Royal DSM Integrated Annual Report 2020

Creating brighter lives for all

NUTRITION · HEALTH · SUSTAINABLE LIVING

DSM
BRIGHT SCIENCE. BRIGHTER LIVING.

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Forward-looking statements

This document may contain forward-looking statements with respect to DSM's future performance and position. Such statements are based on current expectations, estimates and projections by DSM and information currently available to the company. Examples of forward-looking statements include statements made or implied about the company's strategy, estimates of sales growth, financial results, cost savings and future developments in its existing businesses as well as the impact of future acquisitions, and the company's financial position. These statements can be management estimates based on information provided by specialized agencies or advisors.

DSM cautions readers that such statements involve certain risks and uncertainties that are difficult to predict and therefore it should be understood that many factors can cause the company's actual performance and position to differ materially from these statements. These factors include, but are not limited to, macro-economic, market and business trends and conditions, competition, legal claims, the company's ability to protect intellectual property, changes in legislation, changes in exchange and interest rates, changes in tax rates, pension costs, raw material and energy prices, employee costs, the implementation of the company's strategy, the company's ability to identify and complete acquisitions and to successfully integrate acquired companies, the company's ability to realize planned divestments, savings, restructuring or benefits, the company's ability to identify, develop and successfully commercialize new products, markets or technologies, economic and/or political changes and other developments in countries and markets in which DSM operates. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the 'Risk Management' section.

As a result, DSM's actual future performance, position and/or financial results may differ materially from the plans, goals and expectations set forth in such forward-looking statements. DSM has no obligation to update the statements contained in this document, unless required by law. The English-language version of this document is leading.

Key data

Key data[1]

	2020	2019
People		
Workforce at 31 December (headcount)	23,127	22,174
Female:male ratio[2]	29:71	28:72
Total employee benefit costs (in € million)	1,848	1,811
Frequency Index of Recordable Injuries (per 100 DSM employees and contractor employees)	0.24	0.28
Employee Engagement Index (in %)	76	74
Planet		
Primary energy use (in PJ)	21.5	21.2
Energy Efficiency Improvement (in %, year-on-year)	5.7	2.3
Greenhouse gas emissions, market-based (scope 1 + 2, in CO_2 equivalents, x million tons)	1.2	1.2
Greenhouse gas scope 1 + 2 cumulative absolute reduction (in %, baseline 2016)	25	25
Water consumption (x million m^3)	24	23
Brighter Living Solutions (as % of running business)	63	63
Profit (in € million)		
Net sales from continuing operations	8,106	7,998
Adjusted EBITDA from continuing operations[3]	1,534	1,551
EBITDA from continuing operations	1,368	1,457
Adjusted operating profit from continuing operations (EBIT)[3]	929	989
Operating profit from continuing operations (EBIT)	662	872
Net profit for the year	508	764
Adjusted net operating free cash flow[3]	955	801
Capital expenditure, cash based	585	609
Dividend for DSM shareholders (based on profit appropriation)	420[4]	425
Net debt	2,577	1,144
Shareholders' equity	7,399	7,731
Total assets	14,364	13,443
Capital employed	10,560	9,311
Market capitalization at 31 December[5]	25,545	21,063
Per ordinary share in €		
Net earnings	2.91	4.27
Dividend	2.40[4]	2.40
Financial ratios (%)		
Sales to high-growth economies / net sales (continuing operations)	44	45
Innovation sales / net sales (continuing operations)	20	21
Adjusted EBITDA margin (continuing operations)[3]	18.9	19.4
Average working capital / annualized net sales (continuing operations)	22.3	21.2
ROCE (continuing operations)[3]	10.4	12.3
Gearing (net debt / equity plus net debt)	25.6	12.7
Equity / total assets	52.1	58.3
Cash provided by operating activities / Adjusted EBITDA[3]	90.5	82.2

1 For definitions, see Explanation of some concepts and ratios.

2 For the indexes based on age, nationalities, gender, inflow and outflow, the companies that are not integrated into the HR systems (approx. 6% of the total workforce) are not taken into account.

3 In presenting and discussing DSM's financial position, operating results and cash flows, DSM (like many other publicly listed companies) uses certain Alternative performance measures (APMs) not defined by IFRS and referred to as 'Adjusted'. These APMs are used because they are an important measure of DSM's business development and DSM's management performance. A full reconciliation of IFRS performance measures to the APMs is given in the Alternative performance measures.

4 Subject to approval by the Annual General Meeting of Shareholders.

5 Source: Bloomberg.

Co-CEO letter

Dear Reader,

What a journey it has been since we started as Co-CEOs in February ! Never could we have imagined such a first year in our new role, but looking back we are very grateful and proud of how everyone at DSM stepped up to the challenge of coping with the COVID-19 pandemic. Despite this worldwide crisis, we stood by our customers at all times, delivered solid financial results and made important steps on our strategic journey. Yet what stands out most, and will help us going forward, is how vividly we all experienced the importance of our long-standing company culture, our values anchored in our Triple-P bottom line ambition (People, Planet, Profit) and being a purpose-led, performance-driven company. This is what gave us courage, across DSM, to act quickly and do the right things in these most unusual of circumstances.

Swift response to COVID-19 pandemic

The safety, health and well-being of our employees and partners is always our first priority. So when COVID-19 first emerged, we responded swiftly with a range of measures including preemptive travel restrictions, working from home where possible, digitalizing internal and external meetings, and intensifying hygiene and safety protocols. We ensured that our people and partners were safe, we kept our facilities and supply chains running, and we continued to serve our customers, reacting decisively in the spirit of 'One DSM'. These efforts have not gone unnoticed: our overall Net Promoter Score (NPS), which we use to track customer satisfaction, has reached an all-time high of +50.

For our Materials businesses that were most impacted by the lockdowns, swift actions were taken to manage down costs. At the same time, true to our spirit as a purpose-led company, DSM teams applied their scientific know-how, innovation capabilities and resources to help fight COVID-19 through various global and local initiatives. We learned how to produce viral testing equipment such as nose swabs, face masks and disinfectant to help address local shortages, and distributed immunity-optimizing dietary supplements to all our employees, their families, local front-line workers and local communities.

"We remained determined to keep delivering for our customers, something that would not have been possible without the passion, resourcefulness and commitment of our exceptional colleagues."

Solid 2020 financial performance

We delivered a solid full year financial performance in a challenging COVID-19 environment, led by good results in Nutrition and a strong recovery in Materials in the fourth quarter of the year. On a continuing operations basis, our group sales were up 1% and Adjusted EBITDA was down 1%. Nutrition sales were up 6%, and Adjusted EBITDA was up 7% despite significant negative foreign exchange effects. Materials saw a decline in sales and Adjusted EBITDA of 13% and 27% respectively. And we realized an Adjusted Net Operating Free Cash Flow from continuing and discontinued operations of €955 million, up 19%.

Overall, COVID-19 had a slightly negative effect on our sales (including Resins) as Materials saw a negative sales impact of around 10% on volumes in the year, due to reduced global demand in the second and third quarter. Nutrition saw an overall slightly positive sales impact from COVID-19, mainly due to very strong demand in Human Nutrition for immunity optimizing products.

Progress on People and Planet targets

On People, we saw a further improvement in the Frequency Index of DSM Recordable Injuries to 0.24 from 0.28 in 2019, achieving our target level of 0.25. We continue to strive to make our company fully incident- and injury-free. It was also encouraging to see that in such a challenging year we had a notable increase in Employee Engagement results (from 74% to 76%). And with regard to Inclusion & Diversity, the Executive Committee is now 57% female, the Supervisory Board is 42% female, and progress was made on improving the representation of women (21% female executives) and under-represented nationalities on executive level (30%). In order to increase further our focus on creating a work environment that works for all and drives our success, much was done in 2020, including crafting a new People & Organization Strategy, launching our Culture Compass, introducing a broader Inclusion & Diversity agenda including pillars on generations, disability and LGBTQ+, supported by several Employee Resource Groups, and encouraging a dialogue on hybrid workplaces post-pandemic as well as piloting new technology for career development.

On Planet, we are well on track with respect to our greenhouse gas (GHG) reduction, energy efficiency and purchased renewable electricity targets. We signed two new renewable energy Power Purchase Agreements (PPAs), covering approximately 25% of our current total annual electricity consumption and putting us firmly on course to achieve our target of 75% electricity from renewable resources. This progress supports our commitment to a long-term pathway to work toward net-zero GHG emissions across our operations and value chains by 2050. We are also proud to have received an A rating for our climate change strategy and an A- for our water stewardship from CDP, the non-profit global environmental disclosure platform.

In 2020, 63% of our sales (including Resins), came from products that have a better environmental and/or social impact than mainstream solutions. We call these our Brighter Living Solutions. Delivering value in all respects, including environmental and social positive impact, remains at the core of our innovation pipeline and is well aligned with customer aspirations.

“We continued to make good progress on the execution of our long-term strategic plan and delivering against our purpose-led sustainability ambitions in People and Planet.”

Maintaining our growth strategy focused on Nutrition, Health and Sustainable Living

Our long-term strategic focus remains on Nutrition, Health and Sustainable Living. Our strategy aligns our unique competences and our purpose (‘creating brighter lives for all’) with our ambitions to address specific megatrends and targeted Sustainable Development Goals (SDGs). The world faces increasing challenges, and COVID-19 has demonstrated more than ever the importance of addressing these through the power of science and innovation. Our expertise is in the science of how nutritional ingredients can ensure better general health for people and animals (‘Health through nutrition’) as well as in how to enhance the health of the planet through sustainably produced food along with more circular and bio-based materials.

During 2020, we made good progress on our long-term strategic plan. We executed two change programs, ‘Agility to Grow’ and ‘Fit for Growth’, to support profitable growth through process simplification and improved alignment with market needs. We also enhanced our platform-based approach to driving innovation, resulting in a healthy pipeline of exciting new products and solutions such as Bovaer®, our feed additive proven to cut ruminant methane emissions by 30%, Veramaris® our algal-based omega-3, and fermentative Stevia through our Avansya partnership with Cargill. We completed three important acquisitions, namely CSK in Food Specialties, Glycom in Early Life Nutrition and the Erber businesses Biomin and Romer Labs in Animal and Human Nutrition, for a combined value of €1.7 billion. And in September, we announced the divestment of our Resins & Functional Materials business and associated business to Covestro AG, a transaction we expect to close in the first half of 2021.

We are committed to deliver against current performance expectations while at the same time building the company for the future. So going forward, while ensuring the effective integration of recent acquisitions and the scaling of innovations, we will also start expanding our capabilities in Nutrition in the areas of Precision & Personalization, especially through enhanced digital and biosciences competencies. And to support these developments we will also make further adjustments to our organization, including having the right organizational culture to embrace this next phase.

Our Culture guided us through the storm

When nothing is 'as usual' and new answers are needed fast, the true culture of an organization comes to life, and this unprecedented year 2020 showed us the strength of our DSM culture. Anchored in our long history as a purpose-led company and our Triple P bottom line ambitions dating back to 2002, our values enabled everyone in the company to take responsibility and act fast, with safety as the top priority, living out a caring, courageous and collaborative spirit that quickly picked up the internal hashtag '#Together we stand strong'.

Thank you

We are incredibly grateful for the great company and purpose-led cultural legacy that we inherited from our predecessor Feike Sijbesma, a legacy linked to his amazing 30-year career in DSM, and in particular his 13-year tenure as CEO. And our final words are: Thank you! To our colleagues, thank you for your courage, your collaboration and your caring, which have been without measure through this incredibly challenging year, and you can be proud of how we held our course, all together. To our customers, suppliers and all those that trusted us to deliver even in the toughest of circumstances. And to our shareholders, for their ongoing trust and loyalty.

Stay safe and stay healthy!

Geraldine Matchett and Dimitri de Vreeze, Co-CEOs Royal DSM

Our approach to the Sustainable Development Goals

The UN Global Goals for Sustainable Development (SDGs)

In 2016, the United Nations launched the SDGs, a roadmap to a more environmentally and socially conscious and responsible world by 2030. At DSM, we believe that companies have a key role to play in achieving the SDGs. We believe that our combination of Health, Nutrition and Sustainable Living contributes toward achieving the SDGs

Working on the SDGs through our Focus Domains

With our unique science-based competences, we have created a strong platform for growth and are ideally positioned to contribute to, and capture the growth opportunities offered by, the global megatrends and SDGs, with a particular focus on developing innovative solutions addressing our Focus Domains of Nutrition & Health, Climate & Energy, and Resources & Circularity. Our purpose-led, performance-driven strategy is based on the global megatrends and SDGs.

Our Brighter Living Agenda brings together many of our initiatives and creates an actionable framework. It comprises three pillars:

- *Improve*: we improve our own operations to do no harm. We optimize our own operational impact by continually raising safety standards, promoting health and well-being in our own workforce, reducing our emissions, increasing our use of renewable energy and unlocking more value from limited resources
- *Enable*: we enable our customers to have a positive impact by creating products and services that enable our customers and partners to deliver sustainable and healthy solutions for the planet and society
- *Advocate*: we advocate in our ecosystem for systemic change — we advocate for the future we believe in and we fully accept our responsibilities as a corporate member of society

Our purpose and three Focus Domains align most closely with five of the SDGs, and we show here how we approach these core SDGs. Information about our engagements can be found in the Sustainability statements and throughout this Report.

SDG 2 and SDG 3 through Nutrition & Health

The link between adequate nutrition and health has never been clearer. For the first time in human history, diet-related non-communicable diseases (including diabetes, heart disease, stroke, and some cancers) have overtaken communicable diseases as the primary cause of deaths worldwide. At the same time, malnutrition in its various forms affects more than 30% of the world's population: more than 2.3 billion adults and children are obese or overweight, more than 820 million people go to bed hungry each night, and approximately two billion suffer from hidden hunger.

Our Nutrition & Health Commitments

- Together with the United Nations World Food Programme, we will raise awareness of improved nutrition while continuing to develop new food solutions
- We take responsibility to control and minimize all possible safety risks and adverse effects that could be caused by (the substances present in) our products throughout the value chain
- Together with Generation Unlimited and Sight and Life Foundation, we will develop a business plan in Africa to reach one million smallholder farmers by transforming the food system, providing better nutrition, stimulating youth job creation and reducing reliance on food imports

The Brighter Living Agenda for Nutrition & Health

Improve	Enable	Advocate
By reducing occupational safety incidents and promoting health and well-being in our own workforce.	By enabling healthy diets for all, through solutions such as the sustainable production of animal proteins, plant-based choices, immunity-supporting solutions, and food & beverage solutions. Our biomedical solutions improve quality of life for surgical patients and improve people's health status.	For healthy diets within planetary boundaries, in partnerships to address sustainable and healthy nutrition through partners such as the World Business Council for Sustainable Development's FReSH program and the World Economic Forum, and in partnerships to fight malnutrition, such as the UN World Food Programme, UNICEF, World Vision and Scaling Up Nutrition.

Contributing to the Sustainable Development Goals

Our Nutrition & Health Focus Domain links to the following SDG targets:

- *Target 2.1* By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- *Target 2.2* By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- *Target 3.2* By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- *Target 3.4* By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- *Target 3.9* By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 7 and SDG 13 through Climate & Energy

The stability of the world's climate is under threat. We believe there is an urgent need to take action to curb climate change and its irreversibly damaging effects on biodiversity by dramatically limiting greenhouse gas emissions, transitioning to renewable energy, and adopting low-carbon emission solutions and processes.

The transition to a low-carbon economy will also create business opportunities and drive growth for our innovative and sustainable solutions. We are enabling the development of a low-carbon economy not just by reducing our own emissions but also by developing solutions to help customers and consumers to cut theirs.

Our Climate & Energy Commitments

- Our Science Based Targets comprising a scope 1 + 2 absolute reduction of 30% and a scope 3 intensity reduction of 28% by 2030 versus baseline 2016 toward our net zero emissions by 2050 commitment
- Supporting targets of an average annual energy efficiency improvement of >1% and 75% purchased electricity from renewable sources by 2030

- We apply an internal carbon price of €50/t CO_2eq on our key investments, acquisitions and in our management reporting

The Brighter Living Agenda for Climate & Energy

Improve	Enable	Advocate
Our long-term goal is net-zero emissions by 2050. To put us on track to achieve this, by 2030 we will reduce our own carbon footprint and improve the resiliency of our assets and supply chains. Our approach to resiliency and adaptation, including physical and transition risk assessments, is summarized in Taskforce on Climate-related Financial Disclosures (TCFD).	By enabling the low-carbon economy through solutions that help customers cut emissions and improve society's ability to adapt to climate change. These include improving the sustainability of animal farming and engineering solutions for mobility and solutions for renewable energy.	For climate action and building the movement for a low-carbon, resilient economy through cross domain initiatives such as the World Economic Forum and World Business Council for Sustainable Development, and leading climate platforms such as the Carbon Pricing Leadership Coalition, RE100 and GCA.

Contributing to the Sustainable Development Goals

- *Target 7.2* By 2030, increase substantially the share of renewable energy in the global energy mix
- *Target 7.3* By 2030, double the global rate of improvement in energy efficiency
- *Target 13.2* Integrate climate change measures into national policies, strategies and planning
- *Target 13.3* Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

SDG 12 through Resources & Circularity

The world's resources are finite, and with a population projected to grow to 9.7 billion people by 2050[1], some estimates suggest we will need the equivalent of four Planet Earths by then to sustain our current lifestyles[2]. In addition, over 30% of all food produced either lost or wasted, representing a huge drain on natural resources[3]. New ways of achieving a balance between demand and supply have to be found, including approaches that are not based on single use and subsequent disposal. We are making important contributions to the development of a genuinely circular, bio-based economy founded on closed-loop solutions.

Our Resources & Circularity Commitments

- We will offer a full portfolio of alternatives that contain at least 25% recycled- and/or bio-based content by 2030 in our Engineering Materials business
- Sixty percent of the feedstock used in our Dyneema products will be bio-based by 2030
- 'Safe by design' is the leading principle in the development of new and better products and processes
- Eighty to ninety percent of our waste will be recycled by 2020
- We will at least maintain our water efficiency while we work toward defining a context-based water target
- We will improve our VOC emission efficiency by 50% by 2021 (vs. 2015)

1 Source: UN
2 Source: Accenture strategy research, 2017
3 Source: FAO

The Brighter Living Agenda for Resources & Circularity

Improve	Enable	Advocate
By unlocking more value from the limited resources that are available. Water security and our impact on biodiversity are important aspects of our continuous improvement mindset. We minimize the use of substances of high concern where possible.	By enabling our customers to design safer and more circular end-products, and minimize the use of finite resources. These include our joint ventures Veramaris and Olatein, as well as bio-based and recycled-based solutions such as Akulon PA6 and bio-based Dyneema®.	For the transition from a linear to a circular and bio-based economy through global platforms such as the World Business Council for Sustainable Development, and circular economy platforms such as Platform for Accelerating the Circular Economy, Circle Economy and the Ellen MacArthur Foundation.

Contributing to the Sustainable Development Goals

- *Target 12.2* By 2030, achieve the sustainable management and efficient use of natural resources
- *Target 12.3* By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- *Target 12.4* By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
- *Target 12.5* By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Our contribution across the SDGs

Our purpose-led, performance driven strategy is based on global megatrends and the SDGs. We align our approach of our Focus Domains with five ‘core’ SDGs: SDG 2 and SDG 3 through Nutrition & Health, SDG 7 and SDG 13 through Climate & Energy and SDG 12 through Resources & Circularity. In addition to these ‘core’ SDGs, we believe that we can also Improve, Enable and Advocate to a varying extent across all the SDGs. Below we indicate our estimated contribution in respect of all the SDGs.

	Improve	Enable	Advocate
1 No Poverty	●●	●	●●
2 Zero Hunger	●	●●●	●●●
3 Good Health and Well-Being	●●	●●●	●●●
4 Quality Education	●	●	●●
5 Gender Equality	●●	●	●●●
6 Clean Water and Sanitation	●	●●	●
7 Affordable and Clean Energy	●●●	●●●	●●●
8 Decent Work and Economic Growth	●●	●	●●
9 Industry, Innovation and Infrastructure	●	●●	●●
10 Reduced Inequalities	●●	●	●●
11 Sustainable Cities and Communities	●	●●	●●
12 Responsible Consumption and Production	●●	●●●	●●●
13 Climate Action	●●	●●	●●●
14 Life Below Water	●	●●	●●
15 Life on Land	●	●●	●
16 Peace, Justice and Strong Institutions	●	●	●●
17 Partnerships for the Goals	●●	●●	●●●

Improve: The impact within our own operations

Enable: Products that enable our customers to deliver sustainable products for planet and society

Advocate: Advocating for the future we believe in and acting on our responsibilities

Estimate of contribution

● Minor

●● Moderate

●●● Major

Report by the Managing Board

Purpose

For more than a decade, we have distinguished ourselves by embracing sustainability and providing value for all our stakeholders across the three dimensions of People, Planet and Profit. We have taken a decisive next step as a **purpose-led company**, contributing to a brighter world for all with our science-based solutions. Our purpose is therefore fully anchored in our long-term purpose-led, performance-driven Strategy.

Our purpose is to create brighter lives for all

Businesses need to generate profitable growth while at the same time playing a positive role in the world.

We use our bright science to deliver **positive transformations** at scale for as many people as possible today and for generations to come, operating within the constraints of the world's finite resources. We aim to redefine how we live and work in order to create a fairer, more prosperous and more sustainable society.

We aspire to be a company for all, **creating value** for all our stakeholders — customers, employees, shareholders and society at large — and building a stronger legacy and a brighter future for generations to come.

We are already reaching more than 2.5[1] billion people worldwide

Acting on our purpose

We make change happen in three ways:

- *Improve*: we improve our own operations to do no harm; we optimize our own operational impact by continually raising safety standards, promoting health and well-being in our own workforce, reducing our emissions, increasing our use of renewable energy and unlocking more value from limited resources
- *Enable*: we enable our customers to have a positive impact by creating products and services that enable our customers and partners to deliver sustainable and healthy solutions for the planet and society
- *Advocate*: we advocate in our ecosystem for systemic change; we advocate for the future we believe in and we fully accept our responsibilities as a corporate member of society

1 Lives Reached is a measure of the number of consumers reached each year via products of customer and other third parties which contain DSM products and solutions. This estimate is based on key market insights relating to market share, usage patterns and product composition. Mathematical modeling is used to eliminate double counting. For more information, see Explanation of some concepts and ratios.

We recognize the growing influence of large companies in the global economy, and the increasing impact they are having on our world. With increased impact comes increased responsibility. The private sector as a whole needs to deliver value for all stakeholders — not just employees, customers and shareholders, but the world's communities and the individuals who live in them. We therefore take an **integrated approach** to our responsibilities.

During the course of 2020, by means of our integrated approach, we implemented a range of external and internal initiatives to further our purpose and make an impact at scale in our three **Focus Domains** Nutrition & Health, Climate & Energy, and Resources & Circularity that most closely align with five of the Sustainable Development Goals. An overview of these initiatives can be found in Our approach to the Sustainable Development Goals and throughout this report. Examples of our purpose-led solutions are provided in the case study section.

