirect)
1

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
In 2021, targets for this type of engagement were the only two suppliers that scored under 25 for the environment section of the EcoVadis survey. To improve their scores, EcoVadis provides guidance and training on how suppliers can improve based on their specific responses and business. Supplier A was ~$12M and Supplier B was ~$4M. Moving forward, in 2022 we are expanding our training offerings to suppliers through participation in the CDP Supply Chain program. This engagement also includes specific training for suppliers via joint Thermo Fisher and CDP webinars, and supplier access to CDP tools and training. Additionally, in key categories of goods that have a significant impact on our Scope 3 emissions, procurement is partnering with R&D teams and suppliers to discuss opportunities for exploration of lower carbon alternate materials and solutions.

Impact of engagement, including measures of success
Supplier A increased its score from 20 to 40. Supplier B increased its score from 20 to 30. This indicates both suppliers improved their climate management programs from unsatisfactory to acceptable because of the engagement.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to education customers about your climate change performance and strategy

% of customers by number
1

% of customer - related Scope 3 emissions as reported in C6.5
13

Please explain the rationale for selecting this group of customers and scope of engagement
Climate is becoming an increasingly important consideration to many of our customers. The group of customers identified herein are those actively looking to understand the environmental impact of the goods and services they purchased from Thermo Fisher Scientific. With these customers, we provide an overall view of our environmental sustainability program as well as their specific emission allocations.

Impact of engagement, including measures of success
The intent of proactively engaging with customers on environmental sustainability issues is to understand their expectations and how we can best meet them. Understanding that each customer has a unique set of needs and ways to measure success (i.e., higher renewable electricity, emission reduction target, maturity model), our objective is to develop a holistic, but flexible program that enables us to progress against these various metrics in partnership with our customers.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization’s purchasing process?
Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization’s purchasing process and the compliance mechanisms in place.

Climate-related requirement
Climate-related disclosure through a public platform

Description of this climate related requirement
Towards our target of having 80% of direct materials spend (~40% of all procurement spend) assessed by EcoVadis by 2025, in 2021 we set an interim target of 20% of direct materials spend (~10% of all procurement spend) with a completed assessment, and exceeded that target, closing the year at 31% (~16% of all procurement spend). This assessment process allows us to communicate our expectations regarding environmental management and assess a supplier’s ability to meet that expectation.

% suppliers by procurement spend that have to comply with this climate-related requirement
10

% suppliers by procurement spend in compliance with this climate-related requirement
16

Mechanisms for monitoring compliance with this climate-related requirement
Off-site third-party verification
Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement
Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate
Yes, we engage indirectly through trade associations

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?
No, but we plan to have one in the next two years

Attach commitment or position statement(s)
<Not Applicable>

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy
We will be developing processes over the next 6 to 18 months to ensure that our engagement activities are consistent with our strategy to achieve net-zero emissions by 2050 and enable our customers to make the world healthier, cleaner and safer.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Business Roundtable

Is your organization's position on climate change consistent with theirs?
Consistent

Has your organization influenced, or is your organization attempting to influence their position?
We are not attempting to influence their position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)
Representing the chief executive officers of America's leading companies, which combined have more than 15 million employees and generate more than $7.5 trillion in annual revenues, Business Roundtable believes corporations should lead by example, support sound public policies and drive the innovation needed to address climate change. To this end, the United States should adopt a more comprehensive, coordinated and market-based approach to reduce emissions. This approach must be pursued in a manner that ensures environmental effectiveness while fostering innovation, maintaining U.S. competitiveness, maximizing compliance flexibility, and minimizing costs to business and society. International cooperation and diplomacy backed by a broadly supported U.S. policy will be the key to achieving the collective global action required to meet the scope of the challenge and position the U.S. economy for long-term success. The consequences of climate change for global prosperity and socioeconomic well-being are significant; the world simply cannot afford the costs of inaction.
https://www.businessroundtable.org/climate#:~:text=Business%20Roundtable%20believes%20that%20to,consistent%20with%20the%20Paris%20Agreement. There are no significant differences between our positions.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)
300000

Describe the aim of your organization's funding
Membership dues

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
No, we have not evaluated

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In voluntary sustainability report

Status
Complete

Attach the document
2021 CSR Report Thermo Fisher Scientific.pdf

Page/Section reference
Environmental Section on pages 39 to 44 Environmental Data on pages 50 to 52 TCFD Index on pages 63 to 64

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
This is our 2021 Corporate Social Responsibility Report.

Publication
In other regulatory filings

Status
Complete

Attach the document
2022 Proxy Statement.pdf

Page/Section reference
Climate section included on page 34

Content elements
Strategy
Emission targets

Comment
This is our 2022 Proxy Filing

Publication
In mainstream reports

Status
Complete

Attach the document
2021 Annual Report.pdf

Page/Section reference
Climate discussed on page 4 One climate risk example discussed on page 21 of 10K

Content elements
Strategy
Risks & opportunities
Emission targets

Comment
This is our 2021 Annual Report

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	No, and we do not plan to have both within the next two years	<Not Applicable>	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	No, and we do not plan to do so within the next 2 years	<Not Applicable>	<Not Applicable>

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	No, and we do not plan to assess biodiversity-related impacts within the next two years	<Not Applicable>

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	No, and we do not plan to undertake any biodiversity-related actions	<Not Applicable>

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	Please select

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
No publications	<Not Applicable>	<Not Applicable>

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Senior Vice President of Global Business Services	Other C-Suite Officer

SC. Supply chain module

SC0.0