

Koninklijke DSM - Climate Change 2021

C0. Introduction

C0.1

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

Royal DSM is a global, purpose-led, science-based company active in Nutrition, Health and Sustainable Living. DSM's purpose is to create brighter lives for all. Our products and solutions address some of the world's biggest challenges while simultaneously creating economic, environmental and societal value for all its stakeholders – customers, employees, shareholders, and society at large. DSM delivers innovative solutions for human nutrition, animal nutrition, personal care and aroma, medical devices, green products and applications, and new mobility and connectivity.

As a company active in Nutrition, Health and Sustainable Living, we address the opportunities that are driven by global megatrends and the United Nations' Sustainable Development Goals (SDGs). We contribute to these with our science-based solutions to create brighter lives for people today and generations to come. Our bright science has delivered benefits across multiple dimensions, already reaching ~2.5 billion people in the world today in our three focus domains of Nutrition & Health, Climate & Energy and Resources & Circularity.

We are a company that is striving to do well by doing good – because ultimately, we cannot be successful, nor even call ourselves successful, in a world that fails.

DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23,000 employees. The company is listed on Euronext Amsterdam. More information can be found at www.dsm.com and in our Integrated Annual 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 2020	December 31 2020	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina

Australia

Belgium

Brazil

Canada

Chile

China

Colombia

Costa Rica

Ecuador

France

Germany

Greece

Guatemala

Hungary

India

Indonesia

Italy

Japan

Malaysia

Mexico

Netherlands

New Zealand

Peru

Philippines

Poland

Republic of Korea

Romania
Russian Federation
Singapore
South Africa
Spain
Switzerland
Taiwan, Greater China
Thailand
Turkey
United Kingdom of Great Britain and Northern Ireland
United States of America
Uruguay
Viet Nam

C0.4

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

EUR

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.

Financial control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Please select

Bulk inorganic chemicals

Please select

Other chemicals

Specialty organic chemicals

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
Chief Executive Officer (CEO)	Sustainability falls under the responsibility of the Managing Board. As of 15 February 2020, DSM's COO and CFO are also Co-CEOs of DSM. Their individual responsibilities are mentioned below. In 2020, the Co-CEOs oversaw Sustainability as a key responsibility and company value as well as a driver of business growth. They jointly oversaw our strategic partnership with the World Economic Forum. In addition, each of the specific actions in DSM's climate action agenda are owned by members of the Managing Board and Executive Committee.
Chief Financial Officer (CFO)	In 2020, DSM's Co-CEO / CFO was responsible for integrating Sustainability into financial decision-making. She also oversaw our efforts and commitment toward the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations. Within the climate action agenda, she was responsible for integrating climate risks into our risk management process, TCFD, carbon pricing and developing our engagement with climate-focused investors. For example, after the successful transition risk assessment pilot in 2020, she approved the continuation of the climate risk assessment process. Furthermore, in early 2021, she approved the increase of the internal carbon price from €50/t CO ₂ eq to €100/t CO ₂ eq to better reflect the updated insights on the actual price of CO ₂ to society. This price is also within the ranges of the scenarios we use for assessing climate transition risks.
Chief Operating Officer (COO)	In 2020, DSM's Co-CEO / COO was responsible for Safety, Health and Environment (SHE) and supervised our Sustainable Procurement Program and the sourcing of electricity from renewable sources in his responsibility for the Sourcing function. He managed our engagement with organizations with a primary focus relating to climate. Within the climate action agenda, he was responsible for our product portfolio impact measurement upgrade and climate advocacy efforts, and for reviewing our emissions reduction targets. He was also responsible for overall supervision of the full climate action agenda. For example, in his responsibility for the Sourcing function, he approved DSM's largest PPA to date, which was announced in April 2020. Furthermore, in mid-2021, he approved the increase of DSM's Science Based Targets.

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 – all meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<Not Applicable>	<p>DSM has developed an 11-point climate action agenda which is actively reviewed by the wider Executive Committee several times a year. The Executive Committee consisted of the two Managing Board members as outlined above, and four additional executives. The topics cover the three domains of (1) reducing and reporting our GHG emissions and climate-related risks, supported by TCFD implementation and advancing our internal carbon price (2) enabling a low-carbon economy by seizing climate-related business opportunities, which is reflected in our policies and activities in the areas of M&A, portfolio steering and investor relations and (3) internal and external engagement and targeted, constructive climate advocacy. Different members of the Executive Committee, including the members of the Managing Board, are responsible for updating the EC on the progress.</p>

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
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

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
Chief Financial Officer (CFO) <i>Note: As of 15 February 2020, DSM's CFO is also Co-CEO of DSM.</i>	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Operating Officer (COO) <i>Note: As of 15 February 2020, DSM's COO is also Co-CEO of DSM.</i>	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Sustainability committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Risks Officer (CRO)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Safety, Health, Environment and Quality committee <i>DSM employs 2 groups in this area - the Operations Leadership Team and the SHE Leadership Team.</i>	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Procurement Officer (CPO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than 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).

DSM sees sustainability, including climate, as not only our core value and a key responsibility, it is increasingly an important business growth driver at DSM that is fully engrained in our strategy. For this reason, it is directly overseen by our Managing Board, our highest executive body. They are supported in this through the supervision of the Supervisory Board and its Sustainability Committee, and advised by the Sustainability Advisory Board. Furthermore, DSM has a Sustainability Leadership Team (SLT), a Safety, Health and Environment Leadership Team (SHE-LT) and Operations Leadership Team (OLT) that steer and execute DSM's sustainability approach.

Managing Board

Sustainability, including climate topics, falls under the responsibility of the Managing Board. While DSM's Co-CEOs are the primary point of contact, other members also chair sustainability topics and initiatives. The Co-CEOs oversee climate topics and strategy as a key responsibility and company value as well as a driver of business growth. They jointly oversaw our strategic partnership with the World Economic Forum.

DSM's Co-CEO/CFO (and member of the Managing Board) is responsible for integrating sustainability into financial decision making and represents DSM in the relevant external networks, including the Accounting for Sustainability (A4S) CFO Leadership Network. The CFO also oversees our efforts and commitment toward the Taskforce for Climate-related Financial Disclosures recommendations, as well as the implementation of an internal carbon price across the company.

DSM's Co-CEO/COO is responsible for Safety, Health and Environment (SHE) and also oversaw our Sustainable Procurement Program and the sourcing of electricity from renewable sources in his responsibility for the Sourcing function. He is also responsible for overall supervision of the full climate action agenda.

Supervisory Board

Our Supervisory Board has its own Sustainability Committee to oversee progress against targets and to report on the embedding of sustainability, including climate, across the organization. The Sustainability Committee is comprised of 3 Sustainability Board members - the Chair, with sustainability and innovation experience, and two members, with experience in emerging economies and people as well as experience with DSM's business areas - has the responsibility to prepare the Supervisory Board's discussions on sustainability topics. The chair of the Supervisory Board has a standing invitation to the Sustainability Committee and participated in all meetings. The feedback from the Committee to the full Board included advice and recommendations regarding topics to be approved by the Supervisory Board. Deep dives were made into several topics. One was our greenhouse gas roadmap for scope 1 + 2 emissions, as well as scope 3 emissions. Furthermore, due to the strategic impact of the step up in the target level, the Sustainability Committee was consulted during the revision of DSM's Science Based Targets.

DSM's Leadership Teams

At a corporate level, sustainability is steered by our Sustainability Leadership Team (SLT), a group of senior executives representing the business groups and contributing corporate functions, which is chaired by the Vice President Sustainability (DSM's equivalent of the Chief Sustainability Officer in C1.2).

DSM employs 2 groups in the area relating to SHEQ Committee - the Operations Leadership Team and the SHE Leadership Team. Our Operations Leadership Team (OLT) consists of all DSM's COOs, and drives our emissions reduction program and activities, supported by our environmental dashboarding system which is prepared by DSM O&RC. The OLT cascades the implementation of the program into the manufacturing organisations. In addition, our SHE Leadership Team (SHE-LT) is comprised of all business group SHE directors, and is instrumental in sharing experiences, developing best practices, and delivering results on Safety, Health and Environmental issues.

Our Chief Risk Officer was responsible for integrating physical and transition climate risks into our risk management approach. She was appointed by the CFO to lead a taskforce to address the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). The taskforce, comprising representatives from finance, risk management, sustainability, and investor relations, works with functions such as strategy, operations and procurement, to define what is needed to meet our commitments toward TCFD. In 2020, the first physical risk assessments and the first transition risk assessment pilots were completed. Our Chief Procurement Officer oversees our scope 3 reduction program, C02REDUCE, together with our Supplier Sustainability team.

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	

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
Board/Executive board	Monetary reward	Emissions reduction target Energy reduction target	The CEO/Managing Board/Executive Committee have long term GHG emission reduction targets and energy efficiency improvement (EEI) targets. The incentivized performance indicators for climate change issues are published in the Remuneration Report in the Integrated Annual Report 2020 (see for example https://annualreport.dsm.com/ar2020/report-by-the-supervisory-board/remuneration-report-2020/remuneration-of-the-managing-board/total-remuneration-2020.html)

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	All DSM executives have a climate change target (i.e. Energy & GHG efficiency improvement) as part of their annual bonus scheme. This includes the members of the Executive Committee, as well as the heads of all DSM businesses and functions.
Environment/Sustainability manager	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	Personal objectives (which determine bonus and/or merit increase) linked to achieving company climate change targets.
All employees	Non-monetary reward	Emissions reduction project Energy reduction project Efficiency project Behavior change related indicator Environmental criteria included in purchases	DSM yearly recognizes excellent SHE performance within our company through the DSM SHE Award (1 winner and 1 runner-up) and SHE Recognition Awards (max 4 winners). The coverage of these awards is 100% of the employees as every location (regardless of the size or its nature) could win one of the awards. The DSM SHE Award is the highest achievable trophy for SHE excellence in DSM. The statue symbolizes DSM, its values, its transparency and its continuous change and improvement spirit . Selection criteria for SHE awards are based on 1. Management of SHE 2. Safety 3. Health 4. Environmental 5. Sustainability performance. Please find below a summary of the relevant criteria: Environment: • Improvements on Environmental performance and their trends. • Initiatives (being in execution) to improve environmental performance such as: 1. Energy saving 2. Greenhouse gas reduction (such as N2O or CO2 reduction) 3. Waste reduction 4. Use of renewable sources 5. Reduction of Priority Substances 6. Use of water (Reduction of quantity or emissions to water) 7. Biodiversity 8. (personal) eco footprint, Sustainability • Diversity / Inclusion in the management team/workforce. • Deployment of DSM Code of Business Conduct, including corruption and bribery policies. • Product stewardship initiatives such as customer relation management on SHE issues, etc. • Quality and effectiveness of stakeholders' management e.g. initiatives to improve corporate citizenship
Procurement manager	Monetary reward	Emissions reduction project Environmental criteria included in purchases Supply chain engagement	The program and procurement managers responsible for managing DSM's scope 3 emissions and CO2REDUCE program have personal targets relating to the execution and progress of the program. This program aims to generate deeper insights into the emission performance of our supplier base, identify the GHG reduction options at key suppliers, and support the collaboration needed to enable these initiatives. On an individual basis, other procurement managers may, where relevant, also have targets relating to scope 3 emissions.
Chief Procurement Officer (CPO)	Monetary reward	Emissions reduction target	In addition to the targets as a DSM executive, our CPO has additional targets relating to value chain (scope 3) engagement and emissions reduction.

Entitled to incentive	Type of incentive	Activity incentivized	Comment
		Supply chain engagement	

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	Climate related risks related to Climate incidents happening in the world currently
Medium-term	3	10	Climate related risks which currently has no direct impact, but probably developing fast (emerging risks). This aligns to the 2030 horizon considered in our scenario analysis.
Long-term	10	25	Climate risks based on scenario assessments. This aligns to the 2050 horizon considered in our scenario analysis.

C2.1b

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

At DSM, substantive financial impact is defined for Top risks as the exposure on DSM's EBITDA, being an indicative €30 million or more. Strategic impact is defined for Top risks where they have a major non-financial impact such as on reputation. Risks are classified as Generic/strategic, Operational, Financial & Reporting, or Legal & Compliance related. Identification of climate-related risks is subject to the same impact thresholds as for all other risks.

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

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process

iii) DSM has explicitly integrated climate change risks and business growth opportunities arising from climate change in its long term Corporate Strategies. The Managing Board is accountable for the management of all risks (including climate-related risks) associated with our company's strategy and activities. To this end, appropriate risk management and internal control systems are in place. The responsibility for identifying and managing risks lies with DSM's individual units. Risk management at DSM is based upon the COSO-ERM framework. Risk assessments and mitigation plans are carried out at various levels in the organization. We take a standard but flexible approach to risk assessments: a) Risk assessment planning; b) preparation; c) Risk identification and clustering; d) Risk rating; e) Evaluation and risk response. For the risk identification individual input is requested from relevant stakeholders/ knowledge holders. The total input received serves as input to the next step in which all risks are rated along 2 axes: Likelihood and Impact. The combination of these two dimensions results in the Risk Exposure. The Risk Exposure informs us of which of the identified risks are substantive/strategic. The rating is initially done individually, followed by a group discussion in which the final rating takes place and mitigating measures are defined, if any. The potential costs of additional mitigations are balanced versus the reduction in risk exposure that will be achieved. Both short-term and emerging (medium- and long-term) risks in the risk areas Generic/ strategic, Operational, Financial and reporting and Legal and compliance are the focus of our risk assessments. The units are supported by the Group Risk Management (GRM) department and are regularly assessed by the Corporate Operational Audit (COA) department. Both GRM and COA report directly to the CFO/Co-CEO, and COA has direct access to both Co-CEO's as well as to the Audit Committee of the Supervisory Board. To continuously improve the effectiveness of our risk assessment process, a Risk Assessment Manual and a training program for the facilitation and execution of risk assessments are in place. Corporate Risk Assessment; We periodically conduct a

Corporate Risk Assessment (CRA), which is the responsibility of the Managing Board. As part of this assessment, the Executive Committee (EC) reviews and agrees on the short-term top risks as well as emerging risks. The EC also agrees on how to mitigate and monitor these. The outcome of the CRA is reported to, and discussed with, the Audit Committee of the Supervisory Board annually. Unit Risk Assessments; The DSM units (the business groups, support functions, functional excellence departments and regions) also conduct various types of risk assessments. Most risk assessments are carried out by cross-functional teams. These teams include experienced facilitators as well as experts who can challenge assumptions in order to help improve the quality of these risk assessments. Examples of risk assessments: Business Risk Assessments: focus on risks that could jeopardize the attainment of our strategic and business objectives, or could impact our reputation. - Process Risk Assessments: focus on making our processes robust and fraud-proof. - Project Risk Assessments focus on specific projects and are updated throughout project execution to secure successful delivery of project objectives and value creation for the company. Complementing the above, additional specific risk assessments may be performed for areas such as Safety, Health, Environment, Climate, Security and topics such as complex organizational changes. Depending on the topic units are supported by different corporate departments such as the Sustainability department and the Operations & Responsible Care department. Letter of Representation; The Letter of Representation (LoR) is a biannual process whereby DSM's units provide a comprehensive overview of incidents and risks to the Managing Board. The units report their identified short-term and emerging risks according to four categories: generic & strategic; operational; financial & reporting; and legal & compliance. The LoR also documents the mitigation actions defined in respect of these risks. A formal sign-off by each unit director is required. The output of the LoR process is discussed in the Executive Committee as well as the Audit Committee of the Supervisory Board. iv) case study on process applied to Physical risks: The water risk assessment performed for site in Pune (India) was performed by a cross-functional team to identify potential water risks for the site. The risk evaluation highlighted a key risk the site could experience was water shortages due to external infrastructure limitations and regulatory requirements, which would be further exacerbated by drought. A water stream mapping identified several responses that would lead to improvements in recycling, reducing water consumption and education. For example, (1) the installation of an Effluent Treatment Plant, Effluent Storage tank and a new Process Vacuum Pump on-site enabled the treatment and storage of effluent for reuse in the process vacuum pump instead of fresh water; (2) a new cooling tower fan automation was installed to reduce evaporation losses; and (3) extensive education campaigns to instil a Zero Leakage culture. Water consumption was reduced in 10 years (2009-2019), from above 5 m³/ton to significantly below 1 m³/ton, reducing potential long-term risks relating to water and climate change. Based on the mitigating actions taken, Pune's water risk exposure is now considered low. v) case study on process applied to transition risks: A specific example of a transition risk is potential increases in carbon prices that can negatively impact pricing and/or availability of purchased supplies, as well as the costs of our own operations. This risk was identified in the Corporate Risk Assessment process as an emerging risk. Also, this risk was identified in the risk assessments performed at unit level, and reported as such in the LoR process. It is either a short-term risk or an emerging risk, depending on the current and potential exposure of the sites to carbon pricing schemes. The impact could increase in materiality

depending on considered time horizons, as well as future emissions and future regulatory developments. More detailed evaluations are being conducted by corporate resources, that together with the units, agree on the business-relevant scenarios, execute the risk assessment, evaluate the outcome and define the risk response. Risk responses that are being executed include: 1) The implementation of our GHG roadmaps to reduce our scope 1 and 2 emissions and to deliver on our GHG ambitions 2) The CO2Reduce supplier engagement (scope 3) program 3) Shifting to bio-based materials