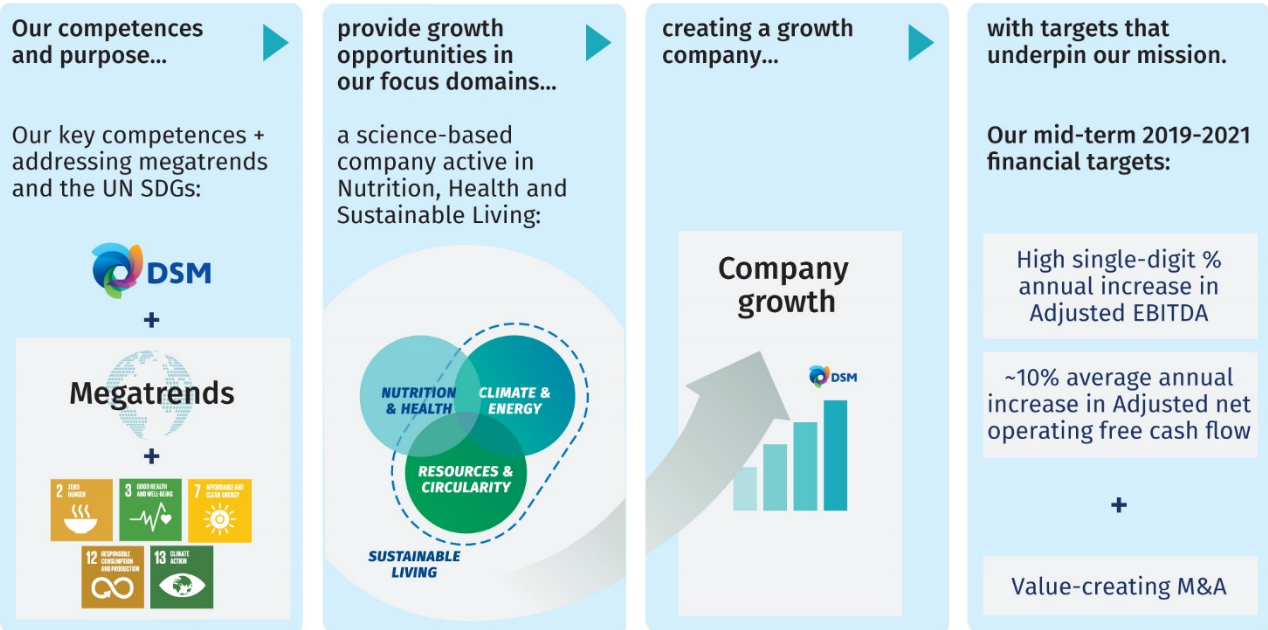
Like many of our employees around the world, our senior management had to rely heavily on online communication as a result of the COVID-19 pandemic. This is how the vast majority of the DSM Executive Committee meetings took place in 2020 (clockwise from top left): Dimitri de Vreeze, Philip Eykerman, Geraldine Matchett, Chris Goppelsroeder, Helen Mets, Patricia Malarkey and Cristina Monteiro.

Strategy

At a glance

- +19% Adjusted net operating free cash flow growth versus 2019 and versus an average annual target of ~10%
- -1% Adjusted EBITDA from continuing operations versus 2019, with Nutrition +7% and Materials -27%
- 20% Innovation sales (continuing operations), in line with our ambition of ~20%
- ~18%[1,2] GHG scope 1 + 2 reduction – cumulative structural improvement versus ~17% in 2019 (baseline 2016)
- 0.24 Frequency Index of Recordable Injuries versus 0.28 in 2019
- 76% Employee Engagement Index versus 74% in 2019

Long-term strategy



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. At the same time, we are increasing operational excellence, managing costs, and accelerating profit growth and cash generation. We will continue to make suitable acquisitions to strengthen and develop critical capabilities and to support organic growth, predominantly in Nutrition.

In Nutrition, we focus on human nutrition & health (specialty nutrition, nutritional ingredients, consumer-branded products, personalized nutrition), food & beverages (specialty food enzymes, cultures, probiotics, bio-preservation, hydrocolloids, sugar reduction, and savory taste solutions), personal care and aroma ingredients and animal nutrition & health (core vitamins, premix solutions, and specialty feed additive solutions, including mycotoxin risk management solutions and diagnostics).

1 All data presented in People and Planet are subject to the non-financial reporting policy.
2 In total, our absolute reduction of scope 1 + 2 greenhouse gas emissions was 25% versus the 2016 baseline.

In **Materials**, we will further develop into a resilient higher-growth, high-margin specialty business, and focus on three Sustainable Living growth-platforms Improved Health & Living, Green Products & Applications, and New Mobility & Connectivity.

By *improving* the impact of our own operations, *enabling* sustainable solutions for our customers, and *advocating* sustainable business models, we make a positive contribution toward achieving the **Sustainable Development Goals** while at the same time supporting our growth and profitability and improving our risk profile.

Mid-term targets and ambitions

We have set two ambitious targets for profit growth and cash generation to drive **value creation** for the period 2019–2021:

- A high single-digit percentage annual increase in Adjusted EBITDA
- An average annual increase of about 10% in Adjusted net operating free cash flow

We are committed to mid-single-digit **organic sales growth**. Key drivers to deliver this sustained growth are innovation, commercial synergies from our recent acquisitions on top of our underlying market growth, and the expansion of our customer-centric solution offerings.

We will continue to leverage our **unique technology platforms** to develop innovative and sustainable solutions in Nutrition & Health, Climate & Energy, and Resources & Circularity. We aim for 20% of our annual sales to come from innovation.

The following table describes our mid-term **2019–2021 financial targets** and the ambitions that underpin them:

2021 targets [1]	Ambitions underpinning our targets [1]	
High single-digit percentage annual Adjusted EBITDA increase ~10% average annual Adjusted net operating free cash flow[2] increase	1. Sales	Mid single-digit % organic sales growth Total DSM, Nutrition and Materials
	2. Adjusted EBITDA margin	Nutrition: >20% Materials: >20%
	3. Working capital	Reduce by 50 bps annually to ~16%
	4. Capex	~6.5% of sales
	5. ROCE	~1%-point increase per annum
	6. Adjusted EPS	Increase ahead of Adjusted EBITDA growth

1 Based on 2018 underlying business defined as Sales and Adjusted EBITDA corrected for our best estimate of the temporary vitamin effect.

2 Adjusted net operating free cash flow is the cash flow from operating activities, corrected for the cash flow of the APM adjustments, minus the cash flow of capital expenditure and drawing rights.

Our **cash allocation policy** remains unchanged and has a clear order of priority for cash deployment:

- Disciplined capital expenditure for organic growth: approximately 6.5% of annual sales
- A stable, preferably rising dividend
- Disciplined M&A, predominantly in Nutrition
- In the absence of value-creating M&A, capital to be returned to shareholders

We remain committed to maintaining a strong, investment-grade credit rating. With our **dividend policy** of a stable, preferably rising dividend, we target an average payout of 40–50% of adjusted earnings.

We will target **M&A** predominantly in Nutrition, given this business's unique growth potential, resilience, strong leadership position and capacity for value creation.

Focus Domains

With our unique science-based competences, we have created a **strong platform for growth** and are ideally positioned to capture the growth opportunities offered by the global megatrends and Sustainable Development Goals (SDGs). In particular, we focus on developing innovative solutions centered on Nutrition & Health, Climate & Energy, and Resources & Circularity.

Nutrition & Health

The link between **adequate nutrition** and health has never been clearer. Diet-related non-communicable diseases (including diabetes, heart disease, stroke, and some cancers) have overtaken communicable diseases as the primary cause of deaths worldwide. At the same time, **malnutrition** in its various forms affects more than 30% of the world's population: more than 2.3 billion adults and children are obese or overweight[1], more than 820 million people go to bed hungry each night, and approximately two billion suffer from hidden hunger[2].

With the world's growing and ageing population, the costs of healthcare systems as we know them today are becoming increasingly unsustainable for developed and developing countries alike.

Furthermore, the animal protein industry, which produces the animal-source foods critical for a healthy and balanced diet, is increasingly challenged to reduce its impact on the environment and to improve animal welfare, while at the same time driving down production costs.

Individuals and societies need solutions that offer preventive and sustainable **'health through nutrition'**, as well as solutions that enable the creation of an animal protein supply that can feed the world within planetary boundaries.

The COVID-19 health crisis throws all of these needs into yet sharper focus.

Climate & Energy

The stability of the world's climate is under threat. We have long believed there is an urgent need to take action to **curb climate change** and its irreversibly damaging effects by significantly limiting greenhouse gas emissions, transitioning to renewable energy, and adopting low-carbon emission solutions and processes. Partly as a result of the pandemic crisis in 2020, there is also an increasing realization that food systems and the climate crisis are intimately intertwined. Not only are food systems responsible for approximately a quarter of all global emissions[3], it is also the sector of the economy that will be affected the quickest everywhere. We are seeing already today the catastrophic impact of climate change on food production in many countries, leading to increased hunger and social instability, and this will only increase. Yet many innovations exist that can meaningfully reduce the climate impact of food production, and these need to be scaled in an equitable way for both the farmers and consumers.

The transition to a **low-carbon economy** will also create business opportunities and drive growth for our innovative and sustainable solutions. We are enabling the development of a low-carbon economy not just by reducing our own emissions but also by developing solutions to help customers and consumers to cut theirs.

Resources & Circularity

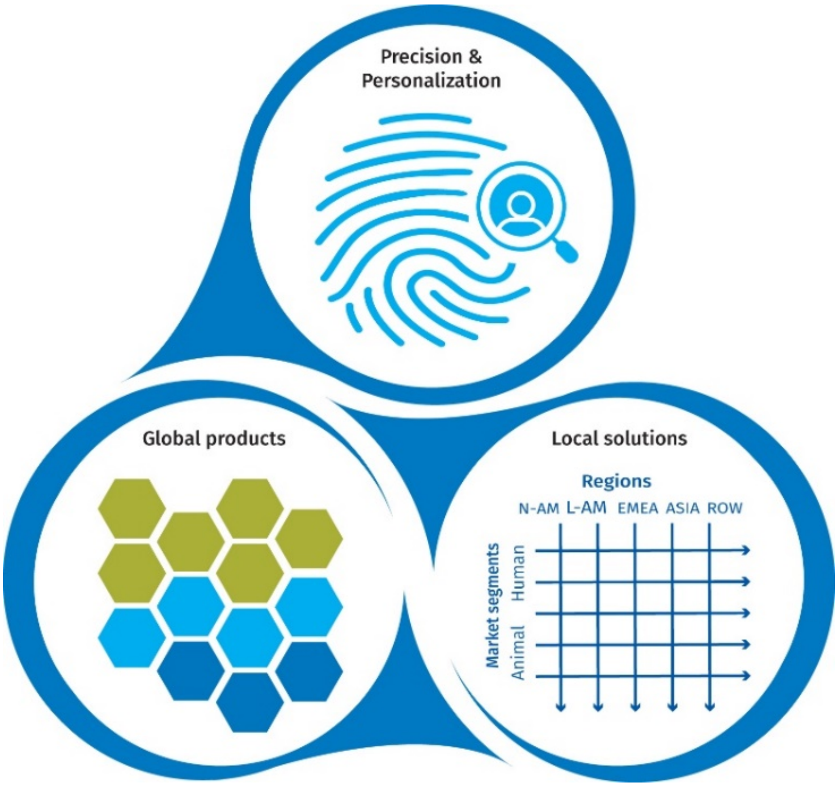
The world's resources are finite, and with a population projected to grow to 9.7 billion people by 2050[4], some estimates suggest we will need the equivalent of four Planet Earths by then to sustain our current lifestyles. In addition, over 30% of all food produced is currently either lost or wasted, representing a huge drain on natural resources[5]. New ways of achieving a balance between demand and supply have to be found, including approaches that are not based on single use and subsequent disposal. We are making important contributions to the development of a genuinely **circular, bio-based economy** founded on closed-loop solutions.

1 Source: IFPRI
2 Source: FAO
3 Source: IPCC report 2019
4 Source: UN
5 Source: *Good Nutrition: Perspectives for the 21st Century*. Eggersdorfer M. et al. Karger, Basel 2016

Nutrition strategy

Nutrition & Health builds on our unique 'global products, local solutions' business model. Our Nutrition & Health strategy focuses on strengthening and expanding this business model by further building our global products portfolio and advancing our solution-selling capabilities in our end-market-focused segments. In addition, developments in biosciences and the broad adoption of digital ways of life are opening new opportunities to add a third area of innovation-based growth to our business model in Precision & Personalization, a rapidly emerging market, in both Human and Animal Nutrition & Health. Overall, Nutrition & Health aims to mid-single-digit organic sales growth, an Adjusted EBITDA margin greater than 20%, and a high-single digit Adjusted EBITDA growth percentage.

Our business model for growth: global products, local solutions, Precision & Personalization



The basis: our unique and successful business model – global products, local solutions

With this business model, we have successfully built a unique, broad, highly integrated and profitable growth business that covers the food & beverages, specialty nutrition, animal feed and personal care end-markets. Our results are testament to the strength and uniqueness of this business model, delivering 6% organic growth and an increase in Adjusted EBITDA margin from 17% to 21 % during the period 2015–2020.

Our global product portfolio, which includes vitamins, nutritional lipids, carotenoids, minerals, eubiotics, enzymes and yeasts, as well as texturants, flavors and cultures, has expanded through innovation and acquisitions. Most recent additions have been human milk oligosaccharides (HMOs) through the Glycom acquisition and mycotoxin absorbers and eubiotics through the acquisition of Erber Group. Bovaer® and our partnerships Avansya and Veramaris have been added through our own innovation efforts.

Our end-market focus across all regions allows us to better understand market needs, enable solution selling, and open up innovation headroom – for example, more relevant solutions supporting early life nutrition and dietary supplements in Human Nutrition & Health and supporting species such as poultry and swine in Animal Nutrition & Health. These capabilities are complemented by a diverse and significant premix footprint, with superior formulations and delivery systems, meeting local needs for our customers.

Expanding our business model: Precision & Personalization

Consumer and customer-driven 'Precision & Personalization' in the domains of both Human Nutrition & Health and Animal Nutrition & Health is where we will expand our business model. Developments in data science & bioscience are opening up exciting new opportunities to address challenges in health and nutrition. Rapid advances in computational biology, gene technology, Artificial Intelligence and diagnostics are transforming our ability to understand and influence the interplay between health, nutrition and the environment in both human and animal biology at an individual level.

We see 'Precision' as a rapidly emerging market in its own right, enabling our customers to meet consumer demand for better health through improved diets and at the same time to produce food more sustainably, particularly in the animal space. We are well positioned to take a leading role in this development. We are an established authority in the field of nutritional science and biotechnology, and through our trusted company brand we have access to customers for and with whom we are already developing emerging Precision & Personalization solutions. This development also involves a natural evolution from delivering customized premixes to enabling the creation of personalized nutritional mixes. Building on these unique strengths, we will seek to work with an ecosystem of partners to create the appropriate digital solutions and interfaces. Offering leading solutions in this space allows us to leverage our unique nutritional science capabilities and multiply the relevance of our ingredients through unprecedented precision. A good example is our new US-based personalized nutrition venture, Hologram Sciences, Inc., which brings together all the necessary capabilities to develop end-to-end turnkey personalized nutrition solutions that are commercially validated with consumers.

Our focus in Animal Nutrition & Health

Operating in alignment with the UN's Sustainable Development Goals 2 (Zero Hunger), 3 (Good Health and Well-Being), 12 (Responsible Consumption and Production), 13 (Climate Action), and 14 (Life Below Water), we have identified six sustainability platforms that address the major challenges facing the animal farming industry today. Our ambition is to lead a robust and achievable transformation worldwide, delivering innovative and sustainable solutions that will deliver significant value for our customers and at the same time for our company. These are:

- Improving the lifetime performance of farm animals
- Making efficient use of natural resources
- Reducing emissions from livestock
- Helping tackle antimicrobial resistance
- Reducing reliance on marine resources
- Improving the nutritional quality of meat, milk, fish and eggs, while reducing food loss and waste

With examples such as algal-based omega-3 for fish feed (Veramaris®), methane-reducing feed additives for cows (Bovaer®), mycotoxin risk management and our eubiotics portfolio, we are in the front line to address these challenges.

In addition, we continue to build specialist competences to pursue new health solutions and support additional species, improve the end-to-end experience for the customer, and invest in our direct business-to-farmer and overall go-to-market capabilities.

Our focus in Human Nutrition & Health

In Human Nutrition & Health, we will continue to develop from the role of ingredient supplier to that of a fully integrated provider of solutions. We combine our products with third-party ingredients to create specialty solutions for our customers that deliver specific health benefit claims, allowing our customers to focus fully on the branding and commercialization of their products. Key focus areas are:

Preventive health and immunity. COVID-19 has alerted the world to the importance of preventive health and especially immunity. Micronutrients – such as vitamins C and D, omega-3s and probiotics, where we have leading positions – play a key role in supporting immunity. We are building on this consumer need by launching market-ready solutions such as AMPLI D. Furthermore, we are continuing to invest in the business-to-consumer market to ensure the growth of our i-Health business.

Human milk oligosaccharides (HMOs). We are building an exciting innovation roadmap for next-generation HMOs to meet currently unmet needs in early life nutrition, dietary supplements, medical nutrition (e.g., to combat irritable bowel syndrome), and food & beverages. HMOs also have interesting potential applications in pet foods, and these are being explored within the framework of our Animal Nutrition & Health business.

Personalized nutrition: Personalized nutrition is developing rapidly and has the potential to become very significant. We have the building-blocks needed to provide science-based personalized nutrition. With the creation of the wholly owned venture Hologram Sciences, Inc., we aim to develop, and validate with consumers, integrated personalized nutrition solutions for our customers. The stand-alone set-up is designed to ensure agility and speed, while the arm's-length link to DSM allows to leverage DSM's access to market. Hologram Sciences, Inc. will work closely with leading start-ups in which we have already invested, such as Mixfit, Tespo and AVA.

In addition, we are continuing our long-term commitment to champion efforts to increase the availability of micronutrient-rich food in countries with very low-income populations through various partnerships, such as with WFP, UNICEF and Africa Improved Foods (AIF).

We are also championing the purpose behind our products, which help address some of world's greatest nutritional challenges. Furthermore, we continue to sharpen our focus on customer-centricity and commercial excellence.

Our focus in Food & Beverages

The Food & Beverage market is subject to rapid change, driven by evolving consumer needs. The challenge for our customers, the food & beverage producers, is to anticipate these changes and respond by developing and delivering on-trend, differentiating products faster than their competitors. Our customers are therefore seeking:

- Products that deliver specific taste and texture attributes
- Products that deliver improved nutritional value and the associated health benefits
- Approaches that deliver more resource-efficient and sustainable food production

In the Food & Beverage market, we are uniquely positioned to offer solutions that address health, taste and texture in an integrated way, with our:

- Unique and extensive portfolio of global products, ranging from dairy cultures and enzymes for applications across dairy, baking and beverages; coatings and preservation systems; yeast extracts and process flavors and texturizing hydrocolloids; to our vitamins, minerals and nutritional lipids
- Deep expertise in application in our core end-market segments

To strengthen this unique proposition in food & beverages, we will continue to:

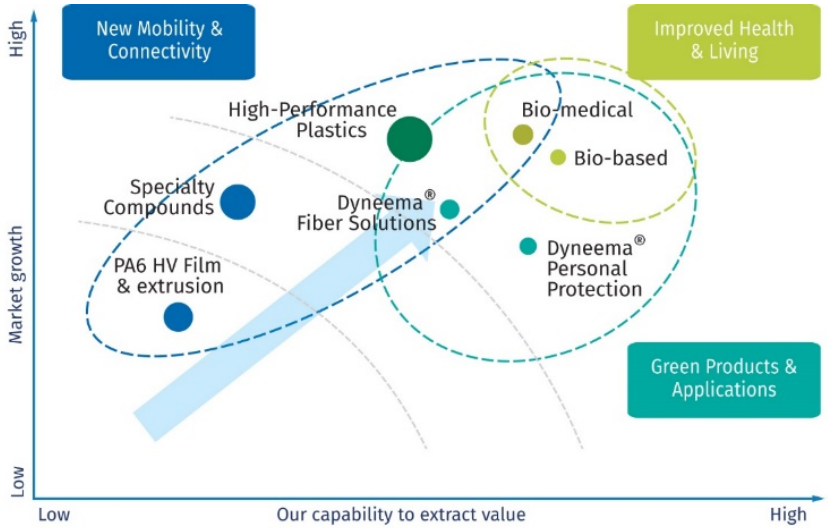
- Deepen our integrated application know-how
- Broaden our global product portfolio
- Combine ingredient and application innovation
- Maximize opportunities for inorganic growth

An example of our ingredient and application innovation is CanolaPRO™, a sustainable plant-based protein source. This is a new building- block in our solutions offering for meat alternatives and dairy alternatives. Avansya, our partnership with Cargill to bring zero-calorie, cost-effective, non-artificial sweeteners to market at scale, is another such example of product innovation.

Materials strategy

Following the announcement of the sale of our Resins & Functional materials businesses to Covestro AG, our Materials activities now consist of DSM Engineering Materials and DSM Protective Materials. These businesses generated sales of approximately €1.5 billion in 2020, have a strong growth and earnings potential, and are positioned to deliver growth in the strategic area of Sustainable Living. We will continue to develop the Materials business into a more resilient, higher-growth, and high-margin specialty business. Focusing on three Sustainable Living growth platforms – Improved Health & Living, Green Products & Applications, and New Mobility & Connectivity – we aim for mid-single-digit organic sales growth, an Adjusted EBITDA margin greater than 20% and a high single-digit Adjusted EBITDA growth percentage.

Focus on three growth platforms



Our Materials platforms will capture more opportunities in Sustainable Living, propelled by the following growth drivers: winning segments, substitution, innovation and sustainability.

In Improved Health & Living, we are focusing in particular on the growing demand for healthcare, personal protective equipment and medical applications such as specialty materials for medical gowns, respiratory tubes and stents.

In Green Products & Applications, we are focusing on the increasing demand for bio-based, recycled-based, and fully recyclable solutions. The launch of bio-based Dyneema® in 2020 is a good example.

In New Mobility & Connectivity, we are targeting the transition from fossil fuel to electric automotive power and hydrogen-fueled cars. An example is our specialty material Xytron® PPS for high performance fuel cells. We are also addressing the growing need for materials that enable autonomous driving and the increased connectivity between products, devices and applications.

Innovation strategy

Innovation is what transforms our 'Bright Science' into 'Brighter Living'. We aim to develop innovative, sustainable solutions by leveraging our unique scientific competences and our profound understanding of:

- The science behind nutrition, and the capability to develop new nutritional ingredients with proven health benefits, supported by our state-of-the-art Biotechnology Centers, providing sustainable alternatives for chemical synthesis, as well as plant- and animal-derived ingredients
- Materials science and the capability to convert this into Sustainable Living applications, supported by access to global state-of-the art laboratories

Our sales growth is driven by our ability to continually deliver innovative and improved products and solutions to meet our customers' needs. Our innovations reflect our commitment to healthier and more sustainable outcomes and so help drive the performance of our **Brighter Living Solutions portfolio**.

Innovation sales have also improved our profitability, delivering higher margins than the average of our running business. Our innovation sales are defined as products and applications that have been introduced over the past five years. We aspire to maintain the contribution made by these sales at around 20% of total sales, which we consider to be a healthy proportion in view of the overall balance of our product portfolio and product life cycles. We will continue to invest in differentiating science and technology.

Driving the innovation pipeline through seven growth themes

We are adapting our innovation approach from being project-based to platform-based to deliver a business-anchored pipeline of innovations that is aligned with our future strategic needs and supports our growth ambitions. We have identified **seven overarching growth themes** that capture the major global societal, technological and environmental trends that inform our innovation platforms. In Nutrition & Health, we focus on four growth themes: Pathways, Proteins, Prevention and Precision. In Sustainable Living, we focus on three growth themes: Improved Health & Living. Green Products & Applications and New Mobility & Connectivity.

Innovation growth themes

Nutrition

Pathways Sustainable ingredient manufacturing	• Bio-based Vitamins & Carotenoids • Sustainable Lipids
Proteins Driving adoption of sustainable proteins to feed the population	• Sustainable Food Proteins • Low-footprint Feed Proteins • Animal Emission Reduction
Prevention Healthy solutions provided by nature	• Healthy Gut • Immunity • Sugar Reduction • Cultures Powerhouse • Pharmaceutical Nutrition • Personal Care • Animal Gut Health
Precision Digitally-enabled business models	• Personalized Nutrition • Animal Precision Nutrition

Materials

Improved Health & Living	• Personal and Protection • Consumer Goods • Medical
Green Products & Applications	• Marine • Packaging
New Mobility & Connectivity	• Automotive • Electronics • Electrical

This move from individual projects to **innovation platforms** provides focus, and links our existing portfolio with our future pipeline. When we look ahead to 2025 and beyond, our success will not be dependent on several large projects only. Instead, each innovation platform will have a clear pipeline of multiple projects at different stages of maturity.

In **Nutrition & Health**, we focus on four growth themes: Pathways, Proteins, Prevention and Precision.

- **Pathways:** using our base strength in chemistry and biotechnology to manufacture ingredients with a better environmental footprint. Through our strengths and advances in biotechnology we can look to microorganisms to produce ingredients and intermediates; for example, the innovation platform of Sustainable Lipids, which includes algal-based omega-3 Veramaris® for more sustainable aquaculture
- **Proteins:** solutions that reduce the footprint of animal proteins and meet the growing demand for meat and dairy alternatives; for example, the Animal Emission Reduction platform, which includes our feed additive Bovaer®, which significantly reduces methane emissions from cattle, and plant-based specialty proteins such as CanolaPro™
- **Prevention:** using our rich portfolio of active ingredients (e.g. vitamins, lipids, HMOs) which all exist in nature to optimize health and immunity. For example, as we learn more about how our ingredients modulate the gut microbiome, we see potential to develop solutions that build resilience to stress and disease in people and animals. In the Animal Gut Health platform, for example, we have a full range of antibiotic alternatives that promote animal health while tackling anti-microbial resistance (AMR)

- **Precision:** digitally enabled new business models to enhance nutrition precision, ensuring the right nutrition to maximize health for individual humans and animals; an example is our personalized nutrition platform, delivered through Hologram Sciences, Inc., which provides nutrition and coaching recommendations

In **Sustainable Living**, we focus on three growth themes: Improved Health & Living, Green Products & Applications and New Mobility & Connectivity as described in the Materials strategy section.

Enabling programs for accelerated growth

Our enabling programs will underpin and facilitate our ambitions by **focusing on key areas** such as a performance-driven organization, leadership and people, culture, powered by digital and sustainability leadership across DSM.

Organization, leadership and people, and culture

We continue to develop our organization, leadership and people, and culture to enable continued performance. The extraordinary circumstances of 2020 – new leadership at the top; a pandemic disrupting our views about work, workplace and workforce; and a continued company transformation – called for a new People & Organization (P&O) strategy, The new P&O strategy is both a continuation and an evolution of our current strategy, with a focus on 'Creating a Flotilla Organization', 'Empowering Our Employees', 'Creating a Contemporary Workplace', and 'Resetting the Context for Leadership' – all anchored in our **DSM Culture Compass**.

Powered by digital

The 5 key digital shifts taking place in the world around us are leveraged and scaled across our organization to solidify and optimize our core business but also to create new value streams:

- Building the right **partnerships and ecosystems** at scale to go beyond current business models; for example, personalized nutrition
- Using **data and insights** at scale in all functional domains to enlighten decision-making and boost top and bottom line
- Intensifying **automation**, eliminating all routine tasks, thus allowing the simplification of operating models and the acceleration of key processes
- Becoming **truly agile**, moving from a traditional waterfall organization to cross-functional teams empowered to take integrated decisions and operating in an iterative and adaptative manner
- Preparing for a **future workforce** that is fully digitally oriented and possesses advanced digital skills

Sustainability leadership

Sustainability is not only our core value and a key responsibility, it is increasingly an important **business growth driver** at DSM that is fully embedded in our strategy. By improving the impact of our own operations, enabling sustainable solutions for our customers and advocating sustainable business, we make a positive contribution toward achieving the Sustainable Development Goals. For more details on our initiatives and progress, see People and Planet and Our approach to the Sustainable Development Goals.

Report on progress in 2020

Our **strategy** served us very well in 2020. It helped us to set our priorities in order to drive organic growth, especially in view of the rapidly changing circumstances brought about by the COVID-19 pandemic. It also helped us make the right capital allocation choices, including the selection of acquisition targets and the development of our nutrition portfolio, where appropriate.

Highlights:

- We completed the integration of two acquisitions (CSK and Glycom), and started the integration of Erber Group into DSM.
- These three acquisitions valued together at €1.7 billion further strengthen our ‘global products, local solutions’ business model as well as the Precision part of our business model by acquiring Romer Labs as part of the acquisition of Erber Group.
- We announced the divestment of our Resins & Functional Materials and associated businesses
- We executed two change programs, ‘Agility to Grow’ in Materials and ‘Fit for Growth’ in DSM Nutritional Products, to support profitable growth through process simplification and improved alignment with market needs
- Enhanced our platform-based approach to driving innovation, ensuring a healthy pipeline of new products and solutions
- Delivered against our purpose-led sustainability ambitions in people and planet

Progress in Sustainability: People and Planet

At DSM, sustainability is not only our core value and a key responsibility it is also an important business driver that is fully engrained in our purpose, strategy, business and operations. Our approach for bringing about positive change is to improve, enable and advocate. See below an overview of our progress on our key sustainability metrics:

	GHG structural improvement (vs. 2016)	Energy efficiency improvement year-on-year	Purchased renewable electricity	Employee engagement favorable score	Safety Frequency Recordable Index	Female executives	Brighter Living Solutions
2020 Realization[1]	~18%[2]	5.7%	60%	76%	0.24	21%	63%[3]
2021 / 2030 Ambitions	30% by 2030 (vs. 2016)	>1% average annually till 2030	75% by 2030	>75% by 2021	<0.25 by 2021	25% by 2021	>65% by 2021

1 These data are subject to the non-financial reporting policy.

2 We estimate that the effect of the underlying cumulative structural improvements in absolute GHG emissions was approximately 18% in 2020, versus the 2016 baseline. The total cumulative absolute reduction was 25%, versus the 2016 baseline.

3 For a small percentage of sales (<0.6 % of sales) classified as Brighter Living Solutions, the environmental impact is considered ‘best in class’ together with other solutions

We have leading positions in important ESG indices for investors: we hold a platinum sustainability medal from EcoVadis putting us in the top 1% of our industry, we are already ranked first out of 120 companies in our industry by Sustainalytics, have an AAA rating from MSCI, have Prime Status with ISS-ESG, and have a leading position in the rankings of Vigeo Eiris.

Planet

We further improved the environmental impact of our own operations and are well on track with respect to our greenhouse gas (GHG) reduction, energy efficiency and purchased renewable electricity targets.:

- The underlying structural improvement in absolute greenhouse gas reduction from operations in 2020 compared to the 2016 baseline is ~18%, versus our target of 30% by 2030
- Energy efficiency has improved by 5.7% compared to full year 2019 versus our >1% average annual ambition.
- 60% of purchased electricity came from renewable resources compared with 50% in 2019, firmly on course to achieve our interim target of 75% by 2030 in the pursuit of 100%

This progress supports our commitment to a long-term pathway to work toward net-zero GHG emissions across our operations and value chains by 2050. We are also proud to be globally recognized for our leadership in Sustainability. Our climate change strategy received an A rating and an A- for our water stewardship from CDP, the global non-profit environmental disclosure platform.

We **enabled** our customers to deliver more **sustainable solutions** to their (end) consumers focusing on the domains of Nutrition & Health, Climate & Energy, and Resources & Circularity. Our purpose-led innovation pipeline is fully aligned with our five focus SDGs. We launched a new strategic initiative to lead a robust transformation in sustainable animal protein production worldwide, and we unveiled our 'Products with Purpose' brand strategy in human nutrition. We halved the carbon footprint of Akulon® PA6, one of our key thermoplastic material products, and introduced bio-based Dyneema®.

More about our environmental performance can be found in the Planet section.

People

As the pandemic unfolded in 2020, taking care of our people became more important than ever. The resilience, engagement and care demonstrated by all of our employees has humbled us this year. We undertook a wide range of initiatives designed to support the physical, mental and emotional **wellbeing of our people**. In addition, we continued to work on safety and the engagement of our employees and to champion inclusion and diversity.

In terms of metrics we further improved the **Frequency Index of DSM Recordable Injuries** to 0.24 from 0.28 in 2019, achieving our target level of 0.25. We continue to strive to make our company fully incident- and injury-free. It was also pleasing to see that in such a challenging year we had a notable increase in **Employee Engagement** results (from 74% to 76%). On **Inclusion & Diversity**, we have made some progress on gender, with an Executive Committee ratio of 57% female, a Supervisory Board ratio of 42% female, a ratio of 21% female executives and under-represented nationalities ratio on executive level (30%). In 2020, we have broadened our continued journey to include pillars on generations, disability and LGBTQ+, with all five pillars being supported by highly engaged employee resource groups including: Rainbow Group, supporting LGBTQ+ colleagues; the Valuable group, supporting colleagues with disabilities; and the Black Employee Network at DSM called BLEND.

In terms of **Organization, Leadership and Culture**, we took the first implementation steps for the new P&O strategy at the end of 2020: we invested in our unique culture, with the launch of our Culture Compass, we piloted a new technology for career development, and launched a Hybrid Workplace concept for our 'Next Normal' way of working.

More information can be found in the People section.

Brighter Living Solutions

In 2020, 63% of our total group sales (continuing and discontinued operations) came from products that have a better environmental (ECO+) and/or social (People+) impact than mainstream solutions. We call these our **Brighter Living Solutions**. In 2020 we were able to qualify several additional solutions. This increase was offset by the disqualification of two significant solutions as part of our annual review process. These disqualifications were the result of an improved mainstream reference and changed supplier impacts. To better measure the sustainability impact of our product portfolio, we trialed a new methodology aimed at increased transparency and granularity. The approach was developed in 2019 and trialed in 2020. The methodology will be further refined in 2021 based on the feedback from the trials.

Progress in Digitization & Digitalization

With 157 bots automating numerous processes and more than 50 data analytics use cases implemented, we have created a solid basis to scale the benefits of **advanced analytics and automation**. The pandemic required us to accelerate the adoption of digital tools and practices among our workforce and laid down the key principles of new ways of working that will thrive in the 'Next Normal'. We piloted with success our digital mindset change program in Latin America and China by inviting employees to learn, ideate and try out digital approaches more and more often. In the second part of the year, we combined the Nutrition strategy with digital imperatives to form an integrated transformation program that will shape, over the coming years, the digital Nutrition of tomorrow.

Strategic priorities and key path forward

We are committed to deliver against current performance expectations. This means that we are focused on delivering growth, through being the partner of choice for our customers, bringing our innovations to market, and successfully integrating our recent acquisitions. At the same time, we will be building the company for the future. This also entails building new business models by scaling our capabilities in digital & bioscience and M&A. We will create a stronger brand focus on Health through Nutrition. Additionally, we will ensure we have the right organizational culture to embrace this next phase. All of this will require, as always, further adjustments to our organization – starting with the carve-out of our Resins & Performance Materials businesses

Strategic priorities

Deliver on current performance expectations....

1. Maintain strong purpose led performance and be partner of choice for customers
2. Deliver on innovation promise
3. Synergize recent M&A

...AND build the company of the future!

4. Build our future business model through digital & bioscience and M&A
5. Stronger branding focus on *Health through Nutrition*
6. People & Culture: flotilla organization

7. Align the organization to future needs

Case studies

Making animal farming more sustainable

If we hope to feed, sustainably and responsibly, the 9.7 billion[1] people who are expected to share our planet by 2050, the time to change is now. While plant-based proteins show increasing potential for helping to meet this need in a sustainable manner, they are not sufficient to fulfill it completely, and animal-based proteins retain an essential role in meeting global dietary requirements. We see many opportunities to improve and are therefore helping to make animal farming more sustainable so we can bring better food, nutrition and health to all, within planetary boundaries.

The need for sustainable animal protein production

Animal-based proteins are highly nutritious and form a key part of a balanced, healthy diet. Their consumption is also central to many cultures, and animal-source foods and other animal-source products play an important socio-economic role in those cultures.

However, rising demand for animal protein is driving up greenhouse gas emissions and piling pressure on natural resources. The sustainability of mainstream animal production is consequently coming under increasing scrutiny from the value chain, policy makers and associated stakeholders.

Continuing to operate as we have done in the past is not an option. All players involved in the production of animal protein need to be aware of the challenges we are facing. We must work together to solve them – applying new thinking, new technologies, and new business models in order to create a more sustainable industry for the whole planet.

Our solutions

We embed sustainability as a business driver and enable our customers and partners to deliver sustainable and healthy solutions for the planet and society. We are building a sustainable future in six key areas:

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1 Source: UN

- Improving the lifetime performance of farm animals
- Making efficient use of natural resources
- Reducing emissions from livestock
- Helping tackle antimicrobial resistance
- Reducing our reliance on marine resources
- Improving the nutritional quality of meat, milk, fish and eggs, while reducing food loss and waste

Our innovative science-based solutions enhance the animal nutrition value chain at every stage. This involves enabling farmers to develop practices that are both sustainable and economically viable. Here we highlight our contribution to one of these: reducing emissions from livestock.

Our impact: Reducing emissions from livestock

Creating a low-emissions future for animal farming

Animal farming accounts for 14.5% of all human-derived greenhouse gas (GHG) emissions. This figure is set to rise as demand for animal-source foods increases. It needs to be reduced rapidly to limit the rise in global temperatures to 1.5°C by 2050. The main sources of these emissions relate to animal feed, followed by methane naturally produced by cows, and then again by methane plus nitrous oxide emissions from manure.

Reducing emissions through nutrition

Reducing emissions entails, among other things, changes to farm infrastructures and husbandry practices, but improvements in nutrition are of pivotal importance. To be sustainable in the long term, animal farming has to reduce the emissions it produces, cutting levels of methane, nitrous oxide and ammonia, which drive up global warming and negatively impact biodiversity and water quality. Our innovative nutritional solutions targeting these emissions are Bovaer® (which reduces methane emissions from ruminants by at least 30%), VevoVitall® (which reduces ammonia emissions by up to 18% in swine), and our protease feed enzymes such as ProAct (to improve protein feed protein utilization in poultry and subsequently reduce nitrogen emissions to the environment).

Reducing nitrogen emissions with ProAct

ProAct increases the amount of digestible protein in feed, making it possible to reduce the overall protein content of feed. It improves the digestibility of proteins, thereby reducing nitrogen emissions to the environment by up to 17%.

ProAct reduces
nitrogen emissions
BY UP TO 17%
by improving
digestibility of proteins

ProAct also enables the use of more diverse feed raw materials and facilitates **greater flexibility** in feed formulation, reducing our reliance on soy and thereby helping to cut deforestation for soy cultivation. This equates to an average reduction of 8% (25kg) in the amount of soybean meal required per ton of broiler feed. If ProAct were to be used globally in broiler diets, it would permit the replacement of 7.2 million tons of soybean meal annually, corresponding to 9.0 million tons of soy, thereby reducing deforestation by 3.1 million hectares a year.

Effective measurement is essential to this undertaking, and so we have been developing an advanced sustainability service that enables farmers to see their own **environmental footprint** in its entirety and understand where changes need to be made for improvement. This service is backed up by science-based, cost-effective solutions to make the improvements a reality. Creating this transparency gives farmers options for reducing their emissions, differentiating themselves from less sustainable competitors and unlocking the real value of sustainable animal production.

Stronger together

We work closely with our customers and other partners in the **value chain** to make sustainable animal farming possible, and are always looking for ways to increase our positive impact together. For several years now, we have been helping our customers to calculate their carbon footprint (GHG emissions), working with them to reduce it over time by means of practical, proven nutritional solutions to ensure they reach their emissions reduction targets.

We have recently developed a new **Animal Protein Sustainability Service** (APS Service), which will allow us to holistically evaluate the full environmental footprint of our customers' animal protein production operations. The APS Service uses highly advanced Life Cycle Assessment (LCA) tools, modeling and benchmarking to produce a powerful business diagnostic for animal protein producers: a large footprint is often associated with inefficiencies in the farming system, and eliminating these can allow the farmer to capture financial value while reducing the farm's environmental footprint.

How we support the SDGs

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Our products contribute to delivering animal-source foods that are healthy, nutritious, affordable and sustainable by promoting animal health via targeted nutritional interventions.

SDG 3: Ensure healthy lives and promote well-being for all at all ages
By supporting the production of healthy, nutritious, affordable and sustainable animal-source foods, we improve the availability of protein, which is a critical macronutrient and an essential component of a balanced diet.

SDG 12: Ensure sustainable consumption and production patterns
Our products that increase the digestibility of feed help reduce the area of agricultural land needed to produce essential feed crops, giving farmers options for reducing their emissions and differentiating themselves from less sustainable competitors.

SDG 13: Take urgent action to combat climate change and its impacts
Our products that reduce the emissions to air, land and water that are associated with livestock production address climate change and its impacts.

Accelerating nutritional support for immunity

Worldwide problem

The global public health crisis triggered by COVID-19 has highlighted the need for easily accessible dietary solutions that support immune health. In 2020, our customers needed to go to market faster than ever before with reliable and effective formulations and applications, delivering different formats that could easily be integrated into consumers' dietary routines. With our end-to-end capabilities, such as customized premix solutions, regulatory support and Market-Ready Solutions, we succeeded in meeting this unprecedented need.

65%*

of people say that they are 'worried' or 'very worried' about their **immune status**

*DSM 2020 survey

Market insights confirm that immunity became a leading consumer health concern in 2020, with 65% of people saying that they were either 'worried' or 'very worried' about their immune status. The health benefits of micronutrients are widely understood by consumers today. Micronutrients, such as vitamins, dietary minerals, omega-3 fatty acids and specific probiotic strains, play an important role in supporting the body's immune system. Recent scientific evidence underpins the particular role of vitamin D in supporting immune health and strongly indicates a relationship between vitamin D status in the blood and the likelihood or severity of a COVID-19 diagnosis.

Travel restrictions, fewer in-person medical consultations and growing use of e-commerce channels consequently fueled consumer demand for **immunity self-care products**, as well as the need for assurance that existing dietary supplements of choice contained immunity-supporting ingredients.

In response to the outbreak of COVID-19, in 2020 33% of consumers took dietary supplements more frequently than before and 13% started taking them for the first time, immune health being their main motivator. The **dietary supplement market grew** by approximately 4.5% in 2020[1], whereby **COVID-19** was a key driver, and revealed that consumers are shifting their nutritional preferences in the direction of healthier choices.

33%*

of consumers took **dietary supplements** more frequently than before, in response to the **COVID-19 outbreak**

*DSM 2020 survey

Our customers needed to innovate to meet this rapidly growing demand, delivering innovations to market in record time in order to meet a **global public health need** and at the same time capture valuable commercial opportunities.

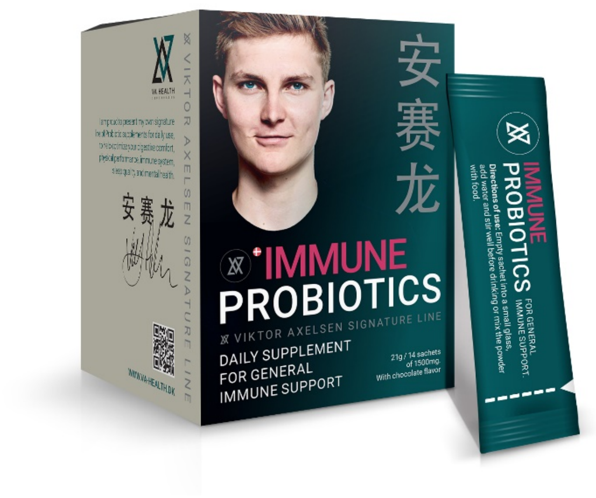
Our solution

Our **Market-Ready Solutions** capabilities extend from brand idea to creating the final product on the shelf. What made customers choose our Market-Ready Solutions was the need to go to market fast. We have the capacity and expertise to accompany the customer at every step of the product development process from market research and product ideation to post-launch support, whether in the supplement, medical nutrition, pharma or food & beverages markets.

Our products, customized solutions and expert services have enabled many of our customers across the world to launch new immunity-supporting products in record time during the COVID-19 pandemic, drawing on our **scientific expertise**, **high-quality ingredients** and **premix formulations**.

Stronger together

Viktor Axelsen (VA) Health was among many customers to benefit from our Market-Ready Solutions and launch a comprehensive dietary supplements product line, including an immunity solution, in 2020. Find more detail on how we helped him to in this video.



1 Source: Euromonitor International Limited 2020©

Like many of our customers, Korea Eundan benefited from our speed of response in 2020.

"Korea Eundan has continued to work with DSM to promote the immune benefits of vitamin C in a variety of ways," says YoungJo Cho, CEO of Korea Eundan. "Especially during the COVID-19 pandemic, a steady supply of vitamin C could have been difficult to sustain. Fortunately, DSM Korea's quick forecast of consumer demand and support from its headquarters enabled Korea Eundan to keep up its supply of products to the market without much strain, further raising consumer confidence. As we have built a mutually beneficial partnership, I sincerely look forward to working and growing together with DSM in the years to come."

Our impact

Consumer studies we conducted in 2020 indicate that consumers around the globe are increasingly taking proactive measures to optimize their **immune health**, and are seeking affordable, accessible and reliable nutritional solutions to do so. At the same time, the rising average age of the world's population creates a growing population group that is especially **vulnerable to infections**, as the COVID-19 public health crisis has shown.

We saw this need in 2020 and helped our customers in the dietary supplements, food & beverages, medical nutrition and pharma sectors to enhance their leading brands as well as deliver new Market-Ready Solutions at unprecedented speed. Our sales from **immunity-supporting ingredients** exceeded EUR 1 billion in 2020. Versus the previous year, we outperformed the dietary supplements market by growing 14% vs 4.5% market growth, in the medical nutrition market by 34% vs. average annual market growth of 6–8%[1], and in the pharma market by 13% vs. market growth of 2–5%[2].

How we support the SDGs

SDG 3: Ensuring healthy lives and promoting well-being for all at all ages.

Our efforts in helping our customers to quickly launch **effective immunity-supporting products**, our comprehensive market-shaping activities, and our endeavors to raise awareness of the role that nutritional solutions may play in supporting our immune system all support SDG3.

1 Source: 2014 Frost & Sullivan Global Medical Foods Market Forecast Report, United Nations, Department of Economic and Social Affairs, Population Division (2017)

2 Source: IQVIA Midas

Tastier, more nutritious plant-based choices

There is a growing demand for plant-based alternatives alongside traditional meat and dairy products, as consumers search for foods that deliver an authentic eating experience without compromising on taste and texture. At the same time, the importance of a quality **nutritional profile** is attracting increasing recognition. To meet this need, in 2020 we launched two new portfolios of **integrated solutions**, one supporting the production of plant-based meat alternatives and the other of dairy alternatives. These innovative solutions are backed up by our expert product positioning services, which draw on unrivalled nutrition science and regulatory expertise.