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	Compliance with current regulations is always included in DSM's climate related risk assessments, as it could affect both the operating costs and our license to operate. (i)Example of the risk type relevant to DSM: One example of a considered potential risk from current regulation specific to DSM is through our sites subjected to Carbon Pricing schemes. The risk assessment related to this is executed by the Global Sourcing department together with DSM Operations and Responsible Care, in close collaboration with the impacted sites. Example of such a site is our site in Delft, Netherlands which is subject to the EU ETS. Monitoring is conducted on a frequent basis of the actual and planned emissions, free allowances, purchased allowances, forecasting of external developments and the total cost resulted. Through this approach, the impact of taken and upcoming emissions reduction activities is closely integrated to the regulatory compliance plan.
Emerging regulation	Relevant, always included	Governments around the world are focusing increasingly on the environmental footprint of their domestic industries. DSM operations cover some 200 sites and offices in nearly 50 countries. Compliance with emerging regulations is always included in DSM's risk assessments, as it affects both the operating costs and our license to operate. (i)Example of the risk type relevant to DSM: One example of a considered potential risk from emerging regulation specific to DSM is through our sites expected to be subjected to emerging Carbon Pricing schemes. Example of such sites are selected sites in China. DSM has currently 25 manufacturing sites in China. While the impact to our sites may vary regionally, the sites together with our Global Sourcing excellence and DSM Operations & Responsible Care team are already preparing the needed documentation and assessment of the financial impacts to business. These assessments take into consideration how the emerging schemes will impact direct costs, and compliance costs from monitoring, reporting and verification. Furthermore, as a preparation to emerging carbon pricing schemes, across DSM an internal carbon price of €50 per ton CO2e (increased to €100 in 2021) is used when reviewing large investment decisions to assess to what extent these will increase DSM's exposure to increased operational costs and get a more complete overview of the business case on short and long term. The internal carbon price is also included in Profit and Loss statements of the business groups for internal management reporting. The internal carbon price increases the visibility of, and encourages accountability for, the impact of carbon on the business.

	Relevance & inclusion	Please explain
Technology	Relevant, always included	The continuous assessment of technology developments is key for considering costs of operations, meeting our GHG reduction targets and maintaining our competitiveness in our markets. (i)Example of the risk type relevant to DSM: A potential risk from technology specific to DSM is with DSM's applications in the offshore oil market. In this market, slings, ropes and mooring lines are used for exploration, and to moor stations and platforms. In the 1.5 degree scenario, we expect to see a significant slowdown on new projects and reductions for the existing business. The mitigation for this risk is in the diversification of the product portfolio into new energy transition applications, such as deep water wind farms requiring high performance mooring possibilities. In this market, the recently released bio-based Dyneema grades would be considered a differentiator for DSM.
Legal	Relevant, always included	DSM is risk averse when it comes to legal and compliance risks, and the risks coming from litigation cases (existing ones and potential new ones) is always included in risk assessments. In addition to the standard reporting process for risks via the LoR process, we also maintain a separate reporting process on existing, open litigation cases, which have an uncertain outcome. (i) Currently we have no material open litigation cases that are climate-related, however an example risk that we monitor in this space externally relates to legal action against companies regarding their (inadequate) GHG emission reductions targets and ambitions. This could pose a risk for our target setting and consequently, for our manufacturing sites globally. However, we do not expect this to represent a material risk to DSM.
Market	Relevant, always included	DSM identified market risk as an emerging risk, when our end-markets may be disrupted by longer-term changes related to the transition to a net-zero world faster than our ability to adapt. (i)Example of the risk type relevant to DSM: In the automotive market, DSM provides products that support internal combustion engines with high performance and/or high temperature engineering materials that replace metal components (such as an engine manifold) or reduce friction (such as timing chain guides), improving fuel efficiency. The transition to zero emissions vehicles is a market risk, driven by the rate of change in consumer preferences combined with regulatory changes. DSM aims to mitigate this risk by developing materials that support the electric and hydrogen-fuel-cell automotive sectors.
Reputation	Relevant, always included	Although considered unlikely, DSM considers the risk of reputation loss due to the potential gap between our communication and commitments made externally, compared to the actual or perceived ESG performance. (i)Example of the risk type relevant to DSM: DSM is a globally active, purpose-led company that is very vocal on climate change related issues and as such exposed to risks worldwide that could impact perceptions by stakeholders if DSM fails to deliver sufficiently on its climate change expectations, such as our proportional contribution to meet the Paris Agreement goals (our Science Based emissions reduction Targets). We are taking several steps to mitigate this risk. 1. it is crucial to deliver against any targets and commitments we make. For this purpose, we have several dedicated programs in place to address both operational emissions and value chain emissions, ensuring annual emissions reductions are in line with our science based targets 2. We monitor the level of our targets to ensure they are considered ambitious enough 3. We perform risk assessments on physical and transition climate risks and act upon them 4. DSM has an Issue Management System in place that helps it track, monitor and engage on any perception that could negatively influence the company's reputation

	Relevance & inclusion	Please explain
Acute physical	Relevant, always included	As an essential complement to our efforts to cut emissions, we also apply an integrated strategy of climate adaptation measures. For example, we conducted a risk assessment of our top 30 sites. Three acute risks were included (flooding, wildfire, cyclones), three time horizons (present, 2030 and 2050) and 3 scenarios (1.5°C, 2°C, and 3-4°C). (i)Example of the risk type relevant to DSM: The results of the physical risks assessment indicates that of the assessed acute physical hazards, flooding could potentially cause major business disruption, due to damage to equipment, interruptions in feedstock or utility supply, and limitations in site accessibility. Different mitigation measures (e.g. flood barriers) have already been put in place, either by DSM or municipality/governments.
Chronic physical	Relevant, always included	As an essential complement to our efforts to cut emissions, we also apply an integrated strategy of climate adaptation measures. For example, to improve the resilience of our assets and supply chains against potential physical impacts of climate change, we apply scenario analysis to assess our physical risks for our top 30 sites. Two chronic risks were included (extreme heat, water scarcity), three time horizons (present, 2030 and 2050) and 3 scenarios (1.5°C, 2°C, and 3-4°C). (i)Example of the risk type relevant to DSM is water scarcity (the ratio of total water withdrawals to total water renewable supply in a given area as DSM's sites require fresh water for manufacturing, and use water for cooling). Increased temperatures could reduce cooling capacity in summer by limitations on water intake (physically or by authorities) leading to reduced production capacity. The short-term/medium-term risk is managed via the Water Risk Assessments that have been ongoing for a few years now. The long-term focus was added for the 30 material sites via the scenario analysis that was completed.

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

Emerging regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

As a result to the Paris COP21 agreement, governments around the world are focusing increasingly on the environmental footprint of their domestic industries. While we strongly support the development of carbon pricing schemes, the risks deriving from uncertainty from developments in existing carbon pricing schemes (e.g. EU ETS) and emerging new cap & trade or carbon tax systems in other jurisdictions are closely monitored as these could result in increased operating costs. i) DSM operations cover some 200 sites and offices in nearly 50 countries. Emerging and developing carbon pricing mechanisms are likely to affect DSM's operations directly (eg. in EU, Switzerland, UK, and China) leading to an increase of operational cost (i.e. liabilities to purchase emissions allowances at higher price) or indirectly through cost pass through from energy providers as DSM is fairly energy intensive, or from suppliers resulting in higher material costs (some feedstocks used have high upstream carbon footprint). DSM operating sites subjected to current carbon price schemes are in Europe (Netherlands, UK, France, Germany, Switzerland). In the EU there is a certain level of uncertainty of the future design of EU ETS (with uncertainty itself considered a risk), but changes are expected in the form of increased price of allowances, and/or lower the amount of free allowances granted. In the other parts of the world, new carbon pricing policies also covering DSM industry sector are planned or under implementation, such as in China (DSM has currently 25 manufacturing sites in China). Direct impacts are likely to result in increased operating costs and compliance costs from monitoring, reporting and verification (to a limited extend). Other regions in the globe are also working on carbon pricing mechanisms, such as North America and South America (i.e., Brazil), where DSM also has operations.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

8000000

Potential financial impact figure – maximum (currency)

120000000

Explanation of financial impact figure

iii) The potential annual financial impact can range from €8 million - €120 million annually depending on the magnitude of changes/increase of carbon prices across jurisdictions and complementary policy measures. For example, at the moment in several jurisdictions the prices are still very low and/or amount of free allocations are fairly significant, with most carbon liabilities for DSM in Europe. As part of our regular monitoring, short-medium and longer-term pricing scenarios are drawn. For example, for 2025 we would expect carbon liability of €8-10 million but in 2050-2030 timeframe the range estimate spreads broadly (from approximately €15 million to €120 million) due to uncertainties in revisions of carbon pricing schemes. The lower end for the potential financial impact is based on our forecasts for 2025, and is based on the following internal assumptions: 1) sites expected to be subject to an ETS 2) a carbon price of around €50/tCO_{2e} in 2025 3) forecasted (reduced) quantities of free allowances 4) Estimated emissions for sites in scope, covering business growth and GHG reduction roadmaps. The higher end for the potential financial impact figure has been calculated for illustrative purposes. For the example, with a price of 100€/tCO_{2e}, the level of our Internal shadow Carbon Price, we would be liable for our current Scope 1 emissions approximately €62 million (620 kt CO_{2e} * 100€/tCO_{2e}), assuming no free allowances are available, and all our global operations are subject to some form of ETS. In addition, we could reasonably expect costs to be passed onto us related to our scope 2 emissions This would amount to an additional approximately €62 million (620 kt CO_{2e} * 100€/tCO_{2e}), subject to the same assumptions as above. This brings the total to approximately €120 million. Due to the uncertainty around scope 3 emissions, these have not been accounted for in this calculation. The risk level is also naturally depending on the speed by which DSM is able to reduce the actual emissions; our current GHG target is to reduce Scope 1 and 2 emissions in absolute terms with 50% by 2030 which will impact on the above calculations.

Cost of response to risk

21500000

Description of response and explanation of cost calculation

iv) DSM's total exposure will be reduced through the implementation of our GHG reduction targets. We mitigate this risk by working toward our GHG emission reduction targets (for direct operations 50% reduction in absolute terms by 2030 compared to baseline 2016), and our net zero by 2050 commitment. GHG reductions are supported by Corporate targets for Energy Efficiency Improvement (1% annually) and 75% Renewable Electricity in 2030. These targets are part of the Long Term Incentives of the Managing Board and are included in the personal targets of all executives in the company. Cap & trade changes to the EU ETS and similar systems worldwide are closely monitored. Site managers, with Global Sourcing excellence, monitor of frequent basis the resulted emissions, free allowances, purchased allowances, forecasting of developments and the total cost resulted. DSM also uses Internal Carbon Pricing (globally) to already stress test and ensure any new investments are viable event with developing regulatory environment. Internal

carbon price of €100/t CO₂e is always applied in large investments and reported in the P&L of the businesses of DSM. Since 2019, business growth projects must either be GHG-neutral or else be compensated for within the same business. A case study where DSM's carbon pricing scheme has been a supporting driver for an emissions reduction investment is the biomass project in Switzerland, which was an opportunity to renew an old installation with limited investments in a cost neutral way. While the Swiss ETS prices at the time were not sufficiently high to fully support the business case, we applied our internal carbon price (€ 50/mt CO₂e at time of investment) to prepare for future carbon prices. The project reached full year capacity in 2020, realizing a total of 46kt CO₂e annual reduction of emissions for DSM. iv) Explanation of cost calculation: The estimated costs are ~€21.5 million/year, comprising the greenhouse gas reduction investment budget, and the FTEs required to manage the GHG program and to monitor longer-term developments. An annual investment budget of up to €20 million is available within the GHG reduction program, depending on the availability and feasibility of projects. The FTE costs are estimated at an annual €1 million for FTEs from 18 sites where significant time is dedicated to the program , and €0.5 million from other functions, such as sourcing and sustainability, supporting the delivery and monitoring.

Comment

DSM is also in favor of the expansion and linking of carbon pricing systems as a way to improve the long-term certainty of the policy environment, and visibly advocating for the topic using various platforms to engage with key stakeholders and policymakers.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
------------------	-------------------------------------------------------------------------------

Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

i) DSM applies a methodology to assess long-term physical risks in a systematic way using scenario analysis, with an initial focus on the top 30 main operating sites. The hazard assessment was undertaken considering the extent of (1) the existing hazard at the sites and (2) the future hazard at the 2030 and 2050 timeframes. The assessment was conducted for three future scenarios, the IPCC 'RCP 2.6' comparable to a "global 1.5 degrees warming by 2100" scenario; the IPCC 'RCP 4.5' comparable to a "global 2 degrees warming by

2100” scenario and to WRI Optimistic Scenario; and the IPCC ‘RCP 8.5’ comparable to a “global 4 degrees warming by 2100” scenario, i.e. business as usual scenario and WRI Pessimistic Scenario. The site locations assessed span across Europe (14 sites), China (4 sites), North America (9 sites) and South America (3 sites). One of the chronic hazards assessed was water scarcity (the ratio of total water withdrawals to total water renewable supply in a given areas). DSM's sites require fresh water for manufacturing, and use water for cooling, with limitations on water intake (physically or by authorities) could lead to reduced production capacity. The results of the assessment indicates that from the assessed chronic hazards water scarcity could have significant potential financial impact within the medium, i.e. 2030 time-frame. Three of the DSM high-impact sites are identified as being in already in a water scarce/stressed areas. These include our sites in Belgium, France and Peru. In these sites, the risk of water scarcity in all 3 assessed scenarios (RCP 2.6, RCP 4.5 and RCP 8.5) in the 2030 time-frame is stable with measures already taken to mitigate the risk. Three additional key sites (one in Netherlands, two in China) show significantly increased risk of water scarcity in both RCP 4.5 and RCP 8.5 scenarios by 2030.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

40000000

Potential financial impact figure – maximum (currency)

100000000

Explanation of financial impact figure

iii)The financial impact are indicative numbers based on the first high-level assessments. Potential financial loss due to water scarcity are based on the three additional key sites showing significantly increased risk of water scarcity in both RCP 4.5 and RCP 8.5 scenarios. The losses are calculated based on a potential production capacity reduction of between 10 and 25 percent due to the non-availability of water (either water is not available, or use is restricted by governments), resulting in an impact on contribution margin of between €40 and 100 million.