The quest for appealing alternatives to traditional meat and dairy products

The world's growing population calls for a rethinking of today's food systems if we are to ensure **healthy diets for all** within planetary boundaries. Intrinsic to this requirement is the challenge of being able to provide enough quality proteins in a fair manner. Climate and nutrition scientists alike advise increasing the proportion of plant-based products for more balanced diets in support of healthy lifestyles. Whether for personal, health or sustainability reasons, or from plain curiosity, more and more people are adding **plant-based options** to their food choices and are adopting flexitarian, vegetarian, or vegan diets.

Consumers are therefore increasingly looking for **appealing choices** alongside the meat and dairy products that form a key part of many traditional diets. A recent DSM study attested that taste is still the overriding criterion for consumers. In fact, 62% of consumers choose taste over everything else when it comes to food products, and plant-based alternatives are no exception. At the same time, nearly 85% of participants reported being aware that they are missing out on vitamins and minerals when following ‘elimination diets’.

85%*

of consumers reported being aware that they are missing out on **vitamins and minerals** when following ‘**elimination diets**’

*DSM 2020 survey

Food & beverage producers are thus faced with the challenge of developing alternative products for this market that offer a comparable experience and taste to the traditional products they replace. Increasingly, consumer and societal expectations are set to move beyond taste and texture, as awareness grows concerning the importance of a quality nutritional profile.

Our unique portfolio allows us to create solutions that deliver authentic taste, texture and mouthfeel along with a preferred nutritional profile, at the same time enabling producers to manage levels of salt, sugar and gluten.

Our solutions

In the field of meat alternatives, we offer a range of solutions that deliver authentic meaty taste and create succulent, appealing texture. At the same time, because our yeast extracts unlock full umami flavor, producers can reduce the amount of added salt in their recipes, improving the health appeal.

Our enzymes, hydrocolloids and taste modulation solutions, meanwhile, create the smooth mouthfeel and tailored sweetness necessary for appealing plant-based beverages. In dairy alternatives, our new Delvo®Plant enzyme range complements our portfolio of solutions including hydrocolloids and taste modulators that help manufacturers develop and market premium dairy alternatives. The Delvo®Plant range not only contributes to the desired texture, but can also unlock glucose and/or maltose from starch bases, enabling manufacturers to create healthier alternative beverages with zero or reduced added sugar, offering sweetness profiles that can be tailored to meet local preferences.

Our Quali® vitamins and premix solutions improve the desired nutritional value of both meat and dairy alternatives, alongside our life’s™OMEGA range of plant-based nutritional lipids.

These groundbreaking new portfolios will be complemented by CanolaPRO™, our unique protein based on non-genetically modified canola. Coming to market in 2022, CanolaPRO™ is ideal for a range of applications including meat and dairy alternatives, beverages, baked goods, bars, and ready-to-drink and ready-to-mix applications. CanolaPRO™ offers versatile texture benefits thanks to its solubility, also in combination with other proteins such as pea or fava, as well as being a nutritionally complete protein in its own right.

More information on our plant-based alternatives can be found here.

Our impact

The global plant-based product retail market value (meat alternatives and dairy alternatives) is set to jump from €21 billion in 2019 to ~€30 billion in 2024. However, the growing demand for plant-based products that meet today's evolving consumer expectations presents complex challenges for food & beverage manufacturers. With our comprehensive portfolio of solutions for plant-based meat and dairy alternatives, we can help food & beverage manufacturers deliver a specific sensory profile without compromising on health appeal, and our ingredients and know-how are already making many plant-based products in grocery-store chiller cabinets and well-known high-street chains tastier and more nutritious. Additional appealing choices help the food industry to sustainably meet the protein requirements of a growing population with new options alongside traditional products.

How we support the SDGs

SDG 12: Ensure sustainable consumption and production patterns.

With our unique portfolio of products for creating nutritious and delicious meat and dairy alternatives, we help ensure healthy lives and promote well-being for all ages while at the same time supporting sustainable consumption and production pattern.

Bio-based Dyneema® and the circular economy

In 2020, we introduced bio-based feedstock into the production of Dyneema®, the world's strongest fiber™. Dyneema® serves a wide range of applications, 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 cycle lifetime. Introducing bio-based feedstock allows us to reduce our use of fossil-based resources. Production of 1 metric ton of bio-based Dyneema® generates 5 metric tons less CO_2eq than the same volume of fossil-based Dyneema®.

Reducing our dependency on fossil-based resources

The linear economy is not sustainable. Every year, the human race is currently consuming 1.7 times the amount of resources that the earth can replenish. This ratio is projected to grow from 1.7 to 3 by 2050. In addition, feedstocks have a major impact on carbon footprint: to enable the **low-carbon economy** necessary for combating climate change, it is essential to transition away from fossil feedstocks.

Introducing bio-based feedstock allows us to reduce our dependency on fossil-based resources. Production of 1 metric ton of bio-based Dyneema® generates 5 metric tons less CO_2eq than the same volume of fossil-based Dyneema®. In addition, bio-based Dyneema® has the **lowest carbon footprint** per unit strength compared to other synthetic fibers. For example, compared to generic high-modulus polyethylene (HMPE) fibers, bio-based Dyneema® emits 29 metric tons less CO_2 per metric ton of fiber produced. This is the amount of CO_2 released by charging 3.7 million smartphones, or absorbed by growing 480 tree seedlings for 10 years.

Our solution

Customers, governments and end-users are increasingly demanding **renewable and bio-based** materials. The World Business Council for Sustainable Development (WBCSD) estimates that the economic opportunity for bio-based products to complement and/or replace conventional ones will be worth USD 7.7 trillion by 2030. Dyneema® is the first, and currently only, bio-based ultra-high-molecular-weight polyethylene (UHMWPE) fiber in the world. We aim for at least 60% of Dyneema® fiber feedstock to be bio-based by 2030.

Our impact

Through the **mass balancing** approach, bio-based Dyneema® fiber delivers the same consistent durability and performance, along with reduced environmental impact.

The fiber is certified according to the International Sustainability & Carbon Certification's globally recognized **ISCC Plus**, a certification system covering all sustainable feedstocks, including renewables. ISSC Plus certifies that the bio-based fiber originates from a transparent and traceable supply chain while guaranteeing that the amount of bio-based materials sold is not more than the amount sourced.

Stronger together

Bio-based Dyneema® is enhancing the **sustainability performance** of our customers, and of their customers in turn. Gleistein Ropes, an industrial company in Bremen (Germany) that has been manufacturing ropes since 1824, has switched its entire portfolio of products with Dyneema® to the bio-based offering.

Klaus Walther, Managing Director of Gleistein Ropes: "By completely switching our products made with Dyneema® to the new bio-based Dyneema® fibers, I anticipate that we will reduce our carbon footprint to the tune of around 1,000 mt CO_2eq in the first year alone, which is equivalent to taking more than 210 passenger cars off the roads. Importantly, our customers will continue to enjoy exactly the same extremely high levels of performance they are accustomed to from conventional Dyneema® fibers. Naturally, we are proud to be taking on the **pioneering role** of being the world's first textile rope manufacturer to use sustainable raw materials for its entire portfolio of products made with Dyneema®. But we also hope that more companies will follow our example and join us in making a real contribution to climate protection and sustainability in our industry."

How we support the SDGs

SDG 12: Ensure sustainable consumption and production patterns

Bio-based Dyneema® enables the transition from a fossil resource to a renewable resource and reduces carbon footprint.

Dutch PPE solutions delivers blueprint for new businesses

During the COVID-19 crisis of 2020, we created a dedicated internal DSM startup and later partnered with VDL Groep (VDL), a Dutch, family-owned industrial conglomerate, to swiftly create a business supplying quality face masks and filter material to Dutch and EU markets. We will use this startup model to scale future innovative businesses.

Accelerating production to meet demand

The COVID-19 crisis highlighted the structural problem of worldwide reliance on long global supply chains, for the supply of critical personal protective equipment (PPE) such as face masks.

Global demand for medical face masks and critical filter material quickly exceeded supply when confronted with the pandemic. A shortage arose that endangered healthcare workers, the continuity of healthcare systems, and the overall response to the COVID-19 crisis. Meanwhile, the overstretched market conditions lead to price increases and low quality, inadequate equipment entering the market. To address the need for locally-produced, reliable, high-quality and responsibly-priced PPE, DSM and VDL's solution is to build local PPE manufacturing capability. Our entry into the PPE market is purpose-led, helping to address both an immediate societal requirement and a longer-term structural need.

The increased utilization of single-use PPE such as medical face masks creates significant sustainability challenges. Localizing production to end-use location is a first step, however, we and our joint venture partners aim to make sustainability a future development direction for our PPE activities – for example, by looking into the use of circular materials.

Our solution

The urgent need for locally-produced, reliable, high-quality and responsibly-priced PPE motivated us to apply our experience with startups in to quickly develop a new business and partnership, and to establish operations in the

Netherlands. This and other recent experiences provided a **blueprint** for quickly establishing and scaling up innovative businesses in future.

A small, dedicated, and **entrepreneurial team** with a high degree of autonomy was created to set up the new venture, ensuring fast decision-making and execution. All team members devote more than 60% of their time to the venture and have short communication lines with each other with day-to-day business decision-making power. A venture board composed of senior DSM leaders convenes to decide on changes to business plans and to approve large investments. Funding requests are linked to business milestones such as having a CE-certified mask ready for commercial launch or having operations plans in place. The team is supported by a light, standalone sales, purchasing and accounting system, facilitating quick transactions and rapid progress.

Our impact

The first product to be manufactured was a Dutch-designed, FFP2 medical face mask for use in high-contamination risk environments such as intensive care units**,** with production in Helmond (Netherlands). The development of the masks relies on the production of the **non-woven filter** material, meltblown polypropylene (MBPP), which was in short supply during the first wave of the COVID-19 pandemic. To combat the shortage, we have started construction on an MBPP plant in Geleen (Netherlands). The establishment of the first permanent production facility of critical filter material in the Netherlands will provide greater resilience to possible future surges in demand for face masks and the underlying materials.

The healthcare providers will be prioritized to receive the product initially, and production will be extended as the market may demand to support professionals in other sectors such as public transport, schools and educational institutes, and private companies across Europe.

Dutch PPE Solutions has been created by means of a **streamlined procedure** for establishing ventures, in line with our strategy to deliver growth and value through innovation. The result is an organization that is built for speed, progressing from concept to production in approximately six months. Initial production of face masks began already in October 2020. The manufacturing facility for MBPP is expected to be fully operational in April 2021.

The establishment of the first permanent **production facility** for critical filter material in the Netherlands will provide greater resilience to possible future surges in demand for face masks and the underlying materials.

Stronger together

“During the past months,” comments **Willem van der Leegte**, President and CEO of VDL Groep, “the Corona crisis has taught us that you can't tell a pandemic what to do and that it's important for continents to provide for their own needs. This means we owe it to ourselves to create certainties close to home. The realities of this pandemic means there is, and remains, a worldwide need for high quality face masks. I’m proud that DSM and VDL stepped up quickly to respond, enabled by fast decision making and short communication lines between our two companies which has accelerated our progress when it is needed most.”

How we support the SDGs

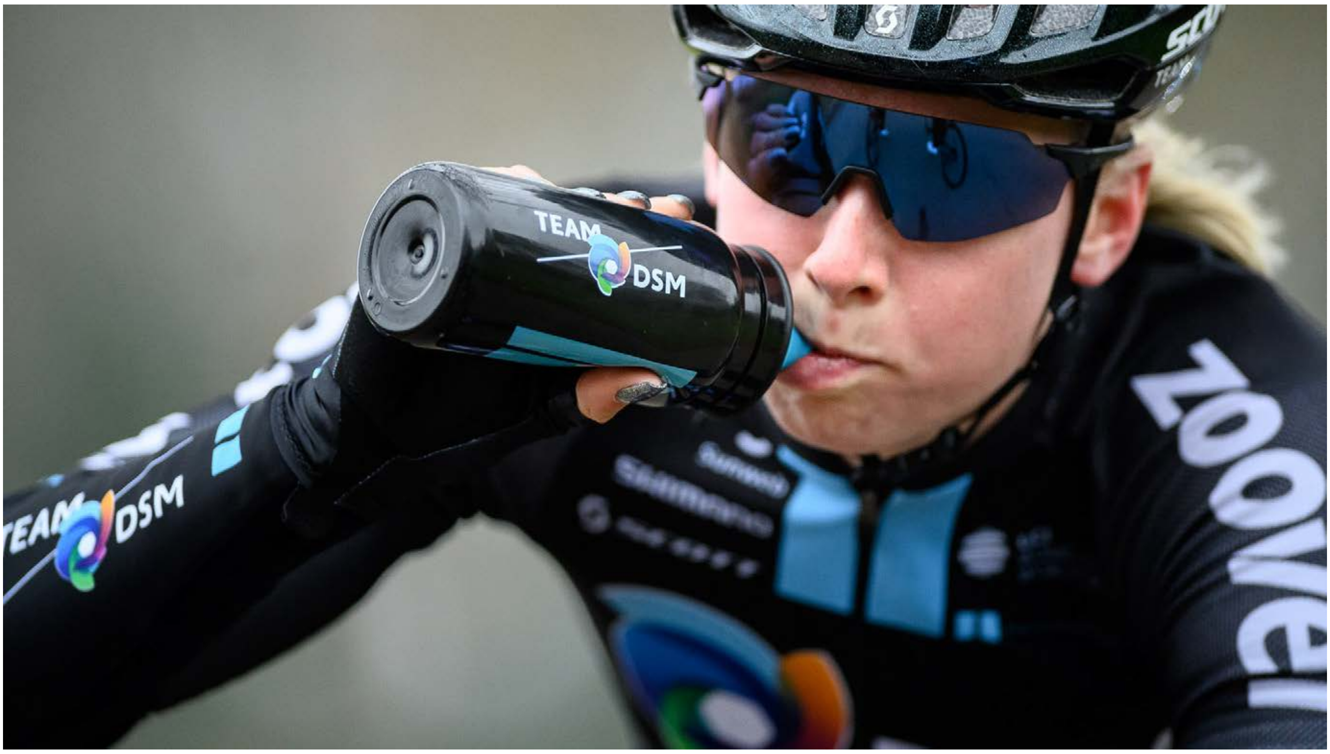
SDG 3: Ensure healthy lives and promote well-being for all at all ages

The DSM / VDL Groep joint venture will strengthen the EU healthcare system's ability to respond to future waves of COVID-19 and similar viral pandemics.

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

The DSM/ VDL Groep joint venture aims to restore PPE manufacturing and associated employment to the EU.

Purpose-led innovations drive team performance



Bringing together our **complementary competences** in Nutrition and Materials, we helped professional cycling team Team Sunweb (as of January 2021: Team DSM) to take it to the next level in 2020 by ensuring health through nutrition on the inside and protection on the outside. The Team won multiple stages of the Tour de France and dominated the podium of the Giro d'Italia in 2020, and is one of the top-ranked and most exciting young teams in professional road cycling.

Challenges in world cycling

While professional sport must be exciting and showcase the athletic abilities of its participants, it must also be as safe as possible for people and the environment. Although not a contact sport, professional cycling – with its high-speed crashes and limited possibilities for bodily protection – can place riders in **considerable danger**. According to ProCyclingStats, the Tour de France averaged 1.5 crashes per stage, while crashes in the one-day classics are even higher.

1.5* crashes per stage

in the **Tour de France** on average

*According to ProCyclingStats

This demanding endurance sport places other stresses on the body, too, with riders exposed to all types of weather, including long periods of potentially harmful sunlight. Advanced protective riding apparel in combination with **optimal nutrition** can **support performance** in these conditions, and can also support immunity and recovery following injury.

Our solutions

Protective Dyneema® in cycling jerseys

Challenged to develop a fabric that delivers maximum protection without reducing comfort or adding weight and thus compromising performance, we created a **Dyneema® fabric** for the Team's cycling jersey and baselayer. Team Sunweb's partner in 2020, sportswear manufacturer Craft, developed a solution that provides effective protection against abrasions sustained at speeds of up to 60 km/h. Even at speeds higher than 60 km/h, the Dyneema® fibers help reduce the severity of any open wounds that may occur, shortening recovery times for injured riders.

Lightweight, breathable rain jacket

We also introduced a lightweight, breathable rain jacket with an environmentally friendly **Arnitel®** membrane. This polyester-based membrane is 100% fluorine-free, lowering its environmental impact by 70% compared to polytetrafluoroethylene (PTFE) membranes. It offers excellent protection from the rain and wind that often accompany cold weather.

Nutritional supplements supporting health and immunity

The Team's riders were provided with several DSM nutritional supplements supplied via their nutritional partner NAMEDSPORT> during 2020.

- Veg-Omega 3 fueled with our plant-based **Life's™OMEGA** is 85% more potent than fish oil; it improves muscle and nerve functions, protects against cardiovascular disease, and supports wound recovery
- To support gut health and immune response, the riders are also using Probiotics Sport by NAMEDSPORT>**,** incorporating lactic acid bacteria produced by **DSM BioCare Copenhagen**; one daily serving contains more than a dozen different strains of lactic acid bacteria
- NAMEDSPORT> supplies the team with soft vision gums fueled by **FloraGLO®** lutein and **OPTISHARP®** zeaxanthin from DSM; these nutritional supplements help protect the riders' eyes against blue light rays emitted by sunlight, to which they are extensively exposed when riding, while the use of vision gums improves riders' reaction time, which is a crucial consideration in cycling

Sun protection

Last but not least, the Team's riders benefited from using Millennials' sunscreen essence SPF 30 formula containing our **PARSOL®** SLX and PARSOL® Shield to protect them from exposure to the sun during their long hours in the saddle.

Read more about how we support Team DSM here.

Our impact

So successful was our strategic partnership with Team Sunweb in 2020 that in December we announced we were taking it to a new level and that Team Sunweb would become **Team DSM** as of 1 January 2021. Team DSM will benefit from the full innovation power of DSM, with the latest breakthroughs in nutritional and material sciences enabling the riders to be the best that they can be, inside and out. We will gain direct insights and feedback from some of the most demanding customers in the world – professional athletes – in order to better develop sustainable solutions that can help others remain healthy and strong and keep them performing safely for longer.

Building on half a decade of **innovation collaboration**, our partnership extends beyond the exchange of products and expertise alone. By becoming synonymous with such a young, successful, principled team, we hope to trigger wider action for more sustainable living and health through nutrition. This will help further our purpose to create brighter lives for all through our scientific and innovation power.

Working together will help deliver better **health outcomes** for people and for the planet, with our nutrition and sustainable living solutions benefiting Team DSM, our customers, and society as a whole.

Stronger together

"This is truly a dream. The involvement of DSM at this scale will definitely help us set new standards with the best nutrition and materials giving us a competitive edge inside and out. We have so much in common with DSM; a passion for innovation and sustainability, high ethical values and much more. The bike is a beautiful symbol of sustainable health and we are very keen to support DSM in ensuring more people recognize there are solutions to some of the world's biggest challenges. For a sports team like ours, having the chance to elevate our relevance from sporting excitement to contributing to big global themes is something we are very, very proud of and is definitely an ambition for all of us."
Team DSM CEO **Iwan Spekenbrink**

How we support the SDGs

SDG 3: Ensure healthy lives and promote well-being at all ages

The insights from this partnership with professional athletes will guide our development of sustainable solutions that have the potential to help others remain strong, healthy and performing safely for longer.

SDG 12: Ensure sustainable consumption and production patterns

The Arnitel® rain jacket is based in a polyester-based membrane that is 100% fluorine-free, lowering its environmental impact by 70% compared to polytetrafluoroethylene (PTFE) membranes.

Moving forward, we will also work with BioRacer and Team DSM to integrate bio-based Dyneema® fibers into the cycling jersey fabric – contributing to a circular and low-carbon economy with reduced consumption of natural resources and lower environmental impact.

SDG 14: Life Below Water

The omega-3 for our plant-based **Life's™OMEGA** are derived from **algae** and not fish, which means no depletion of the oceans' fish supply.

Stakeholders

Our purpose can only be realized by working with our stakeholders[1]. Through empowering our employees, engaging with our customers and suppliers, and with the support of our investors, we will create a stronger legacy and brighter futures for generations to come. We discuss topics that are relevant to our operations and our impact on society regularly with our stakeholders. These conversations shape how we define and execute our strategy, including risk management, materiality, and new business opportunities.

Our stakeholders

Employees

Our people are our most important asset, and our employees represent **120 nationalities**[1], working at more than 200 sites and offices in almost 50 countries worldwide. The safety, health and well-being of our people is our highest priority and we aspire to provide an **incident- and injury-free working environment** for everyone, including our contractors. We continued to deliver on our People & Organization (P&O) strategy, while developing a new expression of our culture and preparing our new P&O strategy. For information on how we engage our employees, see People.

Customers

Our customers are key stakeholders. They **drive our business** and through our collaborations, we enable solutions that help solve some of the world's biggest problems. For information on our business and customers, see Nutrition, Materials and Innovation. For information on how we engage with our customers, see Customers.

Investors

Capital providers play a significant role in the **success and prosperity** of our company. They support us in our pursuit of a long-term oriented strategy which aims to continually create value for shareholders while offering a low-risk environment for debt holders. For more information on how we communicate with investors, see Investors and elsewhere in this Report.

Suppliers

Our supply chain consists of more than 39,000 suppliers. Our suppliers are important partners for achieving our purpose, and we work closely with them through our **Sustainable Procurement Program**, comprised of our **supplier development** and evaluation program, our **scope 2 program** and our **scope 3 program**. For more information on how we work with our suppliers, see Suppliers.

Society

We engage with society at multiple levels — from local **community initiatives**, to collaborations with **universities and research institutes**. We work with **NGOs and civil society** toward solutions for societal issues, and advocate with governments and society on important issues relating to the **Sustainable Development** Goals and the **Paris Agreement**. We also engage in philanthropic and sponsorship activities to the yearly amount of approximately €6 million for the coming period. As outlined in our Code of Business Conduct, we do not make political donations. For more information on how we engage with these stakeholders, see Society.

"We continue our support of the UN Global Compact, and remain committed to reporting our progress within this framework via this Report."

Geraldine Matchett and Dimitri de Vreeze, Co-CEOs, Royal DSM

1 All data presented in Stakeholders are subject to the non-financial reporting policy.

How we create value for our stakeholders

Our Value Creation model is based on the **Integrated Reporting <IR> framework** and gives an overview of how we create value for our stakeholders based on six capital inputs: Human capital, Societal & relationship capital, Natural capital, Financial capital, Intellectual capital and Manufactured capital. We cluster these six capitals into **People, Planet and Profit.**

We transform our capital inputs into value and positive impact through taking advantage of the opportunities and minimizing the risks around the relevant megatrends in our business. A key part of our strategy, aside from our financial targets, is to continuously strengthen our commitment to sustainability. Through our business model, business strategy and purpose, we aim to have a positive impact for People, Planet and Profit, and deliver our share toward the Sustainable Development Goals (SDGs).

More information on how our Value Creation model and the definitions of the six capital, are provided in Explanation of some concepts and ratios.

Capital Inputs[1]

People

Our employees represent more than 120 nationalities in almost 50 countries. We engage with our stakeholders and partners to achieve our Purpose.

23,127

Employees

29:71

Gender ratio (f:m)

Inputs:

- Employees
- Training & development
- Stakeholder engagement & Public-private partnerships
- Philanthropy & sponsorship

Planet

We consume raw materials (including renewable and recyclable materials), energy from renewable and non-renewable sources and water.