Cost of response to risk

30000000

Description of response and explanation of cost calculation

Water management is integral to our risk mitigation and environmental impact reduction strategies. We believe that water risks are local by nature. As such, we focus on local water risk assessments and thorough follow-up. Water risk assessments have been completed at 100% of our material water sites. For the major sites, in-depth water audits are conducted to tailor local management methods. These include improvements to reduce water consumption (such as cooling equipment to reduce water use), diversify sources of water, and close monitoring of the evolution of the local regulation and other users. To strengthen our water management efforts, a new corporate water management standard (aligned with the Alliance for Water Stewardship standard and the UNGC CEO Water Mandate) was launched in 2018. Cost to respond is site specific and the cost calculations are indicative only. Of the 6 at-risk major sites (three current and three potential), all have taken significant steps to reduce water consumption with further assessment ongoing. Based on the case in Pune (with similar measures at other sites) we know that water consumption reduction measures can be done cost effectively, and often with reduced energy costs and CO2 emissions. The water risk assessment performed for site in Pune (India) indicated that the site could experience water shortages due to external infrastructure limitations and regulatory requirements, which would be further exacerbated by drought. A water stream mapping identified several responses that would lead to improvements: (1) the installation of an Effluent Treatment Plant, Effluent Storage tank and a new Process Vacuum Pump on-site enabled the treatment and storage of effluent for reuse (2) a new cooling tower fan automation was installed to reduce evaporation losses (3) extensive education campaigns to instill a Zero Leakage culture Water consumption was reduced in 10 years (2009-2019), from above 5 m3/ton to significantly below 1 m3/ton, reducing potential long-term risks relating to water and climate change. We estimate the total cost of these measures at €5-10 million. For the purpose of this estimate, we have used the high-end number. The cost of the measures were economically feasible with a short pay back time and spanned across several years. For illustrative purposes, the cost of response is calculated by multiplying the high-end cost (€10 million) for 3 sites with emerging water scarcity risks (€30 million).

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Technology	Transitioning to lower emissions technology
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Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

DSM has done initial pilots of a transition risk assessment process using scenario analysis. The assessment was conducted for three future scenarios: 1) IPCC 'RCP 2.6' and SSP1 (comparable to a "global 1.5 degrees warming by 2100" scenario) 2) IPCC 'RCP 4.5', SSP1 and SSP2 (comparable to a "global 2 degrees warming by 2100" scenario and to WRI Optimistic Scenario) 3) PCC 'RCP 8.5' and SSP3 (comparable to a "global 4 degrees warming by 2100" scenario, i.e. business as usual scenario and WRI Pessimistic Scenario) The primary focus of the risk assessment was the 2-degrees-warming scenario as it provided the best available data. The pilot focused on our business unit, DSM Protective Materials, and covered the value chain including suppliers through to end markets. Three time horizons were considered – 2025/2030, 2040 and 2050. The end-market in scope for the risk assessment is the marine and industrial fibers market. This example risk relates to the impact of the energy transition on applications in the offshore oil market. Our marine and industrial fibers products are applied as slings, anchor ropes and (permanent) mooring lines that are used for exploration and to moor stations and platforms. A reduced demand for oil and gas could negatively impact our sales of Dyneema® to this end market.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

2000000

Potential financial impact figure – maximum (currency)

25000000

Explanation of financial impact figure

The potential financial impact figures are based on the negative impact on sales volumes due to a switch to fossil-fuel alternatives (renewable energy and bio-based solutions) in this specific end-market. The minimum financial impact figured is based on the 2 degree

scenario at the short term horizon, and is calculated on minor impacts relating to new projects. The maximum financial impact figure is based on the 1.5 degree scenario at the long term horizon, and is based on a significant slowdown on new projects and reductions for the existing business. No impact was foreseen in the 'business as usual' scenario at 4 degrees.

Cost of response to risk

0

Description of response and explanation of cost calculation

Mitigating controls are already underway, focused on diversification of the end-markets. The cost of the response to the risk is estimated at €0, as the people required for this diversification are already in place, and so no additional direct costs to respond to this risk are expected. An example of how we are diversifying is developing solutions in the energy transition space, for instance, in deep water wind farms requiring high performance mooring possibilities, as well as applications in tidal, offshore solar and airborne wind energy. Based on our scenario analysis, this opportunity will be highest in the short- to mid-term horizon in the 1.5 degree scenario where the transition to renewable electricity is fastest. The opportunity, similar to the risk as described above, is not present in the 'business as usual' scenario. The diversification opportunity is expected to offset the above risk. Our new bio-based Dyneema® grade is a differentiator in this market. By introducing bio-based feedstock, the use of fossil-based resources can be reduced. For every metric ton of bio-based Dyneema® that is produced, DSM is saving approximately 5 metric tons of CO2 equivalent compared to fossil-based Dyneema®. Additionally, bio-based Dyneema® fiber has the exact same performance and specifications as conventional Dyneema®, yet it has a carbon footprint that is 90% lower than generic HMPE. The low-carbon bio-based Dyneema® is already well received by customers, with some key customers already announcing that they will switch their entire portfolio of products made with Dyneema® to bio-based Dyneema® fibers. Specifically within the energy transition market, the lower carbon footprint is an important factor to drive uptake.

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?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

DSM is increasingly looking for technologies to reduce its carbon footprint. It is our ambition to contribute to this by developing bio-based materials that can replace fossil-based feedstock. In 2020, DSM launched several new low carbon bio-based materials, as part of our circular & bio-based economy programme. Bio-based materials, as replacements for fossil-based feedstock, substantially lower the CO2 footprint of the chemical industry as a whole. The main challenge is that the overall performance of the bio-based materials must be at least as good as that of the current products and not to compromise on safety or performance. In 2020, DSM Protective Materials introduced bio-based feedstock into the production of Dyneema®, an ultra-high molecular weight polyethylene (UHMwPE), otherwise known as the world's strongest fiber. Dyneema invites multiple uses, from ropes and lines to lightweight high-performance fabrics for outdoor and sports use, such as cycling jerseys, tents, and backpacks. Due to their extreme robustness, garments made with Dyneema last longer than comparable traditional products, lengthening the lifetime cycle. By introducing bio-based feedstock, the use of fossil-based resources can be reduced. For every metric ton of bio-based Dyneema that is produced, DSM is saving approximately 5 metric tons of CO2 equivalent compared to fossil-based Dyneema. Additionally, bio-based Dyneema fiber has the exact same performance and specifications as conventional Dyneema, yet it has a carbon footprint that is 90% lower than generic HMPE. The low-carbon bio-based Dyneema was well received by customers, with some key customers already announcing their intention to switch their entire portfolio of products made with Dyneema to bio-based Dyneema fibres. The ambition of DSM Protective Materials is that by 2030, at least 60% of the Dyneema feedstock will be sourced from bio-based raw materials. In this way, DSM is taking the next major step in its sustainability journey, introducing the first ever bio-based ultra-high molecular weight polyethylene fiber and further enabling its customers to reduce their carbon footprint. More information is available through •

https://www.dsm.com/dyneema/en_GB/sustainability/bio-based-dyneema-fiber.html • Gleistein - Gleistein switches its entire portfolio of products made with Dyneema® to bio-based Dyneema® fibres

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

120000000

Potential financial impact figure – maximum (currency)

300000000

Explanation of financial impact figure

DSM Protective Materials has made a commitment to source 60% bio-based raw materials by 2030. The 60% bio-based raw materials allow DSM to switch all conventional Dyneema fiber to bio-based Dyneema fiber. Dyneema fiber represents around 90%-95% of DSM Protective Materials' sales, which totaled €301 million in 2020. DSM aims for a mid-single-digit percentage annual increase in organic growth, bringing the total DSM Protective Materials sales to a range from € 460 million to €630 million by 2030. Of this sales range for 2030, between 90%-95% would be from bio-based Dyneema® fiber, bringing the total potential financial impact to € 420 million (90% bio-based fiber sales at the low end of the sales growth scenario) to € 600 million (95% bio-based fiber sales at the high end of the sales growth scenario) for 2030. The additional revenue is € 120 million to € 300 million. More detailed statements on the exact financial implications cannot be made for business sensitive reasons.

Cost to realize opportunity

1350000

Strategy to realize opportunity and explanation of cost calculation

Through our innovations, we address pressing global issues such as climate change and make a major contribution to the circular and bio-based economy and improved health and well-being. Our expertise in materials science, combined with our close connection to customers allow us to use resources more efficiently and replace fossil-based materials with more renewable ones. We have formed strategic partnerships and coalitions that support and accelerate customer-driven sustainable innovation opportunities, for example, value-chain partnerships to enhance the transition toward a more low carbon and bio-based economy. In order to deliver on this opportunity, in 2020, DSM formed a strategic partnership with Neste, the world's leading producer of renewable diesel and sustainable aviation fuel and a forerunner as provider of renewable and circular solutions for the chemical industry, to enable the production of high

performance polymers. DSM also formed a partnership with our supplier SABIC to enable the transition toward bio-based Dyneema. These partnerships enable DSM and its customers to reduce the carbon footprint of their own products whilst supporting the industry to transition to a circular economy. By collaborating throughout the value chain, DSM is addressing the increasing consumer, societal and regulatory demand for more low carbon and circular solutions. An example of an opportunity identified for bio-based Dyneema is in the energy transition space, for instance, in deep water wind farms requiring high performance mooring possibilities where a bio-based product is considered a differentiating factor. Based on our scenario analysis, this opportunity will be highest in the short- to mid-term horizon in the 1.5 degree scenario where the transition to renewable electricity is fastest. The opportunity, similar to the risk as described above, is not present in the 'business as usual' scenario. The cost to realize the opportunity has been estimated to be 1,35 million EUR over 9 years (€150,000 per year). This includes the partnership costs, FTEs related to the supplier relationships and the setup and scale up of the value chain partnerships required to realize the transition, over the 9 year period to 2030.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

DSM's total energy consumption in 2020 was 5,830,000 MWh. Investments into improved efficiency will significantly contribute to reducing operating costs over the long-term in both reduced energy costs and reducing liabilities for our sites subjected to carbon pricing schemes. DSM has a dedicated Energy Efficiency program to help reduce emissions and energy costs and our Target 30 program umbrella ensuring the delivery against our Science Based Emissions reduction targets. The program has a dedicated annual investment budget to support those projects that have a longer payback period than typical business projects. In 2020, there were over 40 initiatives under the capital expenditures program either implemented or ongoing resulting in CO2 savings. Some new instalments could in the future also benefit from regional investment support, accelerating the implementation and leading up to operational cost savings in addition to GHG reductions.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

16000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The financial impact figure represents approximate annual saving of 15-16 million EUR with 50 million EUR investment over the course of 3 years (2019-2021). There are several ongoing initiatives and investments focusing on Energy Efficiency at DSM. The financial impact estimate represents those DSM projects that are centrally funded under the Energy Efficiency Program running until 2030. In 2020, there were over 40 either implemented or ongoing projects resulting at CO2 savings through increase efficiency under the capital expenditures program. The current improvement projects have high overall Internal Rate of Return (for most estimated at approximately 30%), calculated from the 2019 investment figures, with an average payback time of less than 3 years (ranging from less than one year to more than 10 years). Detailed statements on the exact financial implications cannot be made for business sensitive reasons. There are several ongoing initiatives and investments focusing on Energy Efficiency at DSM. The financial impact estimate represents those DSM projects that are centrally funded under the Energy Efficiency Program running until 2030.

Cost to realize opportunity

50000000

Strategy to realize opportunity and explanation of cost calculation

The 50 million EUR is the CAPEX budget allocated to DSM's energy efficiency program over the period 2019-2021 to help reduce emissions and energy costs. The dedicated annual investment budget supports those projects that have a longer payback period than typical business projects, and includes projects on process optimization, machine replacement and heat recovery as well as HVAC and solar installations. The Energy Efficiency Investment project funds approximately 20-30 projects annually. The focus is on finding new

opportunities with a high financial benefit, targeting at a 20 million EUR/yr CAPEX. For example, in 2021, this program received almost 80 submissions, of which 50 projects meet the investment criteria or warrant further investigation. If all of these projects are successfully implemented, the total required CAPEX in 2022 amounts to approx. 30 million EUR. An example of a project in the Program is the installation of a new drying process in Kingstree, USA. With the increasing demand for products produced at this site, a more efficient and lower-emissions drying process was required to replace the natural gas powered steam-based process. Installed in late 2019, and becoming operational in early 2020, the new screw press reduces emissions, reduces waste and is safer to operate. Powered by renewable electricity, the new press reduces site emissions by approximately 2,200 tons CO₂e , with associated savings of approximately USD130,000. It also provides additional savings through the reduction in waste, and waste treatment requirements. DSM key sites (18) have also developed detailed emissions reductions roadmaps for short, medium and long-term, including assessments and proposals of similar Energy Efficiency projects as already conducted supporting the realization of DSM's Science Based Targets - 30% Scope 1 and 2 emissions by 2030 in absolute terms.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

DSM Animal Nutrition & Health (ANH) is a business representing approximately 3,025 million of net sales in 2020. This business provides nutritional solutions for sustainable animal farming through precision nutrition and feed. The ANH business is strategically focused around 6 sustainability platforms that are aligned with the UN's Sustainable Development Goals 2, 3, 12, 13 (Climate Action), and 14, that address the major challenges facing the animal farming industry, including reducing emissions from livestock. Animal farming accounts for an estimated 14.5% of all human-derived GHG emissions globally which is set to rise as demand for animal-based foods increases. These emissions relate to animal feed, followed by methane naturally produced by ruminants, and manure. DSM has multiple nutritional solutions that target livestock emissions, such as Bovaer® (reduces methane emissions from ruminants by at least

30%), and feed enzymes such as ProAct (improves protein feed utilization in poultry and reduces nitrogen emissions to the environment). Developments in biosciences and the broad adoption of digital solutions and data-based outcomes is becoming a rapidly emerging business area for ANH and is opening new opportunities for innovation-based growth via our Precision & Personalization business model. We expect increased revenues from developing these types of low emissions products, as well as from the development of Sustell™, our new intelligent sustainability service that drives improvements in the environmental footprint & profitability of animal protein production by being end-market focused and providing case-specific and precision solutions for our customers (animal farming companies and the associated value chain) so that they can make tangible improvements down to the individual farm level.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

100000000

Potential financial impact figure – maximum (currency)

200000000

Explanation of financial impact figure

DSM's Nutrition & Health business is built on a 'global products, local solutions' business model, which focuses on our global products and innovation portfolio applied to the local customers' farming conditions coupled with our solution-selling capabilities that are end-market-focused according to the particular segments. In addition, developments in biosciences and the broad adoption of digital solutions and data-based outcomes is becoming a rapidly emerging business area for ANH and is opening new opportunities for innovation-based growth via our Precision & Personalization business model. The launch of Sustell™ to drive improvements in the environmental footprint and profitability of animal protein production at the farm-level (using actual farm and feed data) is a key driver and enabler towards this Precision & Personalization business model and DSM's organic growth ambitions of mid-single-digit sales growth, as well as the six ANH sustainability business drivers (one of which is to Reduce Emissions from Livestock). We have calculated the estimated financial impact range by positioning Sustell™ as a new service that is an integral part of ANH's growth strategy,

particularly with respect to Precision Nutrition and the need for greater sustainability. Thus, as one of the key enablers for DSM to achieve its strategic organic growth ambitions, we have calculated the above estimated financial impact range based on the assumption of DSM achieving its mid-single-digit organic growth ambitions, and our 2020 annual sales in ANH (3,025 million of net sales in 2020).