21.5

Primary energy use (PJ)

24

Water withdrawal (non-once-through cooling, x 1,000 m^3)

Inputs:

- Raw materials (including bio-based and recycled-based materials)
- Energy (including renewable sources)
- Water

Profit

We employ shareholder equity and borrowings to invest in partnerships and innovation. We purchase goods and services that are used in our manufacturing assets.

€7,399

Shareholders' equity (million)

€3,586

Borrowings (million)

Inputs:

- Shareholders' equity
- Borrowings
- Partnerships
- Scientific environment and academic infrastructure
- Purchased goods & services
- Manufacturing footprint

Our Business Model

We are a purpose-led, performance-driven organization developing innovative solutions addressing Nutrition & Health, Climate & Energy, and Resources & Circularity. Our organizational and operating model is made up of market-facing business groups (clustered in three business segments) focused on the primary business functions, global support and functional excellence departments, and regional organizations. Our Brighter Living Solutions — solutions that are better than the mainstream reference solution for people and/or the planet — account for 63% of our net sales.

1 All data presented in the People and Planet columns are subject to the non-financial reporting policy. Data presented in the Profit column relates to continuing operations.

Percentage of net sales by end-use market (continuing operations)

12%	Food & Beverage
12%	Dietary Supplements
6%	Early Life Nutrition
5%	Personal Care
37%	Animal Nutrition
6%	Automotive / Transport
4%	Electrical / Electronics
6%	Medical Pharma
12%	Other

Value Outcomes[1]

People

The safety of our employees is our highest priority. Investments in training and career development provides value for employees and stakeholders. We aspire to pay a living wage to all our employees. Our products support improved nutrition and a more sustainable food system.

0.24

Frequency Index recordables

76%

Employee engagement

Outcomes:

- Safety & health
- Brighter Living Solutions
- Engaged workforce
- Skills & employability
- Employee benefits
- Improved nutrition

Planet

We work to reduce our environmental footprint and support the reduction of the footprints of our value chain partners. Our products enable the transition to a more circular economy and contain safer ingredients and materials.

13.2

Scope 1 + 2 + 3 emissions (million tons CO_2eq)

60%

Purchased renewable electricity

Outcomes:

- Reduced environmental footprint
- Brighter Living Solutions
- Enabling the transition to a more circular economy
- Safer ingredients & materials

Profit

We aim to deliver a strong financial performance, enabling us to re-invest in our asset base, fund our purpose-driven innovations, pay stable (preferably rising) dividends and provide good returns to our bondholders. Our tax policy follows the letter and spirit of the law.

€1,534

Adjusted EBITDA from continuing operations (million)

€955

Adjusted net operating free cash flow (million)

Outcomes:

- Financial performance (Adjusted EBITDA and Adjusted net operating free cash flow)
- Interest payments, capital gains / losses and return on investment
- Total Shareholder Return, including dividend
- Contribution to civil society via wages, taxes and social security including pensions
- Contribution to business success for customers and suppliers

1 All data presented in the People and Planet columns relate are subject to the non-financial reporting policy.

Impact and SDGs[1]

People

- Better fed and healthier individuals and communities
- More prosperous and resilient employees for our company and in our value chain

Planet

- More sustainable use of resources, for our company and in our value chain
- Products that contribute to safer, healthier working & living environments

Profit

- We are purpose-led, performance-driven through science-based sustainable solutions
- Sustainable returns to investors
- Positive contributions to economic growth in the countries and markets in which we operate

Materiality

In order to assess material topics that are both of interest to society and have impact on our businesses, we annually update our materiality analysis. In 2020, we conducted a **light materiality analysis** compared to the full analysis for Materiality Matrix 2019.

Our update in 2020 used the Materiality Matrix 2019 as its point of departure. An initial analysis was conducted through **desk research** into peers and other institutions to validate the topics from 2019 and to identify any potential new material topics. Direct feedback on the proposed topics was obtained through an **employee workshop** and a **stakeholder dialogue**. The results were reviewed and validated by the Executive Committee. The resulting matrix was compared with the Corporate Risk Assessment to make sure all relevant topics were captured from a materiality and/or risk perspective. Finally, the matrix was reviewed and approved by the Managing Board.

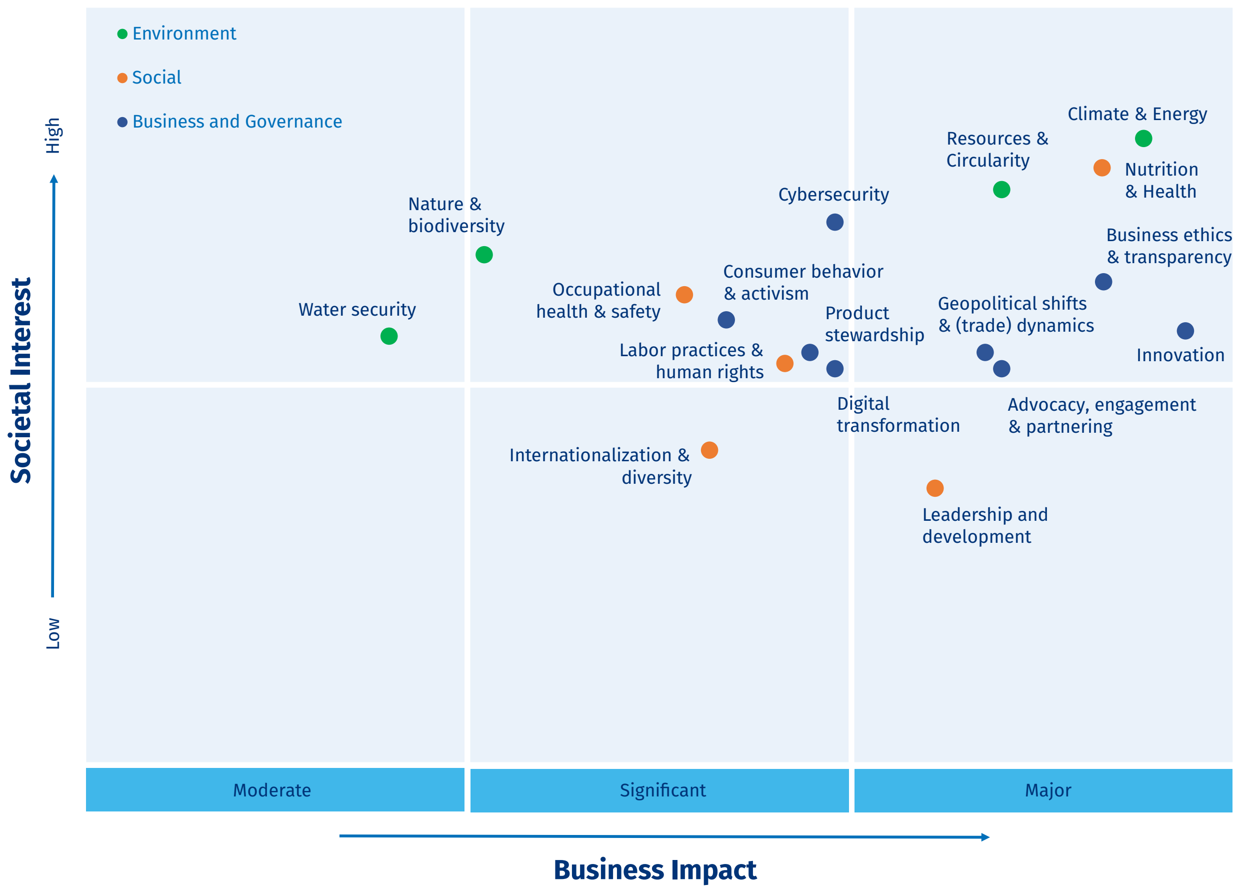
Changes in 2020

Two new topics emerged as warranting their own place in the Materiality Matrix: ‘Cybersecurity’ and ‘Consumer behavior & activism’. The topic ‘Biodiversity’ has been renamed ‘Nature & biodiversity’. No topics have been deleted. The impact of COVID-19 on the Materiality Matrix was discussed extensively. The impact was seen across several of the material topics however, COVID-19 or Pandemics have not been included as a separate topic. This was consistent with the outcome of the Corporate Risk Assessment.

For more information on materiality, see Management approach for material topics.

1 All data presented in the People and Planet columns are subject to the non-financial reporting policy. Data presented in the Profit column relates to continuing operations.

Materiality matrix 2020



Collaborative platforms and networks

We collaborate with like-minded organizations through platforms and networks that contribute to our purpose of creating brighter lives for all. These collaborations are chosen to amplify and accelerate our advocacy efforts in support of a transition to more sustainable economic models on topics that align to our Focus Domains of Nutrition & Health, Climate & Energy, and Resources & Circularity. Collaborative platforms and networks such as these can help formulate new solutions, and measurement and performance methods, as well as roadmaps for business contributions toward achieving the Sustainable Development Goals (SDGs). In this section, we describe some of the most significant initiatives. Due to the impact of COVID-19 in 2020, many of the major events of these platforms and networks, such as the WBCSD Council meeting and the One Young World summit, were postponed or went completely virtual.

Supporting our stakeholders during COVID-19

In 2020, we provided resources and know-how to support our internal and external stakeholders during the Corona crisis. Around the world, we made in-kind and cash donations for the provision of personal protective equipment, disinfectant, test kit equipment, and immunity-optimizing micro-nutrients to help ease the impact of COVID-19 through various local and global initiatives. We also implemented initiatives in-house such as the #optimizeyourimmunity campaign, which are described in more detail in Safety, health & well-being**.**

APAC

DSM Japan donated **school meals and nutrition services** as emergency relief via WFP to children who were impacted by school closures. In India, we partnered with the United Nations Development Program (UNDP) to co-fund and procure electronic ventilators for hospitals. Over 350 employees also contributed to the fund. DSM Singapore supported the Migrant Workers' Centre, a local NGO, with funds and **nutritional supplements** to support **migrant workers** and the volunteers at the Centre. Donations were also raised in Korea, Indonesia and the Philippines.

Europe

In the Netherlands, in a strategic cooperation with Auping and AFPRO filter, we manufactured **face masks** for healthcare workers. We manufactured **2.8 million nose swabs** (sufficient to meet the country's testing needs for three months) and converted a manufacturing facility to produce **disinfectant** which was donated to Dutch hospitals. In Delft, we contributed expertise and facilities to support TNO, a Dutch research institute, to develop a fast test for COVID-19.

In the Rhine Valley region, our site in Grenzach (Germany) began small-scale manufacture of **hand sanitizer** that was used on site, donated to local healthcare institutions, and shared with neighboring companies. In Village-Neuf (France), donations of personal protective equipment and sanitizer were made to elderly care homes.

Latin America

In collaboration with some of our main customers, we provided at low, or no cost, 'DSM Baskets' containing **food and hygiene items** for people in need in Brazil. We also donated 70,000 fortified milk cans for social distribution in poor communities.

North America

We donated **Immunity Stix**, and masks to first responders, hospitals and veterans' homes, supporting front-line healthcare workers. Two of our Resins sites switched from the production of resins to the production of **hand sanitizer**. Donations of face shields and other equipment were made by many other DSM sites.

Cross-domain initiatives

World Economic Forum (WEF)

We are a strategic partner of WEF. We actively participated in the annual meeting in Davos in January 2020 as well as WEF's virtual events throughout 2020. In 2020, our Co-CEO Geraldine Matchett became a member of the **Steering Committee of the Consumer Governors** and the **Food Security Stewards.** She also co-chaired the Jobs Reset Summit. Our Co-CEO Dimitri de Vreeze also joined **the Steering Committee of the Chemical Governors**. Both spoke at various virtual events of the Forum.

We actively contributed to several initiatives in 2020, including the **COVID Action Platform**, the **Stakeholder Principles in the COVID Era**, the CEO Consumer Industry Action Group, the CEO Chemical Industry Action Group and the Food Action Alliance. Our VP Organizational Development & Culture joined the **WEF Community of Chief Diversity & Inclusion Officers** and participated in its roundtable events.

The SDG Tent

During the WEF Annual Meeting 2020, in collaboration with partners including Salesforce, Yara and Cargill, we continued the **SDG Tent**, a venue for discussing business engagement for achieving the SDGs. Several highly successful events were hosted at the SDG Tent.

World Business Council for Sustainable Development (WBCSD)

We are a member of WBCSD and participate in various working groups and coalitions. In 2020, our Co-CEO Geraldine Matchett was appointed to **WBCSD's Executive Committee**.

Food & Nature

We are a founding member of **Food Reform for Sustainability and Health (FReSH) project** and a Board member of the **Food & Nature Program**, with the aim to drive food system change. In November, the WBCSD Food and Nature Program published the 'Healthy & Sustainable Diets' Chapter of the new 'Food & Agriculture Roadmap'. This Roadmap builds on existing scientific and agri-food sector recommendations (from organizations including EAT-Lancet, FOLU, FABLE, WHO-FAO, and WRI), and comes up with calls to action for companies to support better consumption choices, produced in a socially and environmentally responsible manner.

Circular Economy

Factor10 is WBCSD's Circular Economy program and throughout the year, we continued to co-lead the **circular metrics** workstream, which launched a harmonized set of indicators for measuring circularity on company level at WEF in Davos. We also continued our participation in the circular bioeconomy workstream. In November, the **Circular Bioeconomy report** was published, highlighting the opportunities, industry conditions and enablers and trends, as well as corporate case studies including cases from DSM. We are piloting the online **Circular Transition Indicator tool** in the WBCSD Chemical Sector User group.

Redefining Value

Redefining Value is WBCSD's program supporting **external disclosure** and decision-making. Before her appointment to the WBCSD Executive Committee, Ms. Matchett was on this program's board. Early in the year, The **Enterprise Risk Assessment** project group published their report An enhanced assessment of risks impacting the Food & Agriculture sector. We joined the **Company Book** working group, a collaboration looking to build a company-centric solution for (non-financial) data collection and analytics for stakeholder interactions. We continued to participate in the **Assess and Manage Performance** project, exploring performance management practices that build long-term business success within a healthy, sustainable ecosystem.

Climate & Energy, and Vision 2050

We are also active within the WBCSD **Climate Policy Working Group**, the **Climate & Energy Program**, the Chemicals group, and the **Vision 2050** Refresh project. WBCSD's Vision 2050 is a vision for the world of 2050 in which more than 9 billion people can live well, within planetary boundaries. It was first introduced in 2010. The 'refresh' of Vision 2050 aims to support businesses to accelerate the transformations needed, by providing a common narrative and resource to inform their strategic and sustainability agendas.

Accounting for Sustainability (A4S)

A4S brings together leading CFOs to help embed the management of environmental and societal issues into business processes and strategy, particularly through the finance function. Ms. Matchett is a signatory to the **A4S CFO Statement of Support for the TCFD recommendations** and the **A4S CFO net zero Statement of Support**.

In 2020, we participated in various virtual events and meetings, including the participation of two of our senior finance leaders in the **A4S Academy**, a program which provides an opportunity to senior finance leaders to broaden their perspective on sustainability, the impact it has on business, and how companies can contribute. It enables participants to connect with peers from other companies from a variety of industries to deepen their understanding and obtain practical insights into social and environmental risks and opportunities. We shared our approach on risk management, demonstrating how sustainability risks are embedded in our overall risk management approach in a webinar titled '**Lead the Way: Managing Future Uncertainty**'.

Dutch Sustainable Growth Coalition (DSGC)

The DSGC is a CEO-led coalition of eight Dutch multinational corporations which aims to drive **sustainable growth business models** that combine economic profitability with environmental and social progress and thus contribute to the achievement of the SDGs. To accelerate this transition in the Netherlands and abroad, the Coalition wants to lead the way and pursues a strategy of **Scale – Share – Shape**.

In 2020, the Coalition issued a whitepaper Internal Transformation to a Purpose-Driven Organisation providing a roadmap for companies on how to undergo an internal transformation to become truly purpose-led. Together with the **SDG Charter and CSR Netherlands**, the DSGC urged the **Dutch Government and EU Commission** to aim for stringent **Green Recovery policies** to respond to the socioeconomic consequences of the COVID-19 pandemic.

Climate & Energy initiatives

Carbon Pricing Leadership Coalition (CPLC)

We continue to drive carbon pricing and share our experiences on the topic through the Carbon Pricing Leadership Coalition (CPLC). The CPLC's long-term objective is for **effective carbon pricing** to be applied throughout the global economy. In addition to facilitating **leadership dialogues**, the CPLC, together with partners, is also mobilizing business support to put an internal price on carbon. We apply an **internal carbon price** of €50 per ton CO_2eq when reviewing large investments and acquisitions, and we include this in internal management reporting by the business groups.

RE100

Our engagement with RE100, the world's leading campaign to scale up the **corporate sourcing of renewable power**, continued throughout 2020. We participated in the learning opportunities, conferences and advocacy opportunities offered to us in Europe, the US and China. In 2020, we were one of three shortlisted companies for **Best Green Catalyst award** for the **RE100 Leadership Awards**.

We Mean Business

We Mean Business activates hundreds of companies and investors to commit to **low-carbon initiatives**. Our Vice President Sustainability sits in the Business Advisory Board. In 2020, we worked on several advocacy and communications activities that called for governments to urgently match their ambition and policies to **limit global temperature rise** to 1.5°C above pre-industrial levels, couple **COVID-19 recovery effort** with climate action, and demonstrate the private sector's support for these efforts.

Global Center and Commission on Adaptation (GCA)

We have partnered with the Global Center on Adaptation (GCA), particularly by lending our expertise in **food security**, and helping **smallholder farmers** manage risks and climate shocks through Africa Improved Foods (AIF), but also by mobilizing the private sector to adopt an integrated strategy to address climate adaptation alongside climate mitigation efforts.

Taskforce on Scaling up Voluntary Carbon Markets

We are a member of the Taskforce on Scaling up Voluntary Carbon Markets, a private sector-led initiative working to improve the credibility and functionality of an effective and efficient **voluntary carbon market** to help meet the goals of the Paris Agreement. The taskforce is providing insights and recommended actions for the most pressing pain-points facing voluntary carbon markets.

Science Based Targets Initiative: Net-Zero Expert Advisory Group

We joined the Net-Zero Expert Advisory Group in 2020. This group will develop a standard to guide the formulation and assessment of **science-based net-zero targets** in the corporate sector led by the Science Based Targets Initiative. The standard is expected to be the basis for driving the adoption of corporate net-zero targets that are consistent with action needed to limit warming to 1.5°C while minimizing trade-offs with other Sustainable Development Goals.

Resources & Circularity initiatives

Platform for Accelerating the Circular Economy (PACE)

PACE is a public-private collaboration platform that aims to catalyze global leadership from business, government and civil society to accelerate the transition to a circular economy. Our Co-CEO Dimitri de Vreeze represents DSM on **the Global Leadership Group**, which includes over 40 CEOs, Ministers and heads of international organizations. In 2020, PACE engaged with its members to create **circular economy action agendas** focusing on four major material flows: plastics, electronics, food systems and textiles. We participated in interviews and supported the review of the action agendas for plastics, electronics and food systems.

Ellen MacArthur Foundation

The Ellen MacArthur Foundation works with and inspires business, academia, policymakers and institutions to re-think, re-design and build a **positive future circular economy**. In 2020, our employees attended the **Foundation's Network Workshops and Annual Summit** online. In addition, the Foundation offered a series of circular economy trainings (basic and advanced) and webinars which were made available to our employees. One of these webinars was about the **importance of design choices** for a circular economy and featured a speaker from DSM-Niaga. We also continued to take part in the sounding-board of the Foundation's **circularity metrics** work throughout the year, supporting the development and launch of their **Circulytics 2.0** in November.

Circle Economy

In 2020, we continued our membership with Circle Economy, a social enterprise that emphasizes practical and scalable solutions in the transition toward a circular economy. Circle Economy launched its **Circularity Gap Report** for the Netherlands early in the year, which emphasized the role of the chemical sector to help accelerate the transition by using more **alternative, regenerative sources** for production. We continued our involvement in the Circularity Gap Report Roundtable to provide input for, and review the next version of, the Circularity Gap report, which is scheduled for publication in early 2021.

Champions 12.3

In 2020, our co-CEO Geraldine Matchett became a member of Champions 12.3, a coalition of executives from governments, businesses, international organizations, research institutions, farmer groups, and civil society dedicated to **inspiring ambition**, **mobilizing action**, and **accelerating progress** toward achieving **Sustainable Development Goal (SDG) Target 12.3** by 2030. SDG 12.3 calls for cutting in half per capita **global food waste** at the retail and consumer level, and reducing food losses along production and supply chains (including post-harvest losses) by 2030. The coalition also highlighted how DSM is using science to fight food loss and waste across the value chain with its solutions.

Nutrition & Health initiatives

The **DSM Malnutrition Partnerships and Programs** (MPP) team addresses malnutrition through public-private partnerships, while strengthening our consumer-oriented new business model '**Programs in Emerging Markets**'. Through our partnerships, we learn about effectively creating impact for vulnerable and last-mile population groups. These learnings drive our **innovation efforts** to create new solutions that address the needs of consumers in emerging and previously underserved markets. In addition, MPP offers opportunities for **talent development** through exchange programs. In 2020, three DSM employees worked as long-term secondees or on a (part-time, virtual) consultancy project for our partners, benefiting from unique opportunities for personal and professional development.

UN World Food Programme (WFP)

In place since 2007, the DSM-WFP partnership **'Improving Nutrition, Improving Lives'** aims to improve the nutritional value of the food that WFP distributes. Together, we reached 30 **million direct beneficiaries in 2019** (the most recent reporting period) with food improved by the DSM-WFP partnership. Many more were reached through the partnership's efforts in scaling up **fortified rice** both through retail channels and in social safety nets, with work underway to develop a framework to measure this reach. Equally importantly, the partnership programs create **long-term systemic impact** by raising awareness on the importance of nutrition while continuing to develop new scientific and technical solutions. Accordingly, within the current Memorandum of Understanding from 2019–2021, the partnership is prioritizing **rice fortification** as a proven and cost-effective solution for combating malnutrition, with our partnership's activities supporting 15 countries globally. Additionally, as the humanitarian organization is moving towards **cash-and-voucher systems**, the partnership is supporting WFP's Nutrition Division's retail strategy to empower consumers to improve their own nutrition and diets.

UNICEF

The DSM–UNICEF partnership has been in place since 2013. The partnership with UNICEF and *Sight and Life* supports the Government of Nigeria in realizing its vision of scaling up the **micronutrient powder** (MNP) program nationally, reaching people suffering from **malnutrition**. It has contributed to reaching over one million children with vital nutrients that have helped save many lives, and the goal is to further scale up the MNP program to reach two million children by the end of 2021. Meanwhile, the partners also collaborate to create an enabling environment for **multiple micronutrient supplementation** (MMS), a cost-effective solution to reduce maternal anemia and the risk of children being born underweight, too small, and too soon.

The Social Movement on Nutrition program

The partnership expanded to India by supporting the UNICEF engagement of private-sector stakeholders as part of the government's **Social Movement on Nutrition program**. The collaboration focuses on mobilizing the private sector around nutrition literacy, through the platform **Impact4Nutrition (I4N),** which was established in March 2019. In 2020, the platform, which won an internal **UNICEF INSPIRE award**, had more than 70 companies on board.

Addressing agri-food business development

Furthermore, this partnership is being expanded to address agri-food business development as one of the **Global Breakthroughs** identified by **Generation Unlimited (GenU)**, a part of the United Nations Secretary General's Youth 2030 Strategy. The key objective of this expanded **cross-sectoral partnership** is to embed a longer-term vision for Sustainable Food Systems (GenU SFS) in Africa and build an environment along the **agri-food value chain** conducive to thriving, sustainable and inclusive business. The partners will develop a business plan to attract **young people** and prepare them to contribute to **sustainable food systems** in a way that creates nutrition and food business at scale.

World Vision International

Our partnership with World Vision and *Sight and Life*, with the slogan of **'Joining Forces for Last-Mile Nutrition'**, aims to bring **prosperity and good nutrition** to the most vulnerable communities in the **Global South**. Leveraging the unique capabilities and know-how of each partner, we design and implement **sustainable market-based solutions** that bridge the gap between public and private efforts for improving nutrition and fostering local economic development. For example, the partners worked on solutions for maize in Rwanda, eggs in Indonesia and distribution channels in Brazil.

The maize value chain in Rwanda

In Rwanda, the partners enable transformation of the **local maize value chain**, ensuring a more efficient, inclusive and sustainable supply chain. Partners work with and enable smallholder farmers through training and market access, while working on improving the quality of, and access to, raw materials for AIF in Rwanda. After positive results of the initial pilot, the partners are now collaborating for scale-up. **AIF's Super Cereal product** is now benefiting 31,600 children and 19,600 women as part of World Vision Rwanda's COVID-19 response.

The EGGciting project in Indonesia

The EGGciting project in Indonesia focuses on **eggs** as an important source of nutrition and works to increase the availability, accessibility, and consumption of eggs at the household level in Sulawesi (Indonesia). Partners address bottlenecks in the supply chain and improve the quality of feed, while driving demand on the consumer side for improved nutrition by use of **social marketing** that stimulates the consumption of eggs as a nutritious product.

Social distribution of nutrition in Brazil

In Brazil, market research to support the **social distribution** of nutritional products started in 2019. This pilot is projected to transform the distribution of micronutrient-enriched products in Brazil by incubating **last-mile nutrition (female) entrepreneurs** who serve populations living in hard-to-reach areas. The goal is to improve the accessibility of nutritious products for peri-urban poor, while stimulating empowerment and income of (young) women.

Partners in Food Solutions

Partners in Food Solutions (PFS) works to increase the growth and competitiveness of food companies in Africa. These aims are achieved by inspiring business leaders and linking highly skilled corporate volunteers from a consortium of leading companies including DSM, Cargill, General Mills, Hershey, Bühler, Ardent Mills, and J.M. Smucker Company with promising entrepreneurs and other influencers in the food ecosystem. The seven corporate partners have empowered hundreds of entrepreneurs to work toward stronger, more resilient food value chains across the African continent.

In 2020, DSM employees contributed almost 1,300 volunteer hours working with 46 African clients across 11 countries. By sharing expertise, the volunteers were able to assist local entrepreneurs in growing their businesses and supporting a supplier base of more than 85,000 farmers. In total, 57 DSM volunteers supported 59 service offerings to clients, of which 30 clients are owned or managed by women.

Scaling Up Nutrition (SUN)

The SUN Business Network (SBN) — co-hosted by the Global Alliance for Improved Nutrition (GAIN) and WFP — is the private-sector branch of the SUN Movement. It aims to support businesses in growing the role they play in nutrition and to support SUN countries in developing national business engagement strategies. The SBN is established in 14 countries and supports the development of new networks in 12 countries. These include almost 1,000 companies, mostly small and medium-sized enterprises. The global membership platform currently has 23 members, who have a combined workforce of 1.1 million employees. Our Honorary Chairman Mr. Feike Sijbesma is a member of the Lead Group of the SUN Movement and Co-Chair of the Advisory Group of the Network. Our Vice President Emerging Markets is on the Operations Committee of the SBN.

Supporting SBN projects in Africa

We supported several SBN projects focusing on Sub-Saharan Africa. Together with the SBN global team, we built on the impact and energy of the first ever Nutrition Africa Investor Forum (NAIF) which reframed the dialogue around nutrition and supported the Global Pitch Competition 2020. As an SBN global member, we support the implementation of SBN principles, notably around workforce nutrition commitments; overweight, obesity and diet-related non-communicable diseases; and the delivery of technical assistance to national SBNs and their members. We advocate for business to take a leading role in these important issues and collaborate with SBN for stronger business accountability on nutrition and for the adoption of SMART nutrition pledges by business (UN Food System Summit, Nutrition for Growth Summit).

Africa Improved Foods

Africa Improved Foods (AIF) is an African social enterprise addressing the food challenges facing Africa by building resilient food systems by sourcing, manufacturing and selling nutritious, affordable and accessible products. AIF was launched in 2016 in Rwanda as a public-private partnership between the Government of Rwanda and a consortium of DSM, the Dutch Development Bank (FMO), DFID Impact Acceleration Facility managed by CDC Group plc (CDC), and the International Finance Corporation (IFC), the private-sector arm of the World Bank Group. AIF produces fortified foods made mainly from maize and soybean sourced from over 130,000 smallholder farmers in the region. These products include mineral- and vitamin-rich porridges, and help meet the nutritional needs of vulnerable population groups such as pregnant and breastfeeding mothers, older infants and young children.

AIF's Kigali factory contributes to the local and regional economy

AIF's Kigali factory employs over 300 skilled workers with well-paid jobs. Regional procurement of goods and services (such as transportation) has led to indirect economic development across East Africa. With a reach of over 1.6 million consumers daily, AIF contributes significant benefits to the African economy. AIF has proven that this model can be profitable while contributing to SDG 1 (No Poverty), SDG 2 (Zero Hunger) and SDG 13 (Climate Action).

Positive results in 2020 despite the pandemic

In 2020, AIF concluded its third full year of business with a positive EBITDA result. Despite COVID-19, revenue is expected to grow slightly to just over USD 50 million as Super Cereal Plus sales maintained momentum. Business-to-consumer sales also grew significantly as the Nootri brand continues to gain popularity across East Africa. The year also marked the beginning of AIF's new ambitious growth strategy, with groundwork in Ethiopia and production of fortified porridges and cereals started at a new facility in Kenya.

MANDI

In 2020, we continued to expand MANDI (Making A Nutritional Difference to India), a socio-commercial consumer products business delivering local nutrition and home fortification solutions that are affordable and convenient. The range of home fortification products branded as Nu-Shakti™ includes solutions for staples such as rice and wheat flour, as well as fruit-flavored fortified beverage powder. The business aims to build awareness and education about the importance of health, nutrition and immunity with the aim of tackling widespread malnutrition in India. In 2019, we started distributing through trade partners in modern and traditional retail channels in Tamil Nadu, a state in South India. In 2020, the COVID-19 disruption that began in March halted the expansion plans.

Sight and Life

As a global leader in nutrition, Sight and Life Foundation uses science to change the way nutrition is delivered to people who need it most, specifically women and children.

With the support of DSM, Sight and Life delivers value to the nutrition community by translating science into effective nutrition programming, building public-private partnerships, and developing viable social business models for affordable and nutritious foods.

In 2020, Sight and Life delivered nutritious food during the COVID-19 pandemic in Rwanda, South Africa, and India. The egg hub social business model in Malawi, making eggs available and affordable to low-income households, proved successful and sustainable by producing 3.5 million eggs annually. Sight and Life secured a Grand Challenges India Award to innovate around egg powder, also supported by Children's Investment Fund Foundation in Ethiopia. Five companies now incorporate the OBAASIMA seal, aiming to create demand for nutritious and affordable food in Ghana. On the topic of workplace nutrition, IMPAct4Nutrition, a public-private platform, was honored with a UNICEF Global INSPIRE Award in 'Best Multistakeholder Engagement'. Sight and Life mentored young entrepreneurs to develop climate-smart nutrition and pandemic-proof innovations through Elevator Pitch Contests.

New publications focused on key themes, including multiple micronutrient supplementation (MMS), consumer insights, and take-home rations, sharing science-based evidence and expert knowledge. For more information, visit: sightandlife.org.

Initiatives complementing the Focus Domains

Catalyst

We continued to be a Global Supporter of Catalyst — the NGO accelerating women's progress in the workplace. Our Honorary Chairman Mr. Sijbesma continued his role on the Board of Directors and Ms. Matchett her role on the European Advisory Board.

In 2020, we continued to sponsor the Catalyst work program on Women and The Future of Work. This long-term program focuses on building more human-centric workplaces with strong social values, which are prepared for the impact of technology and rapid change, by ensuring equity in future employability. As part of this program we participated in, and contributed to, research activities and roundtable events.

We provided input to the 'How we Lead with Inclusion during the Crisis' reports. In addition, colleagues from our Inclusion & Diversity network participated in Catalyst virtual workshops on: 'Emotional Tax in the workplace', 'Driving Inclusion During the Disruption: The Strategic Advantage of ERGs (Employee Resource Group)', 'Unconscious Bias to Inclusive Leadership Virtual Workshop', 'Understanding Gender Equity Workshop', and International Women's Day 2020: Now Is The Moment To #BiasCorrect'. We also used Catalyst resources on 'Candid Conversations About Racism and Sexism in the Workplace' for internal program development.

Valuable 500

In 2020, DSM joined the Valuable 500 organization – a global NGO aimed at unlocking the social and economic value of people living with disabilities across the world. Our new Inclusion & Diversity strategy incorporates a focus on Disability and a new Employee Resource Group (ERG) called 'The Valuable' group was established to represent the interests of DSM employees with disabilities. Valuable 500 resources and experts have supported the team to develop the agenda.

One Young World (OYW)

The One Young World Summit gathers 2,000 young leaders from more than 190 countries and all sectors, empowering them to make lasting connections to generate positive change for sustainable development. In 2020, our OYW delegation comprised 18 colleagues representing all our businesses and regions and is our 10th OYW delegation. This delegation will attend the Munich Summit which has been postponed to Spring 2021, due to the COVID-19 pandemic.

Working on business development and internal engagement

The community of over 120 OYW alumni (including our new 2020 cohort) manage different business development and internal engagement projects for sustainability. In 2020, the community launched a Personal Carbon Footprint Calculator, a learning & development game called 'The DSM Sustainable City' and a project on Sustainable Packaging, which has already resulted in some packaging substitutions resulting in reduced cost and waste. After two years of progress, the OYW 2018 'Tomato Project' has resulted in a commercial product in collaboration with Nurevas in Ghana and the Swiss Federal Institute of Technology in Zurich (Switzerland). Tomato sauce is for many African countries a widely used staple food. In this project, a tomato sauce was developed, fortified with a wide range of vitamins and minerals. The product will be introduced into the West African market early 2021.

External recognitions

We are proud when our efforts receive positive recognition from others. Below is a selection of some awards and recognitions that we received from NGOs and trade organizations, customers, suppliers and academia in 2020.

Chemical Week gave DSM first place in the Best Sustainable Program category of the inaugural Chemical Week Sustainability Awards. The award recognized how DSM incorporated sustainability and circularity into the company DNA through our product portfolio and corporate strategy.

We were listed as one of the most sustainable companies in Brazil according to the Exame Sustainability Guide for our challenge to improve public health through nutrition.

General Motors (GM) recognized DSM Engineering Materials with a Supplier Quality Excellence Award in 2020. This is the fifth time in the past six years that DSM has received this award.

DSM China was selected for the third time as one of the 2020 Golden Bee CSR China Honor Roll companies by Golden Bee Think Tank and China Sustainability Tribune. The 15th International CSR Forum with the theme 'Responsibility Builds Corporate Resilience' was held in Beijing on 6 August.

The Tsukuba Plant of Japan Fine Coating (JFC) was selected as 'Model Plant' and 'Excellent Plant of Hazardous Material Safety' by the Japan Association for Safety of Hazardous Materials (JASHM) for its excellent safety record and outstanding safety behaviors. It also won the 'Ibaraki Prefectural Governor Award' from the Ibaraki Association for Safety of Hazardous Materials. As a result, the plant will be featured in JASHM's safety training videos.

SABRE Awards Latin America, one of the most recognized branding and communication awards in the world, recognized our 'Life In Our Hands' communication campaign as the best in the region in the Manufacturing Industry category.

ESG Ratings and Benchmarks

Sustainability is at the heart of our business. It is our core value: we see it as a key responsibility and an important business driver. This is reflected by our inclusion in several Environmental, Social, Governance (ESG) Benchmarks and Ratings many of which rate us a (sector) leader.

Given the large number of prevailing ESG benchmarks, participating in each and every one of them is not feasible for any company, so we annually review and prioritize our participation. We are in favor of further consolidation and standardization of the ESG benchmarks as we believe this will encourage more companies to participate than is currently the case.

Our annual review of the ESG benchmarks to participate in, is based on the following criteria:

- Recognition and use by our stakeholders, including our investors
- Transparency of methodology
- Primary reliance on publicly accessible information
- Avoidance of additional administrative work
- Provision of sufficient feedback to participating companies to enable them to make meaningful year-on-year improvements

Our priorities in 2020, and the outcomes, are listed below.

In January, we were assessed by Sustainalytics as being at low risk of experiencing material financial impacts from ESG factors, ranking 1 out of 120 companies in the specialty chemicals industry. Sustainalytics noted our strong corporate governance performance resulting in a reduction in overall risk.

In March, EcoVadis awarded our company a Platinum CSR Rating. The Platinum rating places us in the top 1% of companies assessed in our industry.

We maintained the lowest risk rating (1 out of 10) from ISS QualityScore throughout the year. In May, ISS ESG reconfirmed DSM as 'Prime' according to its rating methodology. Our rating of B- puts us in the top decile relative to our industry group.

In June, MSCI's rating of DSM was unchanged at 'AAA'. The report noted our increased focus on nutrition and health, our focus and investment in R&D, and our strong carbon mitigation strategy, including the link with executive compensation.

In October, we were again listed in the Vigeo Eiris Benelux, Europe, Eurozone and World indices and were reconfirmed as a constituent of the Ethibel Sustainability Index (ESI) Excellence Europe and the Ethibel Sustainability Index (ESI) Excellence Global.

We continued to be a constituent of the FTSE4Good Index. We have been listed on this index since 2004.

In December, for our climate strategy, and water governance and strategy in 2020, we were assessed as A and A- respectively by CDP.

People

At a glance

- 0.24[1] Frequency Index of Recordable Injuries, compared to 0.28 in 2019
- 76% Employee Engagement Index, compared to 74% in 2019
- 21% Female executives, compared to 20% in 2019
- 29:71 female:male ratio
- 75% Inclusion Index. compared to 72% in 2019
- 100% of our employees were offered immunity-optimizing supplements

A year shaped by COVID-19, transformation and a new People & Organization strategy

In 2020, as the COVID-19 pandemic unfolded, taking care of our people was more important than ever. Many of our efforts to support the mental and physical health and well-being of our employees, as well as our continued commitment to inclusion and diversity, human rights and employee engagement, are detailed later in the first part of this section. We continued to deliver on our People and Organization (P&O) strategy, and, in adapting ourselves to a significantly changed context, shaped a new P&O strategy for the coming period.

Focusing on our people through the pandemic

This extraordinary year required us to focus more than ever on our people, ensuring their safety. health and well-being, as well as **engaging everyone** within the context of the new normal we were faced with.

Inclusion was key to make sure everyone felt listened to and cared for, no matter what challenges they were faced with. New company leadership required and created an opportunity to shape the way the Co-CEOs would engage with people and lead. The combination of all these factors was expressed through a new **Culture Compass**, providing direction on who we are and what we stand for at DSM.

Delivering on our P&O strategy

While the pandemic brought a stronger focus on pillars such as Culture and Inclusion & Diversity, we continued our journey on all the other pillars of the P&O strategy as well. Changes to our organization including integrating three recent **acquisitions and one announced divestment** brought new challenges from a people perspective. Our businesses continued their **customer and operating model journeys** through programs such as Fit for Growth and Agility to Grow. We stepped up further in our ambitions for Inclusion & Diversity and focused on **employee development** through the launch of new tools and programs across the company. As committed to in 2019, we also continued our investment in Human rights, with significant steps taken in fair remuneration and living wage.

Preparing our future P&O strategy

The extraordinary circumstances of 2020 — new leadership at the top; a pandemic disrupting our views about work, workplace and workforce; and a continued company transformation — called for a new P&O strategy, which was shaped in the second half of 2020 and launched toward the end of the year. The new strategy is both a continuation and an evolution of our current strategy, with a focus on 'Creating a Flotilla Organization', 'Empowering Our Employees', 'Creating a Contemporary Workplace', and 'Resetting the Context for Leadership' — all anchored in our DSM Culture Compass. The first steps for this new strategy started at the end of 2020, with the launch of the Culture Compass, the pilot of a new technology for career development, and the launch of a concept of Hybrid Workplace for our 'Next Normal' way of working.

Aligning our People approach with the Materiality Matrix

Our approach to People aligns with a number of material topics:

- Occupational health & safety (addressed in Safety, health & well-being)
- Labor practices & human rights (addressed in Human rights)

1 All data presented in People are subject to the non-financial reporting policy.

- Leadership & development (addressed in Delivering on the six levers of our strategy)
- Internationalization & diversity (addressed in Inclusion & Diversity)

Focusing on our people through the pandemic

Safety, health & well-being

The health, safety and well-being of our employees has always been our number one priority. In 2020, as the pandemic unfolded, we were able to leverage and build on our strong foundations. Many of our office-based employees around the world worked from home for large parts of the year, while — with notable exceptions in some regions — our operations and research & development colleagues largely continued to work from laboratories and plants in adjusted, safe conditions.

We actively monitor occupational safety and process safety — the safety of our people and operations. We also support the health and well- being of our employees through regional and global programs.

	Aspiration	2020	2019
Occupational safety[1]			
- Frequency Index REC	0.25 in 2020	0.24	0.28
- Frequency Index LWC		0.09	0.09
Process safety			
- PSI Rate	0.15 in 2020	0.20	0.23
Occupational health cases		19	16

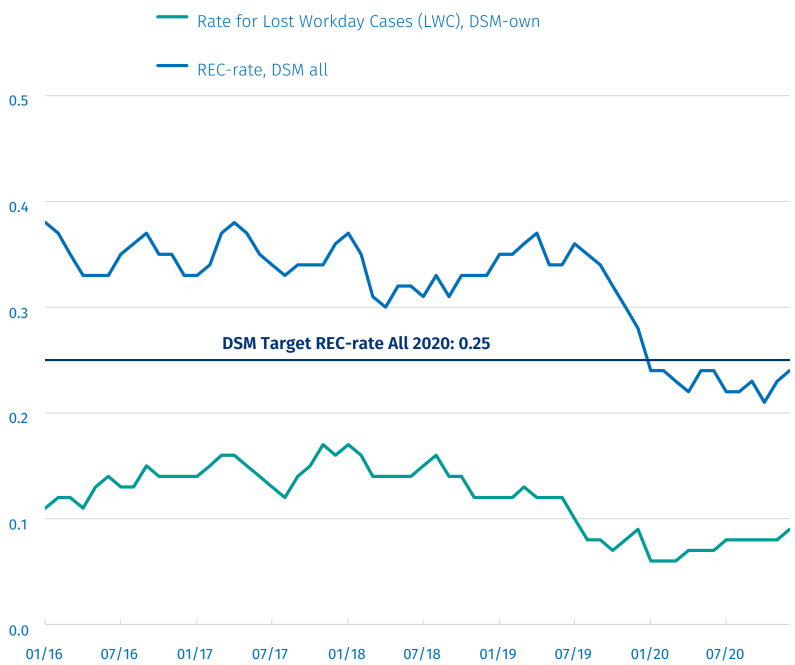
1 All data presented in People are subject to the non-financial reporting policy.

Occupational safety

Occupational safety is the safety of our employees and contractors. In 2020, we were able to build on the robust practices put in place in previous years. We saw a further improvement in the Frequency Index of all DSM Recordable Injuries to 0.24 from 0.28 in 2019, achieving our target level of 0.25.

Frequency Index of Recordable Injuries

12 month moving average



A focus on key sites was key to progress

Our focus on sites with the highest numbers of recordable injuries continued to deliver results, and we saw incident rates decrease by 40% compared to 2019 at these sites. Many key elements of our safety program contributed to this progress, such as the 'I Care, We Care' campaign, the drive for visible leadership, the enhancement of key capabilities and the constant attention on hand safety (our top incident category). We also continued to reinforce the importance of the Life Saving Rules in our safety approach. The Frequency Index of Lost Workday Cases for our employees remained at 0.09.

Contractor safety

For our contractors, the Frequency Index of all Recordable Injuries remained relatively stable at 0.47 in 2020 (from 0.45 in 2019).This was despite better supervision and increased attention to contractor selection, qualification and training, which led to significant improvements in the parts of the organization where incident rates where the highest.

A commitment to continuous safety improvement

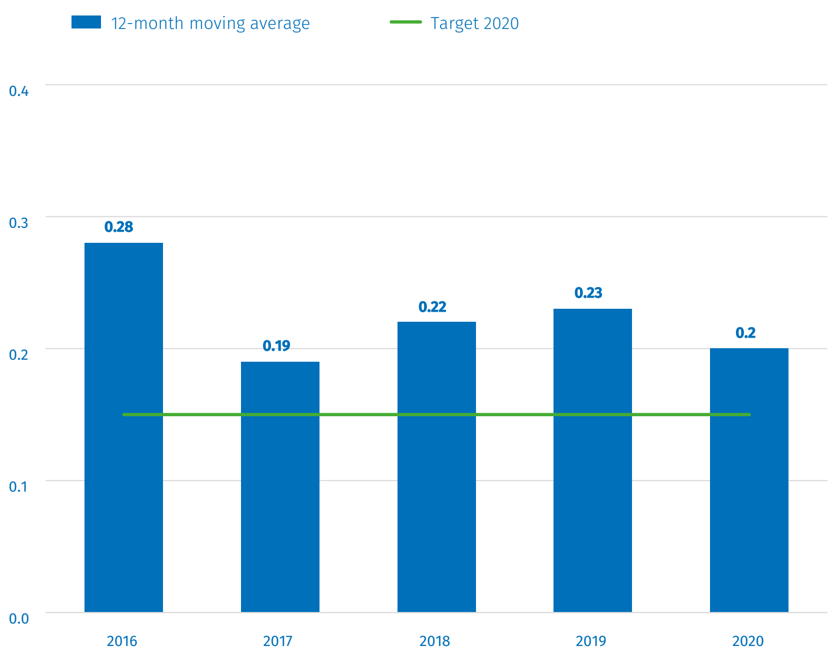
While the progress on the Recordable Injury rate and the impact of our focus programs are promising, we will continue to strive to make our company fully incident and injury free. To this end, we will drive our standardization and digital capabilities, for example, through the use of comprehensive safety dashboards that leverage data to identify key focus areas and implement improvements at all levels. In addition, we continue to develop our automated processes to learn from our growing databases. Furthermore, by improving our transparency we can better execute our safety programs all over the world.

Another key pillar of our journey on digital safety is our growing library of online training programs. This resource was particularly valuable in 2020, when COVID-19 restrictions limited our in-person training programs.

Process safety

Process safety refers to the safe operation of our facilities. In 2020, our Process Safety Rate improved from 0.23 to 0.20, but we missed our target of 0.15. The reduced rate can be attributed to, for example, the asset improvement programs that began in 2019, now taking effect. We also paid special attention to sites where the most incidents occurred in the past: this resulted in an approximately 60% reduction (compared to 2019) of small product leakages, which account for the majority of reported incidents.

Frequency Index of Process Safety Incidents



We carry out diligent follow-up procedures to ensure that we learn lessons from process incidents. This, alongside our employees' growing understanding of and compliance with our Life Saving Rules, is helping to prevent the most potentially serious incidents.