Cost to realize opportunity

10000000

Strategy to realize opportunity and explanation of cost calculation

Developed in 2020 & rolled out in 2021, Sustell™ is an intelligent sustainability service to drive improvements in the environmental footprint & profitability of animal protein production, and is a strategic opportunity for DSM's Nutrition & Health business' 'global products, local solutions' business model. Developed in partnership with Blonk, an independent expert in Life Cycle Analysis (LCA) & sustainability in food & agriculture, it is connected to the Blonk APS-footprint tool, together with an 'Expert Center' made up of DSM & Blonk experts in LCA, animal nutrition and sustainability. We partner with farmers, assessing the baseline environmental footprint of their animal production using actual farm and feed data rather than industry averages and proxy data sets, & developing case-specific intervention scenarios to make measurable sustainability improvements. Sustell analyses 19 environmental categories including climate change, & corresponds to impact assessment method Environmental Footprint 2.0. providing global recognition for the results. Animal farming companies and the associated value chain have, for the 1st time a solution to measure, compare & improve the sustainability of animal protein production through accurate measurement down to the individual farm, and to then make tangible improvements to the impact categories measured. Some cases where Sustell has been used to address our customers' (animal protein companies) varied & highly nuanced questions, thus adding value for the customer and DSM: - customers who have been pushed by ESG investors and food retailers to become more sustainable & report their progress accordingly; - customers requiring sustainability plans & footprinting to secure financing, as well as to add value to their brands; - customers requiring footprint documentation to unlock national government carbon credits or tax incentives for more sustainable animal production. Cost to realize opportunity mainly consists of (1) internal resources, e.g., time from a dedicated (FTE) senior position on sustainability in ANH & support from other functions, e.g., DSM experts for the 'Expert Center' (2) partnering with 3rd party experts to build the IT system connected to the Blonk APS-footprint tool, (3) partnering with Blonk to further develop the APS-footprint tool, (4) Marketing : creating tangible tools & marketing support to engage with customers, (5) Cost associated with training & educating employees (sales & marketing).

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	DSM does not intend to present a low-carbon transition plan as a separate resolution item to the AGM for two key reasons. 1) We have an integral approach toward Triple P, as for us these go hand in hand - Our People and Planet goals are an integral part of our business strategy, contributing to the Profit dimension. 2) We presented our business strategy at the AGM, which includes our emissions reduction targets and our roadmaps, as well as our remuneration policy, which has a clear link to emissions reduction (greenhouse gas reduction, energy efficiency and renewable electricity). Therefore, we don't believe it would be fitting for DSM to single out climate for the AGM. Sustainability is part of our strategy, it contributes to the success of that strategy and is at the core of how we've executed that strategy, and as such, it is fully reflected in the annual results that shareholders get to vote on.

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
2DS RCP 2.6 RCP 4.5 RCP 8.5 IEA B2DS	DSM uses scenarios to assess how the physical operating environment could be impacted by climate change, and to assess the impact from the transition to a net zero world on our operating sites, supply chain and end markets. We use the IEA scenarios (2DS, B2DS) to assess our proportional contribution of emissions reductions needed to meet the Paris Agreement, i.e. our Science Based Targets. Below is a case study on scenarios in a physical risk assessment. i)The scenarios, inputs, assumptions (such as time-horizons) and analytical methods used to substantiate each scenario were selected by an external consultant and approved in an internal cross-functional workshop. The inputs included WRI Aqeduct, World Bank's Climate Knowledge Portal, IBTrACS (NOAA), IPCC scenarios (RCP 2.6, 4.6, and 8.5),

Climate-related scenarios and models applied	Details
Nationally determined contributions (NDCs)	<p>Fire_cci (Modis), and Flood Map (FM Global). The hazards assessed were: Extreme heat: temperature levels that might disturb the industrial process or cause health problems for DSM employees Flooding: overflowing or accumulation of water over areas that are not normally submerged Cyclones: strong cyclonic-scale disturbance that originates over tropical oceans Wildfires: uncontrolled fire that burns in wildland vegetation Water scarcity: the ratio of total water withdrawals to total water renewable supply in a given area The potential financial loss for a physical hazard in a future scenario is calculated using the projected risk level in that scenario and the number of days of production loss for the risk level for that hazard. ii) Time horizons 2030 & 2050 were considered aligning with time horizons for transition risk. 2030 can already practically support (medium term) business decisions, while in 2050 severe impacts become more visible; The climate science stipulates that cumulative emissions by 2050 indicate the likelihood of meeting 1.5-2C temperature increase target by 2100. iii) & iv) In the first stage of the physical risk assessment, the focus was on the top 30 main operating sites and one key vendor. Selection was based on the total Contribution Margin lost for one day production loss. For other assessments (e.g. SBT's), full value chain is considered. Based on the physical risk assessment, the main (financial) risks are wildfires and water scarcity. The financial impact assessment (financial loss) is defined above. For water scarcity, three sites (Belgium, France and Peru) were assessed as already being in water stressed areas, with a stable risk level in the 2030 time horizon. Mitigating measures are already in place. Three additional sites (Netherlands and two in China) indicate an increased level of water stress by 2030 under RCP 4.5 and 8.5. Potential total mitigating costs (existing, planned and future needs) are based on comparable sites' water-stress investments. v)The data from scenarios is only a starting point; the results need to be enriched with available local- and site-specific data in collaboration with DSM Insurances on insights into specific mitigations already in place. That will give us insights into sites that are potentially exposed to material risks. Depending on the specific situation further deep dives might be needed to assess the risk in detail and to identify mitigating solutions. vi) An example of how scenario analysis has directly influenced our strategy relates to the impact of potential increases in carbon pricing. The potential impact is evaluated using scenario analysis. The impact could increase in materiality depending on time horizons, future emissions and future regulatory developments. This has led us to implement internal carbon pricing for investment evaluations. The internal carbon price was instrumental in the business decision to build a biomass cogeneration plant in Sisslen, contributing ~50 kton emissions reduction annually. Recently we increased our ICP from €50 to €100 mt/CO2e as some scenarios showed that such level is getting more realistic</p>

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	<p>i) Sustainability is DSM's core value as well as a business driver and enables the company to provide higher-margin products and solutions. We enable our customers in their sustainability endeavors with our innovative solutions, and also see continued growth of demand for solutions that address sustainability challenges. We measure and develop these products through our Brighter Living Solutions program, which are products and services that have specific environmental or social benefits compared to mainstream reference solutions. These solutions now make up 63% of DSM's total sales and around 90% of the products in DSM's innovation pipeline are considered BLS. Our innovation pipeline is focused on three strategic domains: Nutrition & Health, Climate & Energy and Resources & Circularity, and includes for example our Bovaer®, Veramaris® and Akulon® RePurposed. These solutions are either already in the markets, or expected to be introduced to the market in the timeframe toward 2025. These enable customers to reduce their GHG emissions, are circular and/or recycled-based products. The climate related benefits of DSM products are either in the form of lower carbon footprint, or supporting our customers directly in climate mitigation or adaptation activities within their operations or further in the value in use phase ('Avoided emissions')</p> <p>ii) Case study of a major, sustainability-driven, innovation projects we have advanced well is Project Clean Cow (under the product name Bovaer®): Bovaer® is a feed additive for cows (and other ruminants, such as sheep, goats, and deer). It is the most extensively studied and scientifically proven solution to the challenge of burped methane from ruminants to date. This long-term opportunity was identified approximately 10 years ago, and since then, 35 on-farm beef and dairy trials have been conducted across the globe and in the context of various feeding systems, with the expectation to enter broader market in 2021-2022. The trials show that a reduction in enteric methane of approximately 30% can be consistently achieved. Some trials achieved a reduction of as much as 80%. Methane is extremely potent GHG responsible of a significant proportion of emissions from agriculture.</p>
Supply chain and/or value chain	Yes	<p>Supply-chain-related climate risks influence both availability of raw materials (due to flooding, extreme temperatures) and logistics routes. For example, DSM currently uses limited amounts of at-risk bio-based feedstocks. With future efforts to substantially increase the proportion of bio-based products in the portfolio, the sustainability of value chains and availability of raw materials is under review. DSM's Sustainable Procurement Program screens for potential risks in this area through assessments and audits, and value-chain mapping. Since 2015, DSM is a member of Together for Sustainability (TfS), which allows us to screen and address sustainability performance and risks for a high number of our suppliers. Assessments are conducted at supplier level through EcoVadis. DSM expects its suppliers to have a minimum score ("Engaged" score) on their EcoVadis assessment - if they receive a lower score they will require to go through a re-assessment or audit. In 2020, DSM assessed 351 suppliers of which 318 were re-assessments. Of the re-assessed suppliers, 60% received an improved sustainability score. In addition, DSM further engages with its strategic suppliers through the CO2REDUCE program which aims to generate deeper insights into the emission performance of</p>

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
		<p>our supplier base, identify the GHG reduction options at key suppliers, and support the collaboration needed to enable these initiatives. This entails a deeper understanding of the relevant supply chains and participants more upstream as well as data exchange with suppliers on specifics. Value-chain mapping will be conducted based on our current and potential exposure to at-risk supply chains and feedstocks (as a contributor to, or impacted by climate change). For our bio-based feedstocks, DSM applies value chain screening of raw materials to palm oil and soy derivatives, sugar, fish oils and other at-risk primary raw materials. This includes mapping back to the country of origin of the primary feedstock to understand potential risks. The screening of the current scope is expected to be completed by end 2021. With DSM's circular economy ambitions, including an increase in bio-based raw materials, our exposure to bio-based supply chains may increase in the coming years.</p>
Investment in R&D	Yes	<p>i) We leverage our unique scientific technology capabilities to drive transition through R&D from two aspects: 1) developing innovative sustainable solutions in our three interlinked growth domains. The climate-related benefits of our solutions take the form of lower carbon footprint, supporting our customers with climate mitigation or adaptation activities, or use-phase reductions ('Avoided emissions'). In 2020, innovation sales amounted to 20% of sales, in line with our aspiration of around 20%. We invest ~5% (4.7% in 2020) of sales in R&D to develop differentiating science and technology (with drivers including Climate Mitigation and Climate Adaptation potential). Furthermore, a strong and refocused innovation pipeline was created to enhance long-term growth including, for example, Bovaer®, Veramaris®, and Akulon® RePurposed. 2) our R&D is an integrated part of our GHG reduction roadmap process, both to meet our medium-term Science Based Targets, as well as meeting NetZero emissions by 2050. In particular, the long-term technology transition involves strong R&D efforts, as some of the processes and feedstocks will still need significant technological breakthroughs. Scaling up some of these innovations will also need significant investment and collaboration. ii) An example of a major collaborative R&D investment is the 'Collaborative Innovation for Low-Carbon Emitting Technologies' (LCET) initiative. It is the first CEO-led chemical industry coalition for the transformation toward a net-zero and circular future. LCET aims to accelerate the development and upscaling of low-carbon emitting technologies for chemical production and related value chains, with support from policy and financing enablers. We contribute man hours and funding (approx. €50k p.a.) to the LCET initiative in two key activities: 1) Drafting a proposal for the next phase of the initiative for mid-2021 onward. This proposal was approved by the Steering Board and a transition stage has started toward formalization into a project development company for R&D and piloting projects. 2) Executing a study within the LCET biomass cluster on two flagship biomass processes, via ethanol to ethylene and derivatives, and via syngas to methanol and derivatives. There is significant greenhouse gas reduction potential, however financial solutions and policies are needed to make it economically favourable.</p>

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Operations	Yes	<p>i) As described in question 2.2a DSM has identified risks that could have an impact on our direct operations, such as increased pricing of GHG emissions and other increased operating costs due to changes in local legislation. Most visible strategic response is DSM's commitment and early overperformance towards delivering our Science Based Targets, part of DSM's core strategy. Our SBT comprise a greenhouse gas (GHG) scope 1 + 2 emission absolute reduction of 30% (revised in 2021 to 50%) and a GHG scope 3 intensity reduction of 28% by 2030 versus our 2016 baseline. Each year, DSM implements and commits to various investments projects with major positive impacts on DSM's GHG emissions in the short term and in the long term. Many of which are related to renewable energy and energy efficiency, but also to innovation and new business ventures. GHG emissions are addressed in all new business cases, and the use of Internal Carbon Pricing was instrumental to integrate GHG emissions into long-term investment decisions. DSM's Internal Carbon Price (ICP) of 50€/ton CO2e (as of 2021, 100€/ton) is included in the the NPV of several projects. ii)Case study example: Replacing fossil-fuel-based energy production on site with purchased renewable energy results in significant emissions reductions -The biomass project in Switzerland completed its first full year of operations in 2020. This plant was needed to replace the site's former natural gas-fired cogeneration plant. The business case for a new co-gen plant was presented including and excluding the internal carbon price. The application of the internal carbon price in the business case for this was instrumental in the decision to choose for a biomass heat and power plant. The plant delivered approximately 50 kt CO2eq reduction in 2020.</p>

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	Capital expenditures Access to capital	<p>Capital expenditures: Since 2017, we have installed a dedicated, earmarked annual investment budget from capital investments to support those emissions reduction projects that have a longer payback period than typical business projects. DSM's Science Based GHG target for Scope 1 and 2 emission is an absolute reduction of 30% (increased to 50% in 2021) of GHG emissions in 2030. To deliver on this target a program is put in place to identify, prioritize and manage GHG reduction projects. A long-term forecast is made of the total investment</p>

Financial planning elements that have been influenced	Description of influence
	<p>amount needed to realize the GHG reduction projects. This forecast is continuously being updated using new information becoming available and this forecast is included in the multi-year cash flow planning of the company. Furthermore, in 2016 DSM introduced an internal carbon price (ICP) on all large investments. It serves as a useful model for redirecting and scaling up investments towards low-carbon technologies and driving operational efficiencies, especially in markets with a carbon price or in regions where a carbon price is expected to emerge. At DSM, using an internal carbon price incorporates the cost of GHG emissions decision-making processes requiring significant capital expenditure; in the business case of the project this carbon penalty has to be included as a cash outflow. In 2020, €50 per ton CO₂ equivalents was applied (increased to €100 in 2021). The effectiveness of application and price level will be periodically reviewed and updated. We apply the ICP in all key investments, acquisitions and in our internal management reporting and we require all business growth projects to be carbon neutral, or else compensated for in the same business. In 2020, there were approx. 25 energy efficiency projects under the capital expenditures program. An example of where the internal carbon price has had an effect include the priority setting of energy efficiency improvement projects vs other projects. In the selection and priority setting of projects to be funded out of this special budget business cases are used, which include positive cash flows from internal carbon pricing of avoided emissions. Access to capital: DSM has concluded a €1 billion Revolving Credit Facility that links the interest rate of this Facility to DSM's Greenhouse Gas (GHG) emission reduction. The deal was concluded with a syndicate of 15 banks and replaces two existing Revolving Credit Facilities of in total €1 billion, maturing in 2018 and 2020. To underline its commitment to tackling climate change, DSM has linked the interest rate of this Facility to its performance on the reduction of GHG emissions, consisting of three performance improvement elements: cumulative GHG efficiency improvement, improving the Energy Efficiency Index (EEI) and increasing the electricity sourced from renewable resources. The €1 billion Revolving Credit Facility underpins DSM's strong liquidity profile, and is intended for general business purposes. The Facility has a maturity of five years which may be extended by a further two years.</p>

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

At DSM sustainability has been a core value of the company for years. With our long-term strategy, we are continuing our evolution as a purpose-led, science-based company operating in the fields of Nutrition, Health and Sustainable Living. Our strong growth capacity is anchored in developing customer-centric, innovative solutions addressing Nutrition & Health, Climate & Energy, and Resources & Circularity. The domains are arranged around DSM's key competences, addressing global megatrends and the UN SDGs, which together provide growth opportunities and represent where DSM can have valuable contribution through our core business. The strategy, structured around these themes, drives our performance and sets the scope for our growth, financial returns and the evolution of our portfolio. In addition to directly working to address Climate Change and Energy transition, the purpose areas Nutrition & Health

and Resources & Circularity are also closely linked to Climate Change and mutually reinforcing. For example, DSM is uniquely positioned to support in the transformation of global food and agriculture system contributing to significant proportion of GHG emissions globally, as well as driving the shift to a more circular and bio-based economy. DSM is dedicated to securing the future availability of natural resources and unlocking more value from the limited resources that are available, which is essential for practically all roadmaps and scenarios for NetZero emissions economy. With our strategy, we pursue opportunities derived from these megatrends across our entire portfolio and on a global scale. We continue to work together with customers and other partners to create sustainable, science-based solutions that help tackle some of the world's biggest challenges. By doing so, we help achieve progress on the Sustainable Development Goals, especially SDG 2 , SDG 3, SDG 7, SDG 12, and SDG 13 (Climate Action).