Health and well-being

Our health management system is based on prevention, primary care and the promotion of good health. The COVID-19 pandemic brought new direct and indirect challenges in ensuring the health and well-being of our employees. In line with local risks and conditions, as well as the guidance and legislations of regional and national authorities, we scaled up our response to the pandemic and put in place a wide range of COVID-19-related practical initiatives and educational programs to protect the health and well-being of our employees and their families. Early in 2020, we installed a Global Response Team to COVID-19 in order to install relevant safety and health measures throughout the company. Through this approach, we were able to facilitate the rapid deployment of regional learnings globally, and we were able to rapidly respond to the evolving situation.

"As the pandemic unfolded in 2020, taking care of our people was more important than ever. We undertook a wide range of initiatives designed to support the physical, mental and emotional well-being of our people. I am proud of the resilience, engagement and care demonstrated by all of our employees this year — and we are committed to continue our focus on 'People' through our unique culture of care, courage and collaboration."

Cristina Monteiro, Executive Vice President People & Organization and member of the DSM Executive Committee

Monitoring well-being through the pandemic

We calibrated our response to the pandemic by carefully monitoring how our employees were coping with the situation. Starting in April, we conducted COVID-19 Pulse Checks every two weeks, which provided us with ongoing, up-to-date insights into how people felt about the pandemic and which highlighted any areas of concern. This was a central element of our efforts to deliver a healthy and inspiring work environment, even as our working practices changed and our people navigated the difficulties of the pandemic.

Our Pulse surveys have shown that employees value the flexibility offered by home working and question the need to go into the office when doing so has no added value for their work output. This was confirmed by feedback from our focus group on the 'Next Normal'. COVID-19 has also affected employee sentiment around trust and job security, as exemplified by an increase in Employee Engagement Survey respondents indicating they want to stay at DSM.

#Optimizeyourimmunity

Starting in April, we provided all our employees — as well as some of their family members — with a free selection of immune-optimizing micronutrient supplements as part of the #optimizeyourimmunity initiative. The supplement selection was regionally adapted based on local legislation, and contained vitamin C, vitamin D, omega-3 and zinc, among other micronutrients. In addition, we implemented a series of regional webinars to educate employees on the importance of immunity in fighting pathogens such as microbes and viruses.

COVID-safe work and workplaces

Furthermore, as well as requiring our employees to work from home when stipulated by regional rules or guidance, we adapted many of our workplaces and behaviors to minimize the risk of spreading the corona virus. Daily temperature checks, entrance- and exit-door hand sanitization, one-way corridors, the prioritization of hand hygiene, social distancing, and the avoidance of non-essential travel were among these many precautionary measures. All these measures aligned with local and regional guidance and legislation.

The agreed terms and conditions for our employees in 2020 remained in force during the pandemic. Regular annual cycles were processed, whereby all salary increases, individual merit increases and incentive schemes were implemented without reservation. Measures were taken to support employees who faced additional costs as a consequence of the lockdown (for example, travel costs in locations where public transport was suspended during lockdown). In addition, in recognition of the enormous effort employees undertook to continue delivering for our company under sometimes difficult circumstances, a special bonus was awarded to all our employees.

Supporting our employees' physical and mental health and well-being

Many of our initiatives to safeguard and protect the physical health and well-being of our employees were organized by our regional teams. For example, we made advanced health screenings and checks available to employees, offered flu vaccinations, installed a global 24/7 hotline and delivered kits containing reusable masks, sanitizing gel and soap, as well as educational materials, to employees and their families.

In addition, the COVID-19 pandemic increased our focus on the mental health and well-being of our employees throughout the year. Many of our sites put in place a variety of employee assistance programs — involving webinars, private counseling, educational campaigns, and the distribution of self-help material — which offered emotional, psychological and occupational support. In addition, these assistance programs featured online learning and development initiatives to enable flexible and convenient personal growth during the pandemic.

Preventative measures for occupational illness

Beyond our pandemic-related efforts and initiatives, we aim to prevent occupational illness through the design of our processes and products and by providing proper protective equipment. On-site medical professionals offer primary care including emergency preparedness and first aid. We continuously promote good health via a wide range of activities, following an approach based on global campaigning and local implementation.

We recorded 19 occupational health incidents in 2020, a slight increase over 2019. These were mainly categorized as ergonomic issues and allergic reactions. We aim to cut down the number of such cases and are exploring the benefits of ergonomic aids. We also aim to strengthen the understanding and deployment of global health standards for workplace assessments on, for example, chemical exposure and noise management.

Employee engagement

As a responsible organization, we work hard to offer an employee experience where everyone can feel safe, valued and included, and where every employee can offer their unique contribution. An engaged workforce is essential for our organization to have impact and deliver on our purpose, and engaging with our employees in a year such as 2020 was crucial. We did so in a variety of ways, with online webcasts, virtual family days and employee events, regular newsletters and regional events with our Co-CEOs, and executive calls and annual conference.

	Aspiration	2020	2019
Engagement Index[1]	75% by 2020	76%	74%
Participation Rate		92%	92%

1 All data presented in People are subject to the non-financial reporting policy.

To measure our success and better understand how and where we can improve — as well as to track the impact of internal and external forces and changes — we monitor our employee engagement and well-being through a variety of surveys and 'check-ins'. In 2020, these included our coronavirus Pulse Checks, our Employee Engagement Survey (EES), a specific integration survey following our acquisition of Erber Group, a recurring Fit for Growth follow-up survey, and an inclusion survey in Latin America. Data from all these surveys enables us to continue to improve our employee experience.

Further to this, we employed additional communication efforts to keep employees informed and engaged. These included chat sessions with the Co-CEOs and regional, virtual discussion sessions in conjunction with the Culture launch, also with the involvement of the Co-CEOs.

The Employee Engagement Survey

Our annual Employee Engagement Survey generates high-quality information that helps us understand how our employees feel at work, where we need to improve our employee experience and what solutions we can implement. The responses we receive enable us to initiate fruitful conversations and lead to concrete positive changes in our workplace.

In 2020, managers whose team included five or more survey respondents were eligible to receive specific team reports online; this amounted to more than 1,900 managers (an increase of 470 compared to 2019). To help managers share results with their teams, lead conversations and agree actions, training and support were available from local engagement champions as well as P&O and communications colleagues.

How we measure Employee Engagement

We measure four engagement attributes: commitment, pride, advocacy and satisfaction. The 2020 EES retained the structure and content of the previous survey, comprising questions on safety, engagement, management, inclusion and other key themes, but we also introduced three new questions that were specific to each business group. This meant our business groups received more targeted insights into employee engagement as well as allowing us to identify topics that we can investigate further in future surveys. The EES also offered space for employees to provide comments: 39,400 comments were received in 2020.

Engagement levels remain high

In 2020, the survey was sent to all employees (excluding contractors) and was available in 22 languages. We saw a response rate of 92%, equal to the highest recorded rate (in 2019) since the first edition of the survey in 2007.

Overall employee engagement increased by two percentage points to 76%, and all our comparable questions and indexes saw an increase. We made progress in our 2019 focus areas: Talent rose from 63% in 2019 to 67% in 2020 (including an improvement on the question relating to learning and development opportunities from 68% to 74%); and Inclusion from 72% to 75%. We also improved our already high Safety score (from 91% to 93%). The Strategy question on employees' perspectives of the company's 'promising future' increased from 79% to 81%.

Above all, the results underline the positive effects of our active efforts to maintain high levels of engagement during the pandemic through strong and clear communication, new work flexibility and more visible leadership. Our targeted engagement improvement programs have also had a positive effect according to the received responses, with improved scores seen in some of the units that previously received low scores.

Identifying and addressing areas for improvement

Based on the survey results, our overall focus areas for 2021 are Talent, Inclusion, Well-being and Management.

With regard to Talent, despite improved scores in 2020, we must continue to apply our efforts in several key areas. These include meeting our employees' career development and learning expectations, continuing to build an inclusive work environment, safeguarding employee well-being through 'Next Normal' working patterns and integrating people-centric management and leadership practices.

In the area of Inclusion, we will continue to work on creating inclusive environments and creating stronger trust that diverse perspectives are valued for women in senior management positions. The continued activation of our Inclusion and Diversity Strategy plans, including 'Brighter Together', support for employee resource group (ERG)-led programs, and embedding 'Next Normal' rituals for inclusive working, will be part of this continued inclusion effort.

For Well-being, the 'Next Normal' working patterns, combined with ongoing COVID-19 health uncertainties require a responsive focus on employee well-being. In this area, we plan to further investigate well-being issues (included for example in the COVID-19 pulse survey) and the setup of a 'Sustainable Performance' program.

Finally, in the Management focus area, the results in 2020 indicate the positive effects of manager-focused development. Building on this foundation, we will work to embed good practices into DSM people management everywhere. In this way, we will continue to roll out management skills in areas such as feedback, 'courageous conversations', and team development, and use the change in performance management behaviors to accelerate a positive company culture.

Inclusion & Diversity

In 2020, our employees faced new challenges such as working from home, combining work with caregiving or homeschooling, and managing their own and their family's health. Ensuring that all our people felt included and cared for became more of a priority than ever. Fostering and maintaining an inclusive and diverse workplace is key to helping our employees offer their best, most authentic contribution, and is, therefore, a prerequisite to delivering on our strategic goals. While shifting social forces brought Inclusion & Diversity to the top of social and corporate agendas over the course of 2020, we began work on a new Inclusion & Diversity strategy in January, involving the input and support from global employee focus groups, senior leaders and external partners.

	2020	2019
Inclusion index[1]	75%	72%

1 All data presented in People are subject to the non-financial reporting policy.

A new Inclusion & Diversity strategy with a new governance framework

Launched in October, the strategy broadens the scope of our existing Inclusion & Diversity focus. In addition to gender and internationalization, the new Inclusion & Diversity strategy now also includes the focus areas of disability, generations and LGBTQ+. As such, three new Employee Resource Groups (ERGs) were established: Generations (age), BLEND (race, ethnicity and national identity) and Valuable (disability), supplementing our existing ERGs WIN (women and gender) and Rainbow (LGBTQ+).

To support our new Inclusion & Diversity strategy, a new governance framework was established. It follows a business- and region-led approach and provides a seat at the table for all the global leads of the five ERGs. Each of the focus areas has an Executive Committee sponsor, while the revised Inclusion & Diversity Council is chaired by the Co-CEOs.

Alongside these activities, we continued to focus on existing Inclusion & Diversity commitments and targets. By the end of 2021 our targets are 25% women and 35% under-represented nationalities on executive level. Embedding these targets into people and organization change decisions will ensure we hardwire diversity into the DSM of the future. In 2020, we improved our Inclusion Index from 72% in 2019 to 75% in 2020.

External relations and support

DSM works with a broad range of external partners — including non-profit organizations, industry peers and public institutions — to build inclusive and diverse workplaces. Most notably, these include Catalyst, World Economic Forum, Workplace Pride, and the Valuable 500.

Developing a new expression of our company culture

In 2020, the impact of COVID-19, the appointment of our new Co-CEOs, global social movements demanding a more equal society and a generational shift toward more human, empathetic workplaces, among other contributing factors, led us to re-examine our organizational culture and its role in supporting our purpose and ambitions. Through contributions from across our organization, we defined and launched our Culture Compass.

Purpose-led, Performance-driven

Our Culture Compass steers our purpose-led journey

The Compass is a navigational tool that helps us steer our company to where we aspire to be, while reflecting our purpose-led and performance-driven strategy. Our purpose ('Creating brighter lives for all') is at the center. In particular, we deliver performance by being more of who we are (courageous, caring and collaborative), and by making decisions every day that show what we stand for (taking responsibility, championing sustainability, and delivering value).

Activating our Compass

In 2020, we activated the principles of our culture in our organization by building a network of Culture Champions and actively involving employees in the translation of core elements to themselves and their daily work. The Culture Compass was launched via several webcasts for executives and for employees, and as of 2021, we will focus on anchoring the core values of the Compass into our key People processes.

Delivering on our P&O strategy

Delivering on the six levers of our strategy

The 2020 pandemic brought a strong focus to two of the key pillars of the 2018 P&O strategy: Culture, and Inclusion and Diversity. However, throughout the year, we continued to deliver on all of the six strategic levers: Operating model, Customer-centricity, Internationalization & diversity, Leadership & development, Team by team and Culture / The DSM Ways of Working.

	Aspiration	2020	2019
Internationalization & diversity[1]			
Female executives	25% by 2021	21%	20%
Under-represented nationalities	35% by 2021	30%	31%
Training			
Training hours per employee		6	8

1 All data presented in People are subject to the non-financial reporting policy.

Welcoming our colleagues from recent acquisitions into DSM

In 2020, in line with our ambition to strengthen our growth in the health and nutrition markets, we worked on the integration of three new businesses, thereby welcoming more than 1,700 new employees. These businesses share our purpose-led approach, and our new colleagues will bring complementary expertise and important values. More information on these acquisitions can be found in Nutrition.

The three-phase approach with Royal CSK

Our acquisition of dairy solutions provider CSK in late 2019 saw around 160 colleagues join our workforce. We share a strong cultural affinity, which has helped the integration process progress smoothly. The integration process was split into three phases. First, the CSK organization was integrated into the DSM Food Specialties structure. The second phase involved connecting CSK's sites to the DSM operations network. The final phase was completed with the harmonization of compensation and benefits. In 2021, we will focus on further onboarding our new colleagues and finalizing the remaining minor changes to organizational structures, allowing us to focus on seizing the commercial and sustainability opportunities ahead.

A smooth transition with Glycom

Glycom, a human milk oligosaccharides company, brought 143 new colleagues to DSM. Glycom's well-established culture of responsibility, innovation and safety fits well with our values at DSM. During the course of the integration project, a new management team was established, and an Innovation and Business Development department was set up. Furthermore, the integration project allowed a number of business support teams including Legal, Finance, Operations, IT, P&O and IP to make a smooth transition to our organization. Any remaining or ongoing activities in 2021 will be overseen by the functions that are already fully integrated.

A shared commitment to onboard Erber Group

More than 1,400 employees in over 40 countries joined DSM as a result of our acquisition of Austrian-based Erber Group in late 2020. The acquisition comprised the specialty animal nutrition and health business, Biomin, and food and feed diagnostic solutions business, Romer Labs. We established an integration project team covering a range of businesses and functions. The team's first focus was on implementing working teams, gaining a joint understanding on the businesses and functions, and establishing our ways of working and an initial 100-day plan. For 2021, the focus will be on establishing an Operations team, defining an integrated way of working for support functions as well as identifying the best approach for a joint go-to-market team.

Optimizing our Operating Model

As described by our value creation model, our operating model is composed of our market-facing business groups, which are grouped in clusters, as well as our global support and functional excellence departments, and our regional organizations. In 2020, in line with the turbulence of the markets we operate in, we developed and optimized our operating model, leveraging internal synergies and connecting digitally with customers. These organizational adjustments will help our teams and people work effectively and efficiently.

Demonstrating our Nutrition is Fit for Growth

In 2020, DSM Nutritional Products launched the Fit for Growth program. By simplifying our operating model and further improving business steering, the program aimed to further enhance our abilities to serve customers and respond to the needs of the respective end-markets. At the same time, it applied a differentiated go-to-market approach to better capture commercial opportunities and prepare us for continuously changing market dynamics.

Our Materials Cluster shows its Agility to Grow

Designed in late 2019, and launched in 2020, our Materials cluster's Agility to Grow program has sought to drive efficiency, effectiveness and productivity by leveraging synergies across our business groups to deliver an organization that responds quickly and flexibly to evolving market conditions. The program focuses on seizing opportunities across three functional workstreams: Procurement, Operations and Innovation.

Evolving to serve our customers

Many of the wider developments in 2020 underlined that, in a fast-changing world, it is more important than ever to put customers first. Nevertheless, travel restrictions and social distancing measures relating to the pandemic meant that many of our conventional ways of connecting to customers were impossible. As such, our teams and people around the world adapted to the circumstances and connected to our customers in new, digital ways. Our overall Net Promotor Score of 50 for 2020 compared to 41 in 2019, shows that our customers appreciated our efforts to connect digitally and to listen to their needs.

Indeed, our service to customers was underpinned by our efforts to build and maintain resilient and agile teams. For much of 2020, many of our office-based teams around the world interacted digitally and operated remotely, while our operations and research teams mainly continued to work on site

Reinforcing Leadership and development, Team by team

In 2020, management styles were also adapted, with online team-building activities being encouraged and organized around the world. At the same time, we also moved many of our people development programs and initiatives online.

As part of our efforts to drive the effectiveness of our teams and better serve our customers, we launched Feedback Empowers. This global initiative aims to build feedback into our daily processes and make it part of our daily behavior, in order to accelerate change and growth across DSM, and drive the impact of our people. Feedback Empowers involves virtual classrooms, digital toolkits with useful tips, and other resources designed to improve employees' feedback skills. Global champions drive the initiative and proactively engage with employees and managers.

Regular performance and development evaluations play an important role in ensuring we are performance-driven and develop our people for roles today and into the future. In 2020, almost 15,000 employees had access to the global digital evaluation tool for performance reviews. All other employees participated in performance evaluation on paper or by means of local systems.

Driving Internationalization and diversity

To serve our diverse markets and customers, our talent base must also be global and diverse. In 2020, we continued to focus on increasing the representation of women and under-represented nationalities, as well as on fostering an inclusive environment.

At the end of 2020, 21% of DSM's executives are female. This is 1% higher than in 2019 but still lower than our target of 25%. In addition, 30% of our executives come from under-represented nationalities, which is below the level of 2019 and below our target of 35%. Moving forward, we will continue to work on improving the representation of women and under-represented nationalities within our executive population within the framework of our Inclusion & Diversity strategy. The diversity of our Executive Committee and Supervisory Board is described in Corporate governance.

In 2020, Equileap ranked us second of 100 Dutch listed companies for gender equality. Our position was due to our Executive Board and Supervisory Board ratio (57% and 42% female respectively) exceeding Dutch legislative requirements of 30%, our strategy to close the gender pay gap, and our commitment to the United Nations Women's Empowerment Principles.

Human rights

Our responsibilities around people extend beyond the health and safety of our employees. It is also our duty to protect human rights, which are integral to our purpose-led and performance-driven strategy. As such, we respect internationally recognized human rights in all our operations and throughout our value chain. We believe that the basic rights and freedoms to which all people are entitled should be understood, respected and promoted by all companies as the cornerstone of socially responsible business.

	2020	2019
Gender pay gap[1,2]	8%	9%
Employees below a living wage	< 2%	-

1 Gender pay gap percentages are in favor of women.
2 All data presented in People are subject to the non-financial reporting policy.

We apply the International Labour Standards of the International Labour Organisation and we have been a signatory to the UN Global Compact since 2007. We respect the role of works councils and collective bargaining, and we work with these groups in the countries and regions where they are present. We promote employee empowerment and human rights protection, and we maintain dialogs with employees and representative bodies to enable this.

Our Human rights position paper, available on our company website, sets out our governance structure, and our due diligence processes for identifying and mitigating risks. Grievances relating to human rights are addressed according to the Code of Business Conduct and our whistleblower procedure, DSM Alert.

To embed an integrated approach on human rights, we have established a Human Rights Steering Committee: a representation and joint effort of People & Organization, Sustainability, Legal, Procurement and Operations. Each of these departments is further represented in the human rights working group.

Human rights in our own operations

Our approach to due diligence

In 2020, we further rolled out our new due diligence approach, launched in 2019, which we use to assess to what extent our actual practice is consistent with our internal policies. This Human Rights Impact Assessment allows us to define our salient human rights areas and how we can further identify business opportunities. This due diligence process contains four elements: country risk profiles, interviews with internal and external stakeholders, workforce data analyses and an employee survey.

Fair remuneration

DSM is committed to the principle of equal opportunities for all employees, which includes providing our employees with a living wage. We align our calculations with the Anker methodology (Anker and Anker 2017b). We also aim to reward our employees for their overall contributions to the company, setting equal pay for men and women doing similar work that requires equivalent qualifications and skills. Our Fair Remuneration Statement, available on our website, further elaborates our position on equal pay.

Gender pay gap and equal pay

We use the GRI 405-2 reporting requirements as guidance for calculating our gender pay gap. In 2020, we extended the scope of our analysis with the addition of India. The 2020 results showed a gender pay gap of 8% in favor of women, (female:male pay ratio of 108:100), a change of one percentage point compared to 2019, which is mainly due to scope change. This ratio is based on validated employee base pay data for locations where we have significant operations (defined as Brazil, China, India, the Netherlands, Switzerland and the US, excluding Pentapharm [Switzerland and Brazil] and Jiangshan [Jiangsu Province, China]) and covers approximately 66% of our global employee base. The pay gap can primarily be attributed to a higher proportion of male employees in lower-level positions.

We aim to make further progress in the area of equal pay. In 2020, we partnered with AnalitiQs to develop an advanced analytical model that will allow us to investigate background variables in much greater depth and obtain useful insights. Analysis and validation on gender pay gap and equal pay will continue in 2021.

Living wage
We are committed to paying a living wage to all our employees based on WageIndicator's benchmark methodology. We will use a phased approach, beginning with locations where we have significant operations (defined above) and over the next few years we aim to broaden the scope with more countries. In 2020, we assessed wage levels against WageIndicator's typical family with higher bound living wage figures. Based on this assessment, less than 2% of employees in scope (approximately 200 people) are paid below the higher bound living wage figures; we will make the necessary changes in 2021 to ensure fair remuneration. In parallel, we will conduct an in-depth analysis to further investigate the root-cause.

Addressing human rights in our supply chain
Our Sustainable Procurement Program (SPP) handles potential labor and human rights issues that reside beyond our own operations. We assess suppliers for possible human rights violations through sustainability assessments and audits from 'Together for Sustainability' and EcoVadis. Details about SPP and our management of human rights issues can be found in Suppliers, and in our Modern Slavery Statement, which is updated annually, is available online. In 2021, we will focus on identifying specific risk areas throughout the whole supply chain.

Preparing the future People & Organization strategy

Over the past few years, we have demonstrated a strong focus on performance in line with our strategy. At the same time, a series of internal and external forces, trends and themes have emerged, requiring new approaches from a People & Organization (P&O) perspective. In early 2020, we began designing a new P&O strategy with input from across our organization.

Launched in the fourth quarter of 2020, the new P&O strategy will guide the focus of our P&O function in the coming years, define the investments in people by the Executive Committee, and help steer the company toward a better employee experience.

The evolution of our business, the profound changes brought about by the pandemic, and a renewed leadership with changes in DSM's Co-CEOs and Executive Committee have largely influenced the path forward for our P&O strategy.

Building on the People dimension of Triple P
Building on many of the elements and foundations of our previous strategy, the new strategy will involve a renewed focus on 'People' — a focus that is at least as strong as that for 'Profit' and 'Planet'.

Four focus areas, anchored in DSM's Culture Compass
The new strategy has our Culture Compass at its center and aims to enhance our approach to Organization, People, Workplace and Leadership, enabled by the right rewards.

Creating a flotilla-style organization

The pace and depth of change we are faced with requires us to create a flotilla-style organization, with critical direction coming from the center, surrounded by agile units who are empowered to achieve our common goals. We aim to fuel our talent pool in equally agile ways, through a more liquid workforce that replaces an exclusive direct employment model.

Empowering our people

In a world characterized by high-pace change, digitalization, and business transformation, we aim to provide a personalized and empowering environment for all our people to take ownership of their performance, development and careers while continuing to develop sustainable high impact as individuals.

To this end, in 2020 we introduced, among other initiatives, a new software platform offering a new and improved talent experience for our people. By leveraging artificial intelligence technology, it facilitates the exchange of talents internally and externally.

The chosen platform supports our forward-looking approach to recruitment and career planning. It places greater emphasis on current skills, rather than past education or experience, and mitigates the impact of unconscious bias, enabling the complete masking of profiles.