Climate Change as a societal megatrend has been integrated to the corporate strategy already for over a decade, driving the shift of our business portfolio and innovation and changing our mindset towards long term value and “future-proofing our business”. The focus is again amplified through the strategy, further emphasizing that effectively tackling climate change is both a responsibility and a business opportunity. Our agenda to meet the strategy has been structured around three areas: -IMPROVE our own performance: including 1) reducing our carbon footprint through our ambitious, science-based emissions reduction targets aligned with the Paris Agreement, stimulated by an internal carbon price, and 2) ensuring our supply chains and assets are resilient against climate risks (i.e. working to adapt to Climate Change) -ENABLE the low-carbon economy through our portfolio; also aiming thrive in the multi-trillion dollar low-carbon economy emerging and helping our customers to reduce their emissions, we are identifying and seizing business & innovation opportunities and capturing value from our current low-carbon solutions (Brighter Living Solutions) -ADVOCATE urgent climate action and long-term policies, also creating markets in which our low-carbon products can thrive. By improving the impact of our own operations, enabling sustainable solutions for our customers and advocating sustainable business, we can grow faster and reduce our cost and risk profile. The elements and progress are actively reviewed by the wider Executive Committee several times a year. By improving the impact of our own operations, enabling sustainable solutions for our customers and advocating sustainable business, we can grow faster and reduce our cost and risk profile.

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

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

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2016

Covered emissions in base year (metric tons CO₂e)

1650000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2030

Targeted reduction from base year (%)

50

Covered emissions in target year (metric tons CO₂e) [auto-calculated]

825000

Covered emissions in reporting year (metric tons CO₂e)

1240000

% of target achieved [auto-calculated]

49.6969696969697

Target status in reporting year

Revised

Is this a science-based target?

Yes, and this target has been approved by the Science-Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain (including target coverage)

DSM's Scope 1 + 2 target is a 50% absolute reduction by 2030 versus 2016. In 2021, DSM increased its GHG emissions reductions target for scope 1+2 for 2030, moving from a target level of 30% to 50% absolute reduction by 2030 (versus 2016 baseline). The update brings DSM in line with the well-below 2°C trajectory, building on the good reduction progress so far. In 2020, baseline GHG emissions figure of 2016 (1.50 million tons CO₂eq) was increased to 1.65 million tons CO₂eq, due to the inclusion of eight acquired sites in our reporting scope for the period 2017–2020 and the impact of methodology changes. Three newly built sites were also added to the reporting scope, however as they were constructed after 2016, have no impact on the baseline correction. The absolute reduction in scope 1 + 2 GHG emissions was 25% compared to the corrected baseline of 2016. We estimate that of the 25% absolute reduction in scope 1 + 2 GHG emissions compared to baseline 2016, 18% is due to structural improvements. This is due to projects in our greenhouse gas reduction program, ranging from relatively easy-to-implement modifications in operations, such as improving the insulation around hot parts, to installing advanced energy metering systems, up to the installation of best available technologies (for example, heating and cooling equipment). The contribution to our GHG reductions due to the step-up in renewably sourced electricity that was made in Europe and North America in 2020, was offset by the current growth in non-renewably sourced electricity in China. This growth in China was due to the impact of acquisitions as well as organic growth in our China sites.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Other, please specify (The categories in scope for this Target are Purchased goods and services, Upstream transportation and distribution and Waste generated in operations. This covers 72% of our total scope 3 emissions)

Intensity metric

Metric tons CO₂e per metric ton of product

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

3.2

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2030

Targeted reduction from base year (%)

28

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

2.304

% change anticipated in absolute Scope 1+2 emissions

0

% change anticipated in absolute Scope 3 emissions

3.4

Intensity figure in reporting year (metric tons CO2e per unit of activity)

3.02

% of target achieved [auto-calculated]

20.0892857142857

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

DSM set our scope 3 Science Based Target in 2019, which is an intensity reduction target of 28% per unit of product in 2030 versus the base year of 2016. The categories in scope for this Target are Purchased goods and services, Upstream transportation and distribution and Waste generated in operations. A yearly recalculation of our 2016 scope 3 emissions was performed to increase accuracy based on the latest insights from suppliers and updates of the most relevant emission factors according to our defined standard. . Also baseline

adjustments have taken place due to acquisitions and divestments within DSM according to the baseline policy. This recalculation covers the categories in scope for the Target and will be used solely for reporting performance against the Science Based Target. In future years, further recalculations and adjustments of the baseline are expected and will be performed on a similar basis.

C4.2

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

Target(s) to increase low-carbon energy consumption or production

Net-zero target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2018

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage

Target denominator (intensity targets only)

<Not Applicable>

Base year

2015

Figure or percentage in base year

0

Target year

2030

Figure or percentage in target year

75

Figure or percentage in reporting year

60

% of target achieved [auto-calculated]

80

Target status in reporting year

Underway

Is this target part of an emissions target?

yes, 4.1a. One of the ways we reduce our own greenhouse-gas emissions is by sourcing more electricity from renewable resources

Is this target part of an overarching initiative?

RE100

Please explain (including target coverage)

Our renewable electricity target - 75% of purchased electricity to be sourced from renewables by 2030 - supports the scope 1 + 2 component of our Science Based Targets. This target is an update of our previous renewable electricity target of 50% by 2025 set in 2015, which we achieved in 2019.

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

Int1

Target year for achieving net zero

2050

Is this a science-based target?

Yes, but we have not committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain (including target coverage)

We were one of the first companies to align our efforts with the latest science as presented in the IPCC Special Report 'Global Warming of 1.5°C' by setting a long-term pathway to reach net-zero GHG emissions across our operations and value chains (scope 1, 2 and 3) by 2050. Our Science Based Targets are our foundation to achieve this goal, supported by our ambitions on renewable electricity and energy efficiency, and working intensively with our key suppliers through our CO2REDUCE program. Throughout 2020 and continuing into 2021, we are working with long-term innovation roadmaps to map pathways toward net-zero emissions in the coming decades.

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	50	
To be implemented*	27	19200
Implementation commenced*	15	11300
Implemented*	50	23400

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Not to be implemented	13	

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement
-------------------------------------------	-------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

9800

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

3900000

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

1150000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

This is a group of 22 machine upgrade improvement projects that were carried out, with a total investment of 11.5 million euros. Payback period varies from around one year to around eight years, with an average payback of approximately four years.

Initiative category & Initiative type

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--------------------------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

3700

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

470000

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

1100000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes | Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

5600

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

780000

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

2600000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

This is a group of 13 other process optimization projects that have a payback period of less than one year to more than 10 years. Total investment of approximately 2.6 million euros.

Initiative category & Initiative type

Low-carbon energy generation | Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

400

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

40000

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

210000

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes | Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

3700

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

640000

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

2060000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

This is a group of 5 Waste heat recovery projects that were carried out, with a total investment of just over 2 million euros. The payback period of the projects is around 2.5 years.

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	DSM has allocated dedicated investment budget for energy savings and GHG reduction projects.
Internal price on carbon	DSM has introduced a mandatory internal carbon price of 50 €/t (in 2021, the price was raised to €100) that is applied in the financial evaluation of large investments and energy improvement projects and is internally reported in the P&L of our businesses. Starting in 2019, business growth projects must either be GHG-neutral, or else be compensated for.
Internal incentives/recognition programs	Throughout the DSM organisation incentives given when targets on DSM's climate change strategy are met. The CEO/Managing Board/Executive Committee have long term GHG emission reduction targets and energy efficiency improvement (EEI) targets. The incentivized performance indicators for climate change issues are published in the Integrated Annual Report 2020 (https://annualreport.dsm.com/ar2020/report-by-the-supervisory-board/remuneration-report-2020/remuneration-of-the-managing-board/total-remuneration-2020.html) All DSM executives have a climate change target (i.e. Energy & GHG efficiency improvement) as part of their annual bonus scheme. Personal objectives (which determine bonus and/or merit increase) linked to achieving company climate change targets. DSM has an 2 internal awards were emission reduction is part of the selection criteria: DSM SHE

Method	Comment
	Award and DSM SHE Recognition Award. Those awards can be won by all employees of DSM (production sites as well as offices and labs).
Dedicated budget for other emissions reduction activities	DSM has allocated dedicated investment budget for other environmental projects like VOC reduction. Dedicated resources (significant OPEX) for GHG reduction program.
Employee engagement	Throughout DSM employee engagement is stimulated to contribute to DSM's climate change objectives. For many years in a row DSM has organized Earth Day at over 100 locations worldwide to engage the workforce further. In many continuous improvement events, driven by blue collar workers, energy reduction is addressed and improved.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Company-wide

Description of product/Group of products

DSM develops and produces a wide range of low-carbon and avoided emissions products. Our low carbon products are determined by their Life Cycle Assessment (LCA). Those products where the environmental benefit is realized during their production phase are classified as low carbon products, and our low carbon products are those with lower carbon footprints in their cradle-to-gate life-cycle than the mainstream competing solution. For example almost all our Vitamins are produced using processes that have a higher yield and lower energy consumption than the competition (based on LCAs). Note: some products are both low-carbon and avoided emissions products. Avoided emissions products are solutions that offer superior performance with a lower environmental / carbon-footprint, as assessed with LCA, compared to competing mainstream solutions that fulfill the same function. DSM has numerous products across all BGs that contribute to avoided emissions. For example, DSM Engineering Plastics supplies products for food packaging films requiring effective oxygen barrier properties and high puncture resistance. These films play an important role in reducing food waste by protecting food during transport, retail and consumer use, and extending shelf life. Reducing food waste diminishes the burden on the food

production system, leading to significant avoided emissions. Products sold in this segment in 2019 contributed to an estimated avoided emission of 27,500 kt CO₂eq. As another example, our powder coating resins can be used to replace solvent-borne coatings in many applications, allowing faster and more efficient curing, at lower temperatures, with less waste. powder coatings also remove the need for solvents, leading to further reductions in GHG and other emissions. In 2019, sales of powder coatings avoided GHG emissions of approximately 520 kt CO₂eq.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

% revenue from low carbon product(s) in the reporting year

63

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

Those products where the benefit is realized during their production phase are classified as low carbon products. Products where the benefits are realized in the application or use phase and as such contribute to avoided emissions within the value chain are classified as avoided emissions. The majority of our Brighter Living Solutions are classified as low carbon products or avoided emissions products, of which a portion have both environmental and social benefits. Currently, DSM does not report Brighter Living Solutions with environment and social benefits separately.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

1065800

Comment

In 2020, the 2016 baseline was updated due to the inclusion of eight acquired sites in our reporting scope for the period 2017–2020 and the impact of methodology changes. Three newly built sites were also added to the reporting scope, however as they were constructed after 2016, have no impact on the baseline correction. 2016 Baseline as reported in 2018: 1,061,800

Scope 2 (location-based)**Base year start**

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

601000

Comment

Our Science-Based Targets are based on our market-based Scope 2 baseline (previous baseline was 2008). This location-based figure is only provided for comparative purposes. In 2019, the 2016 baseline was updated due to the inclusion of eight acquired sites in our reporting scope for the period 2017–2020 and the impact of methodology changes. Three newly built sites were also added to the reporting scope, however as they were constructed after 2016, have no impact on the baseline correction. 2016 Baseline: 521,000

Scope 2 (market-based)**Base year start**

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

584000

Comment

In 2019, the 2016 baseline was updated due to the inclusion of eight acquired sites in our reporting scope for the period 2017–2020 and the impact of methodology changes. Three newly built sites were also added to the reporting scope, however as they were constructed after 2016, have no impact on the baseline correction. 2016 Baseline as reported in 2018: 504,000

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

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)

611800

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

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

DSM has reported Scope 2 market-based emissions since 2016. Our Science-Based Targets are calculated against our market-based scope 1 + 2 emissions.

C6.3

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

Reporting year

Scope 2, location-based

815000

Scope 2, market-based (if applicable)

621900

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

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?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

CO2 emission related to recent acquisitions

Relevance of Scope 1 emissions from this source

Emissions excluded due to recent acquisition

Relevance of location-based Scope 2 emissions from this source

Emissions excluded due to recent acquisition

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions excluded due to recent acquisition

Explain why this source is excluded

Newly acquired companies acquired in the first half of a given year ('year x') are included in the reporting scope of the year after acquisition ('year x+1'). Acquisitions in the second half of a given year ('year y') are included in the reporting scope of the year following the first full year after acquisition ('year y + 2'). This period is used to align to and implement DSM's reporting procedures. This is part of the non-financial reporting policy of DSM as disclosed in the Integrated Annual Report. This includes the previously announced acquisitions of Royal CSK (December 2019) and Glycom (April 2020), expected to be in the reporting scope as of 2021, and Erber Group (October 2020), expected to be in the reporting scope as of 2022.

Source

CO2 emissions from R&D and administrative buildings

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

DSM stand-alone offices and R&D units are excluded from the reporting scope as their emissions are not relevant. If DSM offices or R&D units are part of the reporting unit, where commercial production occurs, then they are included.

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

Metric tonnes CO₂e

9752000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as

the WBCSD Chemical Guidelines). Spend and purchased volumes were obtained from DSM's ERP systems. Most of the Direct spend emission factors are based on industry average databases such as Ecolinvent or PlasticsEurope, or expert estimates. If available, emission factors are based on supplier specific data based on information obtained from suppliers. For Indirect spend, emission factors are derived from the American, European, DEFRA input output tables. Emissions are calculated by (for Direct spend) multiplying the standardized quantity of item (in kgs) with the emission factor per kg of the item and (for Indirect spend) multiplying the spend of the item with the emission factor per currency of the item

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

29

Please explain

Confirmed supplier specific emission factors validated by external auditor based on materiality meeting our reasonable assurance quality requirements for reporting. Emission factors were developed in close collaboration with our key supply partners.

Capital goods

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

129000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Spend and purchased volumes were obtained from DSM's ERP systems for the items relevant to this category. Emission factors are derived from the American, European, DEFRA input output tables. Where no emission factor is available, it is assumed the capital good is made from 25% concrete and 75% steel (in line with the WBCSD Chemical Guidelines). Emissions are calculated by multiplying the spend of the item with the emission factor per currency of the item

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

0

Please explain

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

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

193000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). 3 components are calculated - Upstream emissions of purchased fuels, Upstream emissions of purchased electricity, and Transport and distribution losses. The energy data is obtained from DSM's environmental monitoring system. Emission factors are derived from Ecolnvent and IEA 2016. The world average transmission and distribution loss rate of electricity is estimated to be 7% and the world average transmission and distribution loss rate of heat estimated to be 10%. Emissions are calculated by multiplying the energy consumed per component with the emission factor per component.

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

0

Please explain

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

177000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Road transportation, Air freight, Marine transportation and Rail/warehouses emissions factors are obtained from validated databases such as Ecolnvent. Emissions are calculated by multiplying shipment spend data with the appropriate factors. An 80% share of the outgoing transportation and distribution is taken as reference for the incoming transport and distribution from suppliers.

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

0

Please explain

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

161000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Each type of waste has four different treatment methods: (1) landfill, (2) off-site incineration with heat recovery, (3) off-site incineration without heat recovery and (4) off-site recovery. Process related non-hazardous waste and non-process related waste have an extra disposal method (land) farming. The amount of waste per treatment method is derived from DSM's environmental monitoring system. Emission factors are derived from IPCC. Carbon content is estimated based on expert judgement. Inorganic waste is considered 0% carbon. Emissions are calculated by multiplying per method, the sum of waste by method with the carbon content and the emission factor per kg.

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

0

Please explain

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

12000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Business travel is the sum of the emission from Business travel by air, Business travel by rail, Business travel by car and Hotels. Emissions were provided by major service providers for air and rail and extrapolated to 100% of DSM's usage. Emission factors for car and hotels are derived from United States Environmental Protection Agency (EPA), UK Department of Environment, Food, and Rural Affairs (DEFRA) and from the latest American input output table. Distance by car is the sum of taxi, rental and own car/public transport, derived from DSM's ERP system and Travel and Expense system. Hotel nights are derived from DSM's Travel and Expense system. Emissions by car and hotel are calculated based on distance and nights respectively multiplied by emission factor.

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

70

Please explain

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

34000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Distance travelled is calculated using averages and assumptions aligned with the WBCSD Chemical Guidelines and based on total employees, working days and distance travelled. Emission factors are derived from DEFRA. Emissions are the multiple of #employees, distance, #working days, #trips per day and emission factor. In 2020 an adjustment has been made based on an estimate of operations vs office personnel to reflect the impact of people working from home as a consequence from the COVID-19 pandemic.

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

0

Please explain

Upstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

18000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). This category comprises 2 components - leased buildings and leased cars. Emission factor for leased buildings is based on the WBCSD Chemical Guidance. Emissions are calculated based on the number of employees multiplied with the average office space per employee and the emission factor for leased buildings. Emissions for leased cars are provided by the suppliers based on primary data and estimates.

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

20

Please explain

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

221000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Road transportation, Air freight, Marine transportation and Rail/warehouses emissions factors are obtained from validated databases such as Ecolnvent. Emissions are calculated by multiplying shipment spend data with the appropriate emission factors. DSM is actively promoting and stimulating sustainable transportation and continues to engage in joint initiatives with suppliers that lead to environmental benefits in the value chain. Several additional initiatives have been successfully deployed such use of alternative fuels, reducing transportation movements and asset utilization optimization and rigorous challenging of modality choices. Transportation details further downstream in the value chain beyond our customers are not known to DSM and figures are unreliable to obtain due to the diverse application range, global customer base and very broad customer structure in various steps in the value chain.

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

0

Please explain

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Reason of exclusion: This category has been excluded from the scope 3 inventory based on the reasoning provided in the WBCSD Chemical Guidelines: "Chemical companies are not required to report scope 3, category 10 emissions, since reliable figures are difficult to obtain due to the diverse application and customer structure".

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Reason of exclusion: This category has been excluded from the scope 3 inventory given that the direct use-phase emissions are not applicable to DSM and the indirect-use phase emissions are not reported by chemical companies according to the WBCSD Chemical Guidelines: "Chemical companies should not include indirect use phase emissions in the inventory, unless the end use of chemical products is known".

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1079000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol¹ Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Emissions are calculated by multiplying the mass of finished goods with the product (group)-specific carbon content and the treatment-specific emission factors. Carbon content is derived from the product specifications of the main products sold in each business and end-of-life emission factors are derived from the WBCSD Chemical Guidance, IPCC and DSM expert guidance. Mass of finished goods is derived from DSM's ERP system.

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

0

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

DSM applies the WBCSD 'Guidance for Accounting & Reporting Corporate GHG emissions in the Chemical Sector Value Chain' for Scope 3 GHG reporting. This guidance states that category Downstream leased assets is not relevant for the chemical sector.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

DSM applies the WBCSD 'Guidance for Accounting & Reporting Corporate GHG emissions in the Chemical Sector Value Chain' for Scope 3 GHG reporting. This guidance states that category Franchises is not relevant for the chemical sector.

Investments

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

236000

Emissions calculation methodology

DSM's scope 3 emissions are calculated according to the Greenhouse Gas Protocol1 Corporate Value Chain (scope 3) standard and the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (further referred to as the WBCSD Chemical Guidelines). Emission factor for an investment is derived from European and DEFRA input output tables based on

the sector for each investment. Emissions per investment are calculated by multiplying investment revenue by DSM's share and the emission factor.

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

0

Please explain

Other (upstream)

Evaluation status

Please select

Metric tonnes 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

Metric tonnes 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

C6.7

(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

0.000137

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

1233700

Metric denominator

unit total revenue

Metric denominator: Unit total

9038000000

Scope 2 figure used

Market-based

% change from previous year

1.3

Direction of change

Decreased

Reason for change

Our GHG emissions intensity versus total revenue decreased by 1.3%. Emissions improvements through renewable electricity and our greenhouse gas program were offset by the impact of acquisitions, as well as organic growth in China. Product-mix and business variations (partially due to Covid-19) also impacted on our emissions. Therefore, our scope 1 + 2 absolute reduction versus the baseline 2016 (corrected) was constant at 25%, although the portion attributable to structural improvement increased to 18%. This intensity figure includes discontinued operations. The impact of discontinued operations is detailed in Note “3 Change in the scope of the consolidation” to the consolidated financial statements in the Integrated Annual Report 2020.

Intensity figure

0.5082

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

1240000

Metric denominator

metric ton of product

Metric denominator: Unit total

2440000

Scope 2 figure used

Market-based

% change from previous year

0.8

Direction of change

Decreased

Reason for change

Our GHG intensity (year-on-year) decreased by 0.8% in 2020. Our step up in renewably-sourced electricity (from 50% in 2019 to 60% in 2020) was offset by the impact of acquisitions, as well as organic growth in our China sites. Product-mix and business variations (partially due to Covid-19) also impacted on our emissions. In 2020, eight acquired sites were included in our reporting scope for the period 2017–2020. Three newly built sites were also added to the reporting scope.

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	595000	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	7200	IPCC Fifth Assessment Report (AR5 – 100 year)

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
N2O	2500	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	11100	IPCC Fifth Assessment Report (AR5 – 100 year)
Other, please specify (CFCs and HCFCs)	1300	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)
China	45600
United States of America	123400
Netherlands	70800
Switzerland	65700
Germany	116500
Other, please specify (Rest of world)	189700

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)
Nutrition	529300
Performance Materials	77800

Business division	Scope 1 emissions (metric ton CO2e)
Other	4800

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	611800	<Not Applicable>	
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

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)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
China	465300	465300	1239500	30700
United States of America	142300	42700	812400	223500
Netherlands	80800	20600	448900	153300
Switzerland	58100	53200	626400	298000
Germany	7700	0	328300	18400
Other, please specify (Rest of world)	60900	30200	944600	263600

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)
Nutrition	626000	520200
Performance Materials	183500	98500
Other	5500	3300

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	815000	621900	
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Adipic acid	1.2	Emission factor for Adipic acid is obtained directly from supplier (in CO2eq). Purchased volumes are obtained from DSM's ERP system. Scope 3 emissions as reported elsewhere.
Caprolactam	18.3	Emission factor for Caprolactam is derived from SimaPro databases (in CO2eq). Purchased from DSM's ERP system. Scope 3 emissions as reported elsewhere.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	DSM does not sell greenhouse gases.
Methane (CH4)	0	DSM does not sell greenhouse gases.
Nitrous oxide (N2O)	0	DSM does not sell greenhouse gases.
Hydrofluorocarbons (HFC)	0	DSM does not sell greenhouse gases.
Perfluorocarbons (PFC)	0	DSM does not sell greenhouse gases.
Sulphur hexafluoride (SF6)	0	DSM does not sell greenhouse gases.
Nitrogen trifluoride (NF3)	0	DSM does not sell greenhouse gases.

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?

Increased

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	23000	Decreased	2	In 2020, we once again made significant steps towards our purchased renewable electricity target. The percentage of purchased electricity from renewable sources increased globally from 50% in 2019 to 60% in 2020, which resulted in a 14 kt reduction for the year. The biomass cogeneration plant in Sisseln reached full capacity in 2020, and contributed an additional 6 kt reduction versus 2019. In China, additional self-generated renewable electricity and purchased renewable steam in 2020 contributed approximately 3kt reductions. The 23kt decrease is divided by our total 1.17 million tons scope 1 + 2 emissions, resulting in a 2.0% decrease.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Other emissions reduction activities	25000	Decreased	2.1	We executed a variety of GHG reduction projects in 2020. The execution of the 2020 program will have an impact of approximately 25 kt CO2eq on our GHG reductions. The projects range from relatively easy-to-implement modifications in operations, such as improving the insulation around hot parts, to installing advanced energy metering systems, up to the installation of best available technologies (for example, heating and cooling equipment). The 25kt decrease is divided by our total 1.17 million tons scope 1 + 2 emissions, resulting in a 1.7% decrease
Divestment	0	No change	0	DSM made no material divestments in 2020. The announced divestment of Resins and Functional Materials was closed in early 2021.
Acquisitions	65000	Increased	5.6	2020 was the first year of reporting for companies acquired in 2019. The total contribution of these new acquisitions had a material impact on our emissions of 65 kiloton, which when compared to our total 1.17 million tons scope 1 + 2 (market-based) emissions resulted in a 5.6% increase.
Mergers	0	No change	0	
Change in output	53000	Increased	4.5	Production volumes were consistent year on year, however business variations and product mix changes, partly attributable to the pandemic (Nutrition volumes increased by 5%, while Materials volumes decreased by 6%) resulted in an estimated increase in emissions of approximately 53 kt. The 53kt increase is divided by our total 1.17 million tons scope 1 + 2 emissions, resulting in a 4.5% increase.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

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	No
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)	LHV (lower heating value)	75100	2724800	2799900
Consumption of purchased or acquired electricity	<Not Applicable>	747700	506900	1254600
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	164600	1181900	1346500
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	4100	<Not Applicable>	4100
Total energy consumption	<Not Applicable>	991500	4413600	5405100

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	2799900
Consumption of purchased or acquired electricity	<Not Applicable>	1254600
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	1346500
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	4100
Total energy consumption	<Not Applicable>	5405100

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of heat	No
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	No

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

2390600

MWh fuel consumed for self-generation of electricity

578500

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

1812200

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

56100

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

54900

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

54900

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

74000

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

31000

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

31000

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

95300

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

Fuels (excluding feedstocks)

Other, please specify (Other non-renewable fuel)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

248400

MWh fuel consumed for self-generation of electricity

3600

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

244700

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

76000

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

This emission factor is calculated based on a weighted average of the 'other non-renewable fuels'

Fuels (excluding feedstocks)

Biogas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

41200

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

41200

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

No emissions factor attached to renewable fuels

Fuels (excluding feedstocks)

Other, please specify (Other renewable fuels)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

33900

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

33900

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0

Unit

metric tons CO2e per GJ

Emissions factor source

IPCC guidelines 2006

Comment

No emission factor attached to renewable fuels.

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	582100	383700	4100	3800
Heat	0	0	0	0
Steam	2218900	2111000	75100	64700
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	582100	228100
Heat	0	0
Steam	2218900	1570900
Cooling	0	0

C8.2e

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

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

104000

Comment

This also includes Canada

Sourcing method

Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

120000

Comment

This also includes Canada

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Other, please specify (Wind and Solar)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

89000

Comment

These RECs are in place for the European region

Sourcing method

Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

145000

Comment

These PPAs are in place for the European region

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify (Wind / Solar / Hydro)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

216000

Comment

This is a consolidated figure for several locations in Europe, South America and Asia

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Hydropower

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Switzerland

MWh consumed accounted for at a zero emission factor

74000

Comment

Sourcing method

Heat/steam/cooling supply agreement

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Switzerland

MWh consumed accounted for at a zero emission factor

164000

Comment

Consolidated figure for Brazil, China and Switzerland for renewable steam produced from waste and residual biomass

Sourcing method

Other, please specify (Biomethane production from on-site waste water treatment)

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

35400

Comment

Consolidated figure for China and the Netherlands for the production of biomethane from on-site waste water treatment

Sourcing method

Other, please specify (biomass production waste)

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Canada

MWh consumed accounted for at a zero emission factor

26500

Comment

Consolidated figure for biowaste in Peru and Canada used for the generation of steam

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

No

C9. Additional metrics

C9.1

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

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product

Specialty chemicals

Production (metric tons)

2440000

Capacity (metric tons)

2440000

Direct emissions intensity (metric tons CO₂e per metric ton of product)

0.51

Electricity intensity (MWh per metric ton of product)

0.51

Steam intensity (MWh per metric ton of product)

0.55

Steam/ heat recovered (MWh per metric ton of product)

0

Comment

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Process step integration	Large scale commercial deployment	≤20%		DICI (DSM Integral Continuous Improvement journey) guides DSM Operations on a "Culture of Continuous Improvement". Through DICI plant and equipment opportunities for improvements are identified and executed. This program is material in identifying and initiating low-carbon investments on our production sites through for instance value chain optimization and energy reduction by optimizing production processes. The investment figure given above only reflects the external costs. There are significant internal costs related to dedicated roles within the DICI organization. DICI offers an integrated approach to continuous improvement that provides: * Insights by assessing best practice status against world class standards, establishing in- and external bench-marking and measuring progress * Shaping by developing a step-by-step integrative improvement plan supported with a proven integrated implementation methodology * Connecting by building capabilities at all levels in Operations and creating the platform and networks to leverage the knowledge pool in DSM . DSM creates a common Continuous Improvement Culture in Operations by: * Harmonizing all improvement initiatives within DSM Operations and generating maximized value by having one approach which is leveraged by all BGs * Creating maximum learning in our organization through this shared approach and the use of the same practices *

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
				Unleashing the collective power of the Operations community by shared skill and capability building, and leveraging this power through active sharing of DSM best practices and digitalization in Operations * Delivering an annual value contribution of approximately 2% CoGS (Cost of Goods Sold) which would translate into ca. €70 million YoY (year-on-year) for DSM.
Process step integration	Large scale commercial deployment	41 - 60%		Our Energy Efficiency Improvement program consists of a range of reduction proposals from the business groups, encompassing projects for saving heat, fuel and electricity with an expected total of GHG improvement potential of approximately 30 kt in GHG reductions and 2% of energy efficiency savings annually. This program is centrally funded. Projects executed in 2019 began delivering results in 2020, adding up to approximately 26 kt CO ₂ eq reduction on the 2020 emissions. Examples of projects resulting in lower energy use are the replacement of chillers for building cooling in Greenville (North Carolina, USA) with a state-of-the-art version with much lower energy consumption, contributing approximately 2.7 kt CO ₂ eq. In Jiangshan (Jiangsu Province, China), the installation of a membrane filtration system to pre-concentrate a product solution, significantly reducing the amount of required steam, contributed about 6 kt CO ₂ eq. In Lalden (Switzerland), several smaller projects, such as returning condensate and continuous monitoring of steam leakages resulted in energy efficiency improvement and approximately 2 kt CO ₂ eq reduction.