Based on the learnings of a pilot involving 2,600 employees in four countries in the second half of 2020, we plan on further refining our approach to be able to expand our efforts and geographical scope in 2021.

Creating a contemporary workplace

The 2020 pandemic has led us to reevaluate our understanding on work and the workplace, and led us to design a future vision of a more contemporary workplace, with an inclusive environment where diversity thrives.

In 2020, we installed a dedicated, cross-functional global taskforce to develop directional guidance for our post-pandemic work practices, which resulted in a commitment to a ‘Next Normal’ built on the concept of the Hybrid Workplace.

The Hybrid Workplace capitalizes on the benefits of working from a mix of home, offices, and other workspaces — while respecting local rules and regulations that may affect certain employees. Our teams will define their own working arrangement based on their collective tasks, and personal situations, in collaboration with line management. We also ask our people to think more responsibly about when and why they travel, so that they can champion sustainability.

To ensure we get the best from this balance, and that everyone feels included and able to make an impact, we will launch new working ‘Rituals’ in 2021. These will be accompanied by regional policies to optimize local implementation, along with other initiatives to create a more modern and inclusive workplace.

Resetting the context for leadership

The new context and way of working we aspire to demand that we develop our leaders as coaches who create the inspiring, empowering and inclusive environment needed for our people and our business to grow and to be successful. In 2020, we began developing a ‘Leading through Culture’ program for all DSM people managers, helping our leaders to develop a deeper understanding of how culture is brought to life, team by team. The program will be further developed and rolled out in 2021.

Enabling our focus areas with modern, flexible rewards

We aim to change the way we reward our people to best reflect and enable our key strategic pillars. More flexible reward systems are needed to meet the diverse challenges and needs of our people and businesses. In 2020, we launched a new Recognition Framework that supports our people with a range of tools to recognize and emphasize key behaviors and accomplishments.

Planet

At a glance

- 25%[1] absolute reduction of scope 1 + 2 greenhouse gas emissions versus baseline 2016
- ~18% structural improvement of scope 1 + 2 greenhouse gas emissions versus baseline 2016
- 5% scope 3 greenhouse gas emissions intensity improvement versus baseline 2016
- 60% purchased electricity from renewable resources
- 5.7% energy efficiency improvement, year-on-year
- 4.8% water efficiency improvement, year-on-year

Acting on our responsibilities in terms of environmental stewardship

We take our **global environmental and social responsibilities** very seriously. These extend beyond our own operations to include those of our **suppliers, customers and end-users**. We fulfill our **environmental responsibilities** through our portfolio of Brighter Living Solutions, our Safety, Health & Environmental (SHE) policy, and our position on issues such as product stewardship and biodiversity. We focus on:

- *Improving* our own environmental footprint
- *Enabling* our **customers** to do the same through innovative solutions
- *Advocating* on our key environmental topics

Our operational footprint and approach to reporting

Our operations network spans more than **110 commercial production facilities** in 40 countries. Our operational approach is led by the DSM Responsible Care Plan, described below, and supports the Sustainable Development Goals (SDGs), especially SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action), among others.

We report our environmental performance according to the relevant material topics

Our Planet reporting addresses our performance on several material topics identified in our Materiality matrix refresh:

- Climate & Energy
- Resources & Circularity
- Water security
- Nature & biodiversity
- Product stewardship

Our environmental ambitions are defined in our Responsible Care Plan

The DSM Responsible Care Plan (DRCP) is aligned with our strategy. The DRCP defines our ambitions, targets and actions in the fields of safety, health, environmental footprint, value chain sustainability, climate adaptation and security.

Our key targets are our Science Based Targets

The key targets in the DRCP are our Science Based Targets, comprising a greenhouse gas (GHG) **scope 1 + 2 emission absolute reduction** of 30% and a GHG **scope 3 intensity reduction** of 28% by 2030 versus our 2016 baseline. These were reviewed and approved by the **Science Based Targets initiative** in early 2019 and are the foundation for achieving our net zero by 2050 commitment.

1 All data presented in Planet are subject to the non-financial reporting policy.

Our scope 1 + 2 target is supported by our **renewable electricity target** (75% of purchased electricity to be sourced from renewables by 2030) and our **annual average energy efficiency improvement** of at least 1% until 2030. Our scope 3 target is supported by the CO2REDUCE program.

Next to mitigating climate change, we are also working on **climate adaptation**. To improve the resilience of our assets against potential physical impacts of climate change, we conducted **physical risk assessments** in 2020. This involved mapping high-risk areas and our top 30 sites for five emerging hazards and long-term impacts using two time horizons and three climate scenarios. More information on our physical risk assessment is provided in Risk management.

Our targets on water, waste, emissions and substances of very high concern
Our other company targets are driving improvements in the areas of water, waste, other emissions and substances of high concern.

We will continue to drive the different **water-related improvements** that we identified during the water risk assessments in the past year, while shaping even more **context-based water improvement plans** for 2021 onwards. Furthermore, we continue to enhance our insights and capabilities to steer volatile organic compounds **and waste improvements** and we will develop action plans for all products containing **substances of very high concern**.

In 2020, we made good progress on the key objectives of the DRCP. Additional information about our Planet performance is provided in the Sustainability statements, our value creation model and Stakeholder engagement.

Climate & Energy

In 2015, the Paris Agreement first established a common ambition to take urgent action on GHG emissions to limit average temperature increases to well below 2°C. Later in 2018, the Intergovernmental Panel on Climate Change (IPCC) provided a clear and compelling case to redouble efforts to limit the warming to 1.5°C. Our fair share of this ambition requires our emissions to reach net-zero by 2050 with a rapid acceleration of our rate of emission reductions over the coming decade. These are defined by our net-zero commitment and Science Based Targets.

	Aspiration	2020	2019
Greenhouse gas (GHG)[1]			
GHG emissions scope 1 + 2 absolute reduction versus 2016	30% in 2030	25%	25%
GHG emissions scope 1 + 2 estimated structural improvement versus 2016		approx. 18%	approx. 17%
GHG emissions scope 3 intensity reduction	28% by 2030	5%	-
GHG emissions scope 1 + 2 market-based (million tons)		1.24	1.17
GHG emissions scope 3 (million tons)		12.0	11.6
Energy			
Primary energy use (PJ)		21.5	21.2
Final consumed energy (PJ)		18.2	17.4
Energy efficiency improvement year-on-year	> 1%	5.7%	2.3%
Purchased electricity from renewable sources	75% by 2030	60%	50%

1 All Climate & Energy data are subject to the non-financial reporting policy.

Aligning our climate approach with science
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 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.

As a complement to our efforts on climate change mitigation, we also work on an **integrated strategy of climate adaptation measures** to improve the resilience of our assets and supply chains against potential physical impacts of climate change.

“DSM is leading by example. We were one of the first companies in our industry to commit to net zero emissions by 2050, as well as defining the pathway to firmly set us on this course. Our Science Based Targets define our important mid-term step for 2030. I am immensely proud of the fast progress against our targets. We also continue to challenge, support and innovate with suppliers and customers to reduce their climate impact."

Dimitri de Vreeze, Co-CEO, Royal DSM

Business measures supporting our climate approach

In support of our ambition to substantially reduce our carbon footprint, we have introduced key measures which we apply to all growth projects. Since 2019, **business growth projects** must either be **GHG-neutral** or else be compensated for within the same business.

In addition, to encourage investments in low-carbon and carbon-free technologies, we use an **internal carbon** price of €50/t CO_2eq in the valuations of key investment projects and in the Profit and Loss statements of the business groups for internal management reporting. This increases the visibility of, and encourages accountability for, the **impact of carbon** on the business.

Ownership of climate actions is at Executive Committee level

The **DSM climate action agenda** brings together our key climate actions addressing the three pillars of *improve*, *enable* and *advocate*. The progress of the agenda, including the implementation of the Taskforce on Climate-related Disclosures (TCFD) recommendations, the **GHG reduction program**, our **portfolio developments** and efforts to advocate for **accelerated transition** with partners, are managed and actively reviewed by the Executive Committee several times a year.

Concrete actions within the agenda are owned by individual Executive Committee members. Through the agenda, we ensure that the **business opportunities** related to mitigation and adaptation, and the identified **transition and physical risks** of climate change are addressed. Our climate change strategy received an A rating from CDP in 2020.

“CDP awarded DSM Leadership status and an A score for its CDP climate change disclosure. This places DSM in the top 8% of participating companies in Europe. Companies reaching the Leadership level represent best practice through their comprehensive disclosure of environmental data, thorough awareness of risks, demonstration of strong governance and management of those risks, and implementation of market-leading best practices.”

Maxfield Weiss, Director of Corporate Engagement at CDP Europe

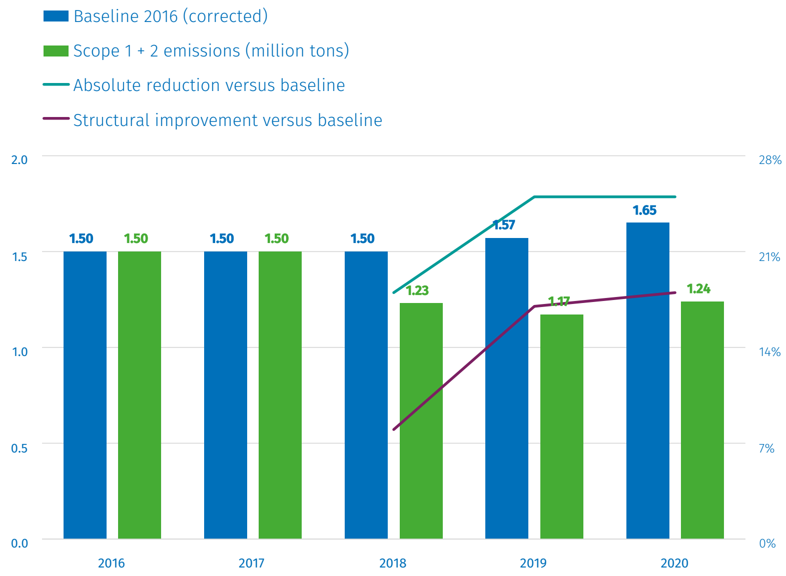
Scope 1 + 2 GHG emissions

On track with our scope 1 + 2 target

We are well on track towards delivering 30% **absolute reduction by 2030**. Our scope 1 + 2 market-based GHG emissions improved 25%[1] compared to our corrected 2016 baseline. Total scope 1 + 2 emissions were 1.24 million tons CO_2eq in 2020. This is an increase compared to 2019 and is mainly due to inorganic growth and higher production volumes of key products in 2020. Our GHG efficiency (year-on-year) improved 8.6% in 2020.

1 All Climate & Energy data are subject to the non-financial reporting policy.

Scope 1 + 2 emissions and reductions versus corrected baseline[1]



1 Absolute reduction and structural improvement were reported as of 2018.

Correcting our baseline in 2020

Our **baseline GHG emissions** figure of 2016 was increased to 1.65 million tons CO_2eq, 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.

Our GHG reduction program

In order to achieve the targeted absolute GHG reduction by 2030, we have continued our dedicated program to help our key locations implement appropriate **energy transition** and **energy efficiency** measures. We are using **performance diagnostics** as well as self-assessments that are carried out at key sites to identify GHG emission reduction opportunities. The learnings from these sites is shared across all sites to enable further roll out of improvement projects.

Supported by a **dedicated corporate budget** that is available to our business groups, we executed a variety of GHG reduction projects in 2020. The execution of the 2020 program will have an impact of approximately 20-25 kt CO_2eq or approximately 1.5% 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 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. In the coming years, in line with developing infrastructure, we will be actively pursuing opportunities for renewable electricity in China as well.

As a result of the above, the overall structural improvement increased from 17% to 18% from 2019 to 2020.

Energy transition

Energy efficiency improvements

Our **energy efficiency improvement** (on primary energy) was 5.7%[1] versus 2019, above our target of an average annual improvement of 1%. This is mainly due to improvements in the production process during the scaling up of one of our new ventures. These improvements resulting in much lower energy use per ton produced. Excluding this effect, the energy

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efficiency improvement was 1.9%, which was mainly due to our GHG reduction program and general efficiency improvements.

Projects executed in 2019 began delivering results in 2020, adding up to approximately 26 kt CO_2eq 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_2eq. 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_2eq. 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_2eq reduction.

Renewable energy

We are a proud member of the Climate Group's RE100, comprising leading companies that have committed to sourcing 100% of their electricity from renewable sources at the earliest possible opportunity. Our commitment is to source 75% of our electricity from renewable sources latest by 2030 and 100% at the earliest possible opportunity.

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. The CO_2eq reduction due to this increase was offset by a lower demand in renewable electricity in high-emission regions and by the current growth in non-renewable electricity in China.

Progress on purchased renewable electricity in Europe

For our operations in Europe, we concluded a new Power Purchase Agreement (PPA) to source renewable electricity from one wind farm and two solar power plants in Spain, which will commence production in 2022–2023. In the Netherlands, our portfolio of agreements continued to provide 100% purchased electricity from wind parks to all locations. All other sites in Europe were also using 100% renewable electricity due to existing agreements combined with pre-production guarantees of origin (GOs) from the new PPA.

Progress on purchased renewable electricity in North America

Two PPAs are in place in the US, one for electricity generated from wind, while the assets for the second one are to be built and will provide solar-powered electricity. The production from the first agreement combined with pre-production renewable energy certificates (RECs) from the second agreement means we have around two-thirds coverage of purchased electricity from renewable resources in North America in 2020, in line with 2019. The agreement for additional renewable electricity production announced in 2019 plus additional expected progress will lift this percentage toward 100% in 2021.

Working on renewable energy for heat and steam

Next to significant steps taken to increase the ratio of purchased renewable electricity, we also look for opportunities for the broader use of renewable energy sources. Sites across DSM already recover waste streams for production of renewable energy while others are in an exploratory phase. For example, an anaerobic digestor in Jiangshan (Jiangsu Province, China) enables the production of biogas from wastewater. At the end of 2020, Chifeng (Inner Mongolia, China) purchased steam produced from biomass residues. The biomass cogeneration plant in Sisseln (Switzerland) reached full year capacity in 2020, enabling a further reduction in GHG emissions of 6 kt CO_2eq versus 2019.

In 2020, we continued to make progress in order to expand the portfolio of purchased renewable fuels in a responsible way. We worked throughout 2020 with a cross-functional team to establish comprehensive sustainability criteria for our purchased biomass-based fuels and heat. Pilot work started in 2020 and will continue during 2021. The new framework aims to ensure that any step taken in this direction supports the responsible transition toward decarbonized operations and to further expand sustainable renewable energy consumption in DSM.

Scope 3 GHG emissions

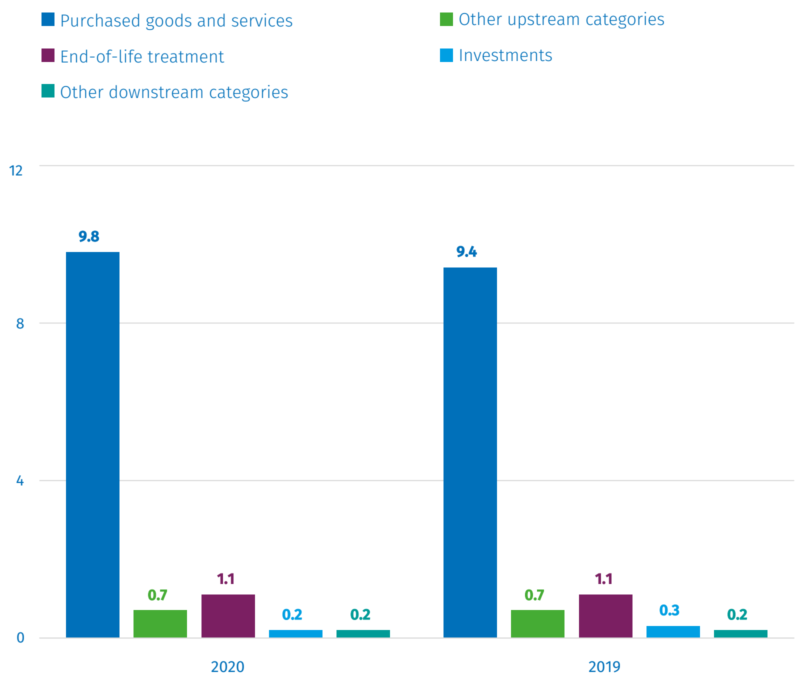
Our scope 3 emissions

Our absolute scope 3 GHG emissions amounted to 12 million tons[1] CO_2eq in 2020. Despite implemented reductions, total emissions increased by 0.4 million tons compared to 2019 (11.6 million tons), with the largest increase from emissions from Purchased goods and services. This was mainly due to an increase in **total purchasing volume** and a shift in **raw material mix** toward more **carbon-intense raw materials** compared to 2019. The main scope 3 categories in the 2020 figures remain **Purchased goods and services** and **End-of-life treatment of sold products**. End-of-life emissions remained stable compared to 2019 due to a restated value for 2019 to correct for an error in units. Due to rounding, total 2019 scope 3 emissions remain at 11.6 million tons despite the restatement on End-of-life emissions.

Other scope 3 categories reported comparable figures in 2020 compared to 2019. The scope 3 categories **Business travel** and **Employee commuting** reported a reduction compared to 2019 due to reduced travel and increased working from home as a consequence of the COVID-19 pandemic.

Scope 3 GHG emissions[1]

in CO_2eq, million tons



1 Due to rounding, the numbers presented above may not add up to the total scope 3 emissions.

We have seen considerable development regarding the performance of our main scope-3-contributing suppliers. Our highest-contributing supplier has already shown a decrease in emissions as a consequence of **reduction measures** taken in past years which now have been included in this year's reporting. Furthermore, they announced an investment to further reduce their emissions in 2021. The second largest contributing supplier re-assessed their emissions and identified strongly increased emissions. As a consequence, they have started an investment to reduce their emissions drastically in the coming years.

1 All data presented in Planet are subject to the non-financial reporting policy.

Science Based Targets

In March 2019, our new Science Based Target was approved, including an intensity reduction target of 28% per unit of product produced in 2030 versus the base year of 2016 for scope 3 emissions. This year will be the first year reporting on the scope 3 intensity development.

The **intensity development** improved by 5% compared to the baseline in 2016. Baseline adjustments were made reflecting the new data insights and supplier-specific information.

Our **emissions intensity** deteriorated year-on-year. A change in product mix due to COVID-19 and the absolute emissions from raw materials was not offset by the improvements realized by our suppliers.

Engaging with our suppliers through our CO2REDUCE program

Our company-wide **supplier engagement program CO2REDUCE** continued at full force in 2020 and made good progress. We explored new means to support our supply base in emission reduction and improved our insights and data quality in the reported emissions.

The program continued using last year's successfully developed **roadmaps** for our businesses, in which collaboration with key suppliers is fundamental. 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.

Collaborating with our suppliers on scope 3 reductions

In our supplier engagement program, we apply a **collaborative approach** together with a given supplier whereby we aim to understand the supplier's existing reduction ambitions and efforts, and develop a **supplier action plan** for reduction based on a common 'reduction' starting point. This typically involves the exchange of **life cycle assessment** data to establish the specific situation of a supplier. We have been successful in this approach, as multiple supplier action plans have been developed that have improved our insights in emissions while relationships with suppliers have been strengthened with a clear focus on next implementation steps for GHG reduction.

We greatly improved at tracking **supplier developments** and determining their **realized reductions.** This required an extension to the existing methodology and adjustment of the relevant IT systems. In the 2020 reported emissions, multiple supplier specific emissions were used in the calculations instead of using industry average figures.

An example is the halving of the carbon footprint of our polyamide Akulon® PA6 as a consequence of the committed reductions at our key supplier. To reflect this very promising development, this supplier specific reduction has been included in the CO2REDUCE reporting and will give a more realistic reflection of **emissions development** already in 2020 and years to come.

Sharing lessons learned on scope 3 emissions

To catalyze additional **emission reductions** through the use of renewable electricity in our supply base, we invited more than 40 participants from key suppliers to join a webinar on the transition from **fossil-based to renewable electricity**. We shared our lessons learned in this field and invited expert consultants to present the wider solution landscape and to accommodate an easy follow-up. The feedback of suppliers was overwhelmingly positive and the webinar series was nominated for the RE100 leadership awards for Best Green Catalyst.

The area of scope 3 emissions is a relatively new field that is in development and we regard it as our responsibility to **actively support** and share our experiences from the CO2REDUCE program in **peer group platforms** like Together for Sustainability. These platforms aim to define best practices on supplier engagement and scope 3 calculations within the industry. Our **Supplier Engagement Rating** on climate was given an **A rating by CDP** in 2020.

Finally, we also develop products for the circular and bio-based economy that contribute to further reducing our scope 3 emissions. See Stakeholder engagement and Resources & Circularity for additional information.

Avoided emissions, supporting our customers with their emissions targets

Our products can enable our customers to transition to a **low-carbon economy** through an inherently lower carbon footprint, or by helping our clients and end-users reduce their own emissions. The latter are referred to as 'Avoided emissions' — **emissions-related environmental benefits** that occur downstream in the **use phase** of our products. While avoided emissions do not count toward our own Science Based Targets or net-zero target, they result in reduced emissions for others in our value chain.

For example, **animal farming** accounts for 14.5% of all human-derived greenhouse gas (GHG) emissions. This contribution needs to be rapidly reduced to help limit the rise in global temperatures to 1.5°C. The farming industry is highly variable in its approach to transitioning to a low-carbon future so our Animal Nutrition & Health business provides innovative, customer tailored solutions to enable GHG reductions within **animal production systems**.

One of our solutions (approximately 1% of our **poultry business**) utilizes a combination of vitamins, enzymes, and eubiotics. This combination provides substantial greenhouse gas emission reductions in **broiler production**, where benefits related to **animal health and digestion** are realized. This performance improvement reduces the carbon footprint of produced poultry by more than 8% compared to non-use. In 2020, this enabled avoided GHG emissions of approximately 1,200 kt CO_2eq.

Similarly, within **pig production** an example product combination (approximately 13% of our sales in this segment), leads to a reduction in emissions associated with **animal feed production** and **animal waste** when compared to non-use. The avoided emissions associated with this solution in 2020 were approximately 100 kt CO_2eq.

Our feed additives are also used in **dairy cattle feed**, improving **animal health** and **milk production efficiency**. An example solution (representing less than 1% of dairy sales) reduces the carbon footprint of milk by 9%. This is associated with approximately 70 kt CO_2eq of avoided emissions in this application.

Other emissions to air

	Aspiration	2020	2019
VOC efficiency improvement versus 2015[1]	continuous improvement	74%	74%[2]
VOC (x 1,000 tons)		3.5[3]	2.7

1 All data presented in Planet are subject to the non-financial reporting policy.
2 The 2019 VOC efficiency improvement has been restated due to a correction in the calculations for one location
3 The increase in emissions in 2020 is due to the inclusion of acquired sites, which do not contribute to efficiency improvement calculations in the year of addition

Our reporting on 'Other emissions to air' focuses on **volatile organic compounds** (VOCs), as these are the most significant emissions in this area. We continue to report our **nitrous oxide** (NO_x) and **sulfur dioxide** (SO_2) emissions in the Sustainability statements and via the company website. However, these emissions are not material due to improvement actions executed in the past.

We continue to work on our VOC emissions

Our objective is to continuously reduce our VOC emissions, resulting in a more than 50% efficiency improvement by 2021 — an increase on our previous aspiration of 40% for the three emissions by 2020. In 2020, our **VOC efficiency** remained stable versus 2019. Smaller