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

Reasonable assurance

Attach the statement

[2020-DSM-Annual-Report.pdf](#)

Page/ section reference

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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 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

[2020-DSM-Annual-Report.pdf](#)

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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

Reasonable assurance

Attach the statement

[2020-DSM-Annual-Report.pdf](#)

Page/ section reference

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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 (upstream & downstream)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

[2020-DSM-Annual-Report.pdf](#)

Page/section reference

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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
C4. Targets and performance	Other, please specify (All emissions data)	Dutch Standard 3810N 'Assurance-opdrachten inzake maatschappelijke verslagen' (Assurance engagements relating to sustainability reports), which is a specified Dutch standard that is based on the International Standard on	All information relating to our targets and performance as detailed in our Integrated Annual Report, as well as the data points that

Disclosure module verification relates to	Data verified	Verification standard	Please explain
	points and target information)	Assurance Engagements (ISAE) 3000 'Assurance Engagements Other than Audits or Reviews of Historical Financial Information'.	are used to calculate the targets and performance are subject to audit.

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.

EU ETS

Switzerland ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

47

% of Scope 2 emissions covered by the ETS

100

Period start date

January 1 2020

Period end date

December 31 2020

Allowances allocated

230387

Allowances purchased

75533

Verified Scope 1 emissions in metric tons CO2e

306021

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Switzerland ETS

% of Scope 1 emissions covered by the ETS

13

% of Scope 2 emissions covered by the ETS

100

Period start date

January 1 2020

Period end date

December 31 2020

Allowances allocated

94894

Allowances purchased

40282

Verified Scope 1 emissions in metric tons CO2e

86407

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

One site was added

C11.1d

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

DSM's strategy to comply with the schemes comprises:

- Reducing emissions and (future) compliance costs by working with our Science Based Targets, i.e., reducing our total Scope 1 & 2 emissions by 30% in absolute terms by 2030 (compared to 2016). We have developed detailed roadmaps for the most relevant sites, which cover potential initiatives to reduce emissions, expected business growth and ETS exposure projections. We are working to reduce emissions for example by improving energy efficiency by 1% per year and implementing specific process emission reduction programs in line with our targets as well as moving to renewable Electricity (75% in 2030). In addition, all new investments need to be also effectively carbon neutral within business groups.
- To encourage investments in low-carbon and carbon-free technologies, we use an internal carbon price in the valuations of key investment projects and in the Profit and Loss (P&L) statements of the business groups for internal management reporting. Since 2019, business growth projects must either be GHG-neutral or else be compensated for within the same business. This increases the visibility of, and encourages accountability for, the impact of carbon on the business. In 2021, we increased the internal carbon price from € 50/mt CO₂e to € 100/mt CO₂e to better reflect the updated insights on the actual price of CO₂ to society. This price is also within the ranges of the scenarios we use for assessing climate transition risks.
- Internally monitoring external carbon pricing schemes & developments in bi-annual basis based on scenarios, alongside to monitoring the need for balancing purchased and allocated allowances on quarterly basis. This includes assessing impacts and preparing documentation well in advance even on locations with emerging liabilities, such as China (details and communication with authorities yet to be finalized).

Case study: As an example where carbon pricing scheme has been a supporting driver for a emissions reduction investment is a biomass project in Switzerland, which was an opportunity to renew an old installation with limited investments in a cost neutral way. While the Swiss ETS prices at the time were not sufficiently high to fully support the business case, we applied our internal carbon price (€ 50/mt CO₂e at time of investment) to prepare for future carbon prices. The project reached full year capacity in 2020, with a total of 46kt CO₂e annual reduction of emissions for DSM.

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

Navigate GHG regulations

Stakeholder expectations

Change internal behavior

Drive energy efficiency

Drive low-carbon investment

Stress test investments

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Scope 2

Application

Business Units

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

50

Variance of price(s) used

Uniform pricing: a single price that is applied throughout the company independent of geography, business unit, or type of decision An internal carbon price of € 50/mt CO₂ eq. applied throughout 2020. As of March 2021, it increased to € 100/mt CO₂ eq.

Type of internal carbon price

Shadow price

Impact & implication

DSM has two types of carbon prices: 1. In business cases for new investments/ acquisitions (CAPEX) 2. In the P&L (OPEX) 1) In 2016 DSM decided to include a carbon price of €50 for each ton of GHG additionally generated as a result of an investment project. In the

business case of the project this carbon penalty had to be included as a cash outflow. In practice, for each large investment two business cases have to be presented. One with an internal carbon price of 50 €/mt CO₂e, and one with the real carbon price (which tends to be much lower or even zero depending on the region). The above is not only valid for capital investment projects but also to acquisition projects. In March 2021, the price increased to €100. 2) DSM has also continued to explore expanding and deepening the used of carbon pricing and in 2019 has included an internal carbon “penalty” in the P&L of the different units. This penalty is calculated at € 50/mt of CO₂e multiplied by the actual emissions (Scope 1&2) in the previous period. As of January 2022, the P&L “penalty” will increase to €100/mt of CO₂e The charge is only included in the internal management reporting and does not trigger any cash flows between entities but will help to increase the awareness and further drive emissions reductions. At DSM, the rollout of Internal Carbon Pricing went smoothly and received broad internal support. Leading up to the launch of its ICP approach, the Finance and operations functions continued to raise awareness on ICP within DSM through interviews in the employee magazine and internal newsletters. These efforts were supported by the CEO and CFO, who expressed their support for ICP and carbon pricing in general through both internal and external communication. The implementation of ICP was further supported by integrating it in existing processes and making it a mandatory factor. Recent internal analysis confirms that Internal Carbon Pricing (IPC) has been instrumental tool to integrate GHG emissions into long-term investment decisions, encouraging low-carbon solutions. The Internal Carbon Price also serves to prepare DSM for the financial impact of an external carbon price, as we are anticipating further regulation to emerge and develop in the regions we operate and also strongly support this.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

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

10

% total procurement spend (direct and indirect)

35

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

72

Rationale for the coverage of your engagement

Our Sustainable Procurement Program (SSP) ensures that we deliver together with our suppliers on our promise to reduce our environmental footprint and improve lives through our activities, products and innovations. The SSP comprises: - Supplier development & evaluation: assessing, auditing & improving our suppliers' sustainability performance through Together for Sustainability (TfS) & EcoVadis by actively developing and following up on corrective actions - Scope 2 program: reducing GHG emissions from purchased electricity. Since 2020, in addition to renewable electricity, DSM procurement is also working to enable sustainable decarbonization of heat via renewable fuels. - Scope 3 'CO2REDUCE' supplier engagement program: reducing GHG emissions throughout our value chain, working together with suppliers on collective carbon footprint & emissions reduction. This program focuses on 400+ high-impact suppliers from material categories with the highest upstream carbon emissions and purchase volume across DSM, covering more than two thirds of the emissions in purchased goods and services. We engage suppliers on GHG emissions reduction, by collecting supplier and product specific emissions data at the raw materials level procured by DSM, & collaborate with suppliers by developing roadmaps consisting of specific emissions reduction projects. We also collect climate information from suppliers through TfS, a joint initiative of 31 chemical companies which DSM joined in 2015. Founded in 2011, TfS has developed and implemented a global assessment & audit program to improve sustainability practices within the chemical industry's supply chain. Members can share all assessments and audit reports, which allows DSM to screen and address sustainability performance and risks for a high number of suppliers. The EcoVadis assessment focuses on 21 criteria in four themes: Environment, Labor & Human Rights, Ethics and Sustainable Procurement. DSM expects suppliers to have a minimum "Engaged" score on their EcoVadis assessment; a lower received score will be required to go through a re-assessment or audit. We assessed 351 suppliers in 2020 through TfS, of which 318 were re-assessments. 60% of re-assessed suppliers received an improved sustainability score, compared to 57% last year, which indicates that our suppliers are further engaging and measurably improving in sustainability.

Impact of engagement, including measures of success

i) Insights from the data collection & compliance program enabled us to clearly define how we choose to do business with suppliers and steer further engagement efforts to influence suppliers' GHG performance. The primary measure of success is to connect, engage and collaborate with all high-impact suppliers to collect supplier specific product carbon footprint primary data, insights and reduction

options (and to define pathway to meet DSM's science based scope 3 target: -28% per ton of product produced (by 2030 vs 2016). 2020 was the first year reporting on the scope 3 intensity development which improved by 5% vs. 2016. Baseline adjustments were made reflecting the new data insights and supplier-specific information. (ii) In 2020 and despite COVID-19, our CO2REDUCE program continued full force and progressed further, whereby we improved our insights and data quality in the reported emissions and explored new means to support our supply base in reductions. The program continued using last year's successfully developed roadmaps in which collaboration with high impact suppliers is core. As a consequence, CO2REDUCE is well established in our businesses and we expanded the reach to more targeted suppliers that contribute the highest GHG emissions in our value chain. (iii) In-depth assessment of our supply base continues to show potential through supplier selection as a path forward to realize reduction against 2016. Decisions on choice of supplier are also defined by other procurement factors. Several cases have been identified whereby supplier selection drives emission reduction. In order to reach our sustainability targets, suppliers will be encouraged to contribute increasingly to sustainability by: reducing of the carbon/eco footprint of raw materials; replacing or minimizing use of hazardous chemicals; minimizing packaging through re-use and reduction of required materials; focus on biodiversity; reducing water consumption; improving the carbon footprint of transport and logistics operations. We greatly improved our tracking of supplier developments and determining their realized reductions. This required an extension to the existing methodology and adjustment of the IT systems for calculation. In the 2020 reported emissions multiple supplier specific emissions were calculated using detailed situations instead of using industry average figures.

Comment

Furthermore (not covered in the above %), through TfS, DSM assessed 351 suppliers in 2020, of which 318 were re-assessments. 60% of our re-assessed suppliers received an improved sustainability score, compared to 57% in 2019, which indicates that our suppliers are further engaging and measurably improving in sustainability.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

Climate change performance is featured in supplier awards scheme

% of suppliers by number

10

% total procurement spend (direct and indirect)

35

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

Rationale for the coverage of your engagement

While carbon footprint reduction is a prime responsibility of any supplier and also part of the scope of our Sustainable Procurement Program (SSP) and TfS, mentioned above, DSM's scope 3 emission reduction program, called the CO2REDUCE supplier engagement program, has a targeted focus on high-impact suppliers and achieving DSM's science based target on scope 3. The program focus is three-fold; engage with suppliers on the necessity of greenhouse gas emission reduction in the value chain, collect primary data at the level of the raw materials procured by DSM, and facilitate, encourage and collaborate with suppliers by developing roadmaps consisting of specific emissions reduction projects. This program is centered around 400+ suppliers from material categories with the highest upstream carbon emissions and purchase volume across DSM, covering more than two thirds of the emissions in purchased goods and services.

Impact of engagement, including measures of success

The primary measure of success is to meet DSM's science-based scope 3 target: -28% per ton of product produced (by 2030) vs. baseline 2016. We do this by helping our suppliers embark on emissions reduction programs in their operations, switch to renewable energy and investigate low carbon feedstocks. Collaboration with suppliers typically involves the exchange of life cycle assessment data to establish the specific situation of a supplier. Through the many engagement moments (more than 50 each year), multiple supplier action plans have been developed that strengthened our relationships with suppliers. 2020 was the first year DSM reported on its scope 3 intensity development which improved by 5% vs. 2016. Baseline adjustments were made reflecting the new data insights and supplier-specific information. Some specific 2020 engagements & measures of success in the program: (i) DSM invited 40+ high impact suppliers to join a webinar on the transition from fossil-based to renewable electricity. We shared our own lessons learned in this field and invited expert consultants to share the wider solution landscape. Not only was the feedback of suppliers overwhelmingly positive, but as a result of the webinar series DSM was nominated for the RE100 leadership awards for Green Catalyst. (ii) DSM designed and held a webinar in the Chinese language on energy efficiency improvements targeting our supply base in China whereby DSM shared its learnings and improvements. In addition, a supplier and a customer shared their actions to inspire the participants. Follow up collaboration with the participants is ongoing focused on efficiency improvement plans to support our journey to meet the intensity reduction goal set in 2030. In the webinars, the lessons learned from DSM were shared as well as a consultancy party was invited to share a broader solution landscape and organize possible follow up with participants. The webinars are made publicly available to suppliers and more have been scheduled as feedback was very positive. The sharing of DSM knowhow aims to accelerate the transition at our supply base towards renewable electricity and ultimately reduce GHG emission in DSM's scope 3.

Comment

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify (Enabling customers and downstream customers to reduce their carbon footprint)

% of customers by number

35

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

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

We have calculated the % customers based on the share of two business lines: DSM Protective Materials and DSM Animal Nutrition & Health (ANH). Both started developing specific initiatives to engage with customers and downstream customers on climate in 2020, as described below. DSM ANH developed Sustell™, an intelligent sustainability service to drive improvements in the environmental footprint and profitability of animal protein production. Sustell™ analyses the environmental impact of 19 categories including climate change, resource use, to name only a few, corresponding to impact assessment method Environmental Footprint 2.0. providing global recognition for the results. Sustell™ enables DSM customers – animal farming companies and the associated value chain to have, for the first time, a powerful solution to measure, compare and improve the sustainability of animal protein production through accurate measurement down to the individual farm, and to then be able to make measurable changes and tangible improvements to the 19 impact categories measured which includes climate change. End 2019, DSM Protective Materials set ambitious targets for the sustainability of its Dyneema® high performance fibers, announcing that it will establish an industry coalition consisting of customers, waste processors, and recycling companies to address the recycling of end products made with Dyneema fiber with the aim to close the loop on the world's strongest fiber. Now known as CirculariTeam®, the coalition aims to drive the transition towards renewable bio- and recycled based resources and enable partners and downstream customers to reduce their carbon footprint while maintaining the same trusted performance. Members are provided a common platform to share knowledge, resources, and technical solutions. To streamline efforts, the coalition has been divided into three Industry Segments (Fiber/Ropes/Nets, UD/ Ballistics, and Textiles and Clothing) with representatives leading each area. Please note on the % coverage of Scope 3 emissions for C 6.5: We have excluded the category "Processing and Use of Sold Products" from our Scope 3 inventory in Question C6.5 (based on the reasoning provided in the

WBCSD/GHG protocol Chemical Guidelines for intermediate producers since reliable figures are difficult to obtain due to the diverse application and customer structure).

Impact of engagement, including measures of success

(i) By providing deep insights into farm-level emissions Sustell™ opens new possibilities for the wider value chain, including the ability to certify and incentivize sustainable farm practices. For example, retailers and financial institutions will be able to objectively manage the risks and opportunities relating to the environmental footprint of animal protein. In addition, Sustell™ enables farmers to accurately forecast the impact of sustainability measures on financial performance. The primary measure of success is retaining our clients, increasing sales/ gaining market share, and measurably reducing farm-level emissions via changing our customers feed utilization & composition. (ii) DSM aims to realize a more transparent and circular value chain for Dyneema, including improved sustainable business operations together with partners and suppliers. The new targets for DSM's Dyneema portfolio address industry-specific demands and are fully aligned with DSM's commitment to create brighter lives for all and focused on the three key areas in which DSM is driving sustainable markets: Nutrition & Health, Climate & Energy and Resources & Circularity. This follows DSM's strategy 'Growth & Value - Purpose led, Performance driven'. In 2019, DSM set itself a target to establish an industry coalition consisting of customers, waste processors, and recycling companies to address the recycling of end products made with Dyneema fiber. As a first step, a DSM Circularity Summit with some key partners and recyclers took place in Brussels in November 2019. During the event the participants jointly created and committed to joining the Coalition while also setting clear priorities, establishing a vision of success, creating an action plan, and identifying opportunities to accelerate the transition to a low carbon and circular economy. The primary measure of success for DSM, is to continue collaboration with its coalition partners, to define milestones and ambitions, review and evaluate progress, and support each other to enable circularity through the whole value chain, which in turn also leads to reduced carbon footprint for partners and downstream customers. In this way, DSM will deliver solutions and growth that benefits both businesses and society at large.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to education customers about your climate change performance and strategy

% of customers by number

100

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

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

Sustainability, including climate related information and performance, is included in all standard business communications and marketing in our various Business Groups. DSM is active in a wide variety of markets and is dedicated to reducing GHG emissions across the various value chains in which it is active. In addition to standard, integrated communications on our performance and strategy, we are also running several engagement campaigns with selected clients to share our approach to meet our Science Based Emissions reduction targets and NetZero emissions, focusing on those clients that are also working with their SBTs and &/or NetZero emission targets across value chains. We also have a number of LCA data based information sharing campaigns, e.g. on the lower carbon footprint of our products (our client's Scope 3 emissions) or properties of our products helping our customers to reduce their Scope 1 and 2 footprint. Furthermore, customer engagement also includes responding to specific customer information requests, including, but not limited to the CDP Supply Chain Program. One case study example of a specific engagement campaign towards our clients is for example from DSM Personal Care & Aroma Ingredients business: in 2019 the PCA team launched Sustainability Imp'Act Card™ for a first wave of +10 key products (with a second wave of +10 products in 2020 followed by another 10+ in consecutive half years). The Sustainability Imp'Act Card™ provide specific, tangible information at the product level around 4 pillars: environmental and social impacts, traceability and identity. Through this card, we offer our customers the access to carbon and water footprint values, the level of naturalness in our ingredients and all related certifications. Please note on the % coverage of Scope 3 emissions for C 6.5: We have excluded the category "Processing and Use of Sold Products" from our Scope 3 inventory in Question C6.5 (based on the reasoning provided in the WBCSD/GHG protocol Chemical Guidelines for intermediate producers since reliable figures are difficult to obtain due to the diverse application and customer structure), However, engaging with our all our clients on the properties and sustainability actions of DSM, including meeting our Science Based Targets and NetZero emissions, is included in standard business communications and marketing.

Impact of engagement, including measures of success

ii) The primary measure of success is retaining our clients, increasing sales/ gaining market share, and in some cases also contributing to encouraging our clients to be more ambitious in their emissions reductions journey by not just being considered as a supportive partner but even as an advisor to guide their starting path. Furthermore, an additional, complementary way of measuring the success of our customer engagement is the overall demand for our Brighter Living Solutions (BLS) portfolio. Through our Brighter Living Solutions, we enable our customers in their sustainability endeavors, as these products are measurably better than the mainstream solution on the market in terms of their environmental (ECO+ i.e. CO2 emissions, resource extraction, waste etc.) and/or social impact (People+, i.e. criteria such as health). The sustainability assessments to support the qualification for Brighter Living Solutions are required to be made by internal Life Cycle Assessment (LCA) experts and reviewed using the four-eyes principle with at least one internal, independent senior LCA consultant. On the impact of total BLS portfolio sales, we see continued demand for solutions that address sustainability challenges. In 2020, 63% of our sales came from BLS products (compared to 63% in 2019) iii) the impact of engagement: While we

recognize some of the positive impacts of these engagements will take a longer time to materialize, we have seen significant positive impact also on short term from some of the campaigns. For example, the PCA business Imp'Act Card™ tool translated in a couple of months into various qualitative and quantitative successes on the market. For example, being acknowledged a sustainable leader or the number 1 in sustainability in the annual suppliers assessment and consequently increased market share or retained market share despite a more competitive price, by demonstrating that we had the lowest carbon footprint in the industry.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers

Trade associations

Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Carbon Pricing)	Support	DSM is actively engaged in the further design and development of ETS Systems and Carbon Pricing. DSM openly explains its position at public meetings and discussions and in conversations with individual political decision makers and other stakeholders.. As a member and long-term supporter of the Carbon Pricing Leadership Coalition (CPLC) CPLC's long-term objective is for carbon pricing to be applied throughout the global economy. In addition to facilitating leadership dialogues, the CPLC also mobilizes support among investors and companies in general, to engage in policy dialogues and to stimulate the corporate use of internal carbon prices. Furthermore we have also heavily contributed to Carbon Pricing being raised on the engagement agenda of World Economic Forum CEO Climate Leaders and IBC	The CPLC and DSM are supportive of both carbon taxes and ETS. The CPLC and its private sector members (including DSM) advocate that – in order for carbon pricing to be a meaningful policy instrument - carbon pricing must be 1) expanded (i.e. more emissions must be covered); 2) it should be deepened (i.e. the price level should be effective); 3) connected (i.e. systems must be linked, over time).). Furthermore, we strongly advocate that competitiveness concerned should not hinder adoption of carbon pricing: , DSM, in the capacity of DSM's honorary Chairman has also co-lead and supported the work of WB CPLC High-Level Commission on Carbon Pricing and Competitiveness, which concluded that while in certain conditions the competitiveness concerns are real, risks should not be overstated and used as a reason not to act on climate change - the risks can be managed with parallel policies; additional costs created by carbon pricing are

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
			often small relative to other variables that impact the investment decisions and competitiveness, such as corporate tax rates differences, wage arbitrage, regulations, availability of labor, infrastructure, exchange rates and more such as commodity prices
Clean energy generation	Support	DSM continued its engagement with RE100 during 2020. RE100 is a collaborative, global initiative of influential businesses committed to 100% renewable electricity, working to massively increase corporate demand for renewable energy. Through the Prince of Wales Corporate Leaders Group and Step Up Now campaign, DSM supports efforts to eliminate fossil fuel subsidies as well as ambitious EU ETS reform and long term climate policy by the EU. Globally, we engage via the Climate Group's RE100 campaign other related groups, such WBCSD's Climate & Energy group (& REsource) and regional initiatives such as the as JFC Tsukuba's RE in Japan. In 2017 DSM became a signatory to We Are Still In, a climate-ambitious declaration of a wide variety of non-party stakeholders that was initiated in response to the US government announcing withdrawal from the Paris Agreement. Among other, it calls for an accelerated transition to a clean energy economy.	DSM has advocated (among other through the World Economic Forum CEO Climate Leaders, spearheaded by DSM's CEO) that governments should have a strategic action agenda, in which development and scaling of renewable energy technologies should be a key priority and harmful subsidies to fossil energy rapidly phased out acting as negative price signals. Across regions, DSM actively engages with policymakers on supportive policies for renewable energy, including bio-fuels and solar. In North America in particular, DSM directly and through trade organizations engages with policymakers on supportive policies for its advanced bio-fuels produced in a joint venture with POET
Other, please specify (Net Zero global economy)	Support	Throughout 2021, in the leadup to COP26, DSM is demonstrating and engaging in business leadership in climate action via support of various open letters to governments, including: - April 2021: We Mean Business & Ceres open letter to Biden, to support the Biden administration's commitment to climate action, and for setting a federal climate target to reduce emissions. - June 2021: Alliance of CEO Climate Leaders open letter to call on the G7, as well as, other world's leaders, to take actions that will accelerate efforts to halve emissions by 2030 and reach net-zero economies by 2050.	For nation states to commit to halve emissions by 2030 and reach net-zero economies by 2050.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

CEFIC (European Chemical Industry Council)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Cefic supports the European ambition to become climate neutral by 2050. They raise awareness for the specific ways in which the chemical industry can support GHG emissions reduction for mitigation of and adaptation to climate change and to advocate for realization of a business environment in which the chemical industry can realize this potential best.

How have you influenced, or are you attempting to influence their position?

DSM participates in internal working groups by providing challenge and solution focused improvement proposals. DSM advocates for increased sustainability ambitions particularly on topics related to climate change and circular economy, and challenges decisions when not aligned with a progressive sustainability agenda. Since September 2018 DSM took over the chairmanship of Cefic Sustainability Forum. The Chair, one of the DSM Co-CEO's, also sits on the board and executive committee of Cefic.

Trade association

VNCl (Dutch chemical industry association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

VNCl advocates for a European level playing field. VNCl published a Roadmap (2021) aiming at a climate-neutral & circular chemical industry by 2050.

How have you influenced, or are you attempting to influence their position?

The president of DSM Netherlands sits in the VNCl board. DSM participates in the advocacy group where it advocates a more progressive sustainability approach.

Trade association

EuropaBio

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Promote Climate Change solutions and Bioeconomy

How have you influenced, or are you attempting to influence their position?

DSM is a member of the board. Via board and working groups. Via board, working groups and active engagement in the drafting of positions Overview of factsheets: <http://www.europabio.org/filter/industrial/type/fact> Example on climate:

http://www.europabio.org/sites/default/files/reducing_greenhouse_gas_emissions_with_the_bioeconomy.pdf Example on how biotechnology contributes towards achieving the UN Sustainable Development Goals:

http://www.europabio.org/sites/default/files/Digital%20version%20-%20IB%20and%20SDGs_0.pdf

Trade association

Holland Bio

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Advocate; Biotechnology for better health, greater sustainability and economic growth.

How have you influenced, or are you attempting to influence their position?

DSM is chair on the board of Holland Bio.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Climate Advocacy is an important part of DSM's climate agenda, as we believe in positive feedback loops in which bold government policies and private sector leadership reinforce each other, and together take climate action to the next level ("Ambition loops"). In our view, broad collaboration across the value chains, peers and with policymakers is needed to rapidly redesign the economy. We believe that as an active part of society, it is our responsibility to help shape and amplify the pressure for systemic change and show policymakers that companies are ready for more ambitious climate policies to help raising government ambition (this creating a positive 'Ambition Loop'). In this capacity, we are advocating a progressive agenda in discussions about climate change and energy in industry associations, other industry initiatives and business organizations and take a leading role in teaming up with other ambitious companies (e.g. through WBCSD, WEF, WMB, CLG, RE100, COP26 Business Leaders Group, CEO Climate Alliance etc.).

The overall priority for us is to support long-term policies that enable a low-carbon economy. For example, but not limited to, carbon pricing and removal of fossil fuel subsidies; policies that are incentivizing low carbon innovations and scaling of renewable energy; policies increasing transparency and awareness of the impacts of climate change. DSM supports and leads advocacy initiatives which encourage climate action by governments to enable the shift to a low-carbon economy; help us drive concrete actions, to improve the carbon footprint in our own operations; catalyze an action-oriented movement among companies from all industry sectors, and connect well with our core value and moral obligation to take care of the planet.

Examples of climate relevant business networks and initiatives DSM is active in (not and exhaustive list):

World Economic Forum: DSM Co-CEO is a member of CEO Climate Leaders of the World Economic Forum (WEF), with DSM honorary Chairman co-chairing the Alliance. Furthermore, DSM is active or co-hosting specific working groups in several of the WEF climate-related working groups (e.g. Collaborative Innovation for Low-Carbon Emitting Technologies/ and Mission Possible initiatives)

We Mean Business: DSM is a member of the Corporate Advisory Group and campaigning on several climate commitments, including RE100, Science Based Targets, TCFD aligned reporting and Responsible corporate engagement in climate policy

CLG Europe: DSM is an active member of CLG Europe (formerly Prince of Wales' Corporate Leaders Group), which is on the progressive end of the EU policy influencing spectrum, regarding climate change. We actively contribute to policy briefings to bring attention to and demonstrate business leadership in climate innovation, solutions and other actions.

WBCSD: We are active within several of the WBCSD programs, including Climate Policy Working Group and the Climate & Energy Program (including the board), as well as circular economy-and climate smart agriculture related areas. We actively share our experiences and approach with other members.

CPLC: DSM is a member of global Carbon Pricing Leadership Coalition (CPLC), DSM honorary chairman Feike Sijbesma is also Carbon Price Champion for CPLC, co-chairs Committee on Competitiveness of Carbon Pricing and is one of the three Climate Leaders of the World Bank Group.

RE100: In 2020, DSM was shortlisted for the Best Green Catalyst award, which recognizes companies that are working with their suppliers to switch to renewable energy.

DSM has also committed to implement the TCFD recommendations by the end of 2020, and endorsed the initiative via various advocacy efforts organized by the World Economic Forum and the Prince of Wales' Accounting for Sustainability initiative, and participates in the WBCSD preparer forum. Through DSM co-CEO and finance function, we are also and active member of A4S (Accounting for Sustainability).

RE100: In 2020, DSM was shortlisted for the Best Green Catalyst award, which recognizes companies that are working with their suppliers to switch to renewable energy.

For more information on DSM's climate change advocacy please view: <https://www.dsm.com/corporate/sustainability/climate-energy.html>

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our climate change strategy is fully integrated into our business strategy, and as such regularly reviewed and discussed via business line management which ensures full awareness and commitment in the line. Climate advocacy activities globally are discussed several times a year among the Executive Committee. Additionally, the DSM Sustainability Leadership Team supports the development and deployment of the Corporate Sustainability Strategy which includes climate change. The Sustainability Leadership Team brings the different functional areas together in the company. For example, the Vice President Corporate Sustainability, Chief Procurement Officer, Senior Vice-President Operations & Responsible Care and the Business Group Sustainability Directors are in the team as well as the Executive Vice President Global Brand & Communications (who oversees, among other, the public affairs functions). This leadership team ensures that the companies direct and indirect activities are consistent with our overall climate change strategy. Within each functional area additional global teams (e.g. HSE Leadership Team, Operations Leadership team) and networks (e.g. DSM Environmental Network) and communication structures are effective to ensure a consistent and effective deployment of our strategy. From these roles, we have regular engagement and explicit discussions on the climate positions of the key associations that are most influential and where we are active members (e.g. on the board).

i) However, while the above mentioned internal alignment on climate positioning for those in external facing roles and liaising with trade associations is well established and crucial, we have noticed that in large corporations like DSM there are several levels of engagements with trade associations, often taking place at a regional level. In 2019 DSM started to define a new processes to assess and engage

with global trade associations to ensure aligned climate policy of all “mainstream” business associations, which we are supporting through membership contributions and who might advocate on our behalf on many (business) relevant topics, including climate related topics.

The aim of the program is to drive and increase climate ambition by informing and influencing high-impact business organizations with our expectations – also by making the link with “mainstream” trade, and advocacy work with climate policies more visible. A cross functional team, led by Global Public Affairs and Corporate Sustainability was set up, to execute pilot screening and define long term approach in close collaboration with regional offices (Presidents) and Business groups, as both constituents have traditionally independently liaised with local trade associations.

In the pilot phase, an initial desk screening of the climate positions of selected key associations (40 globally) was conducted to 1) test the availability of data, 2) suitability of the pre-defined climate positions criteria and 3) develop a process manual (including training) to support regions and business groups in future assessment and engagement. The process was followed up with detailed engagements with broader set of the associations to further share DSM ambitions, and where differences arise, seek opportunities to influence from within or collectively with other companies, and ultimately bring persistent differences back to the review team for assessment of next steps. The work is still ongoing.

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 mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

[2020-DSM-Annual-Report.pdf](#)

Page/Section reference

TCFD references: p187 Governance: p126-127 (Sustainability Governance Framework), p152 (Sustainability Committee) Strategy: p14-25 (Strategy), p68-82 (Planet) Risks and opportunities: p133-139 (Risk Management), p91-114 (Review of Business -

opportunities) Emissions figures and targets: p68-82 (Planet) Other metrics: p68-82 - Our emissions targets are supported by other ambitions, including the purchase of electricity from renewable sources and our energy efficiency improvement.

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

C15. 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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Co-CEO and COO	Chief Executive Officer (CEO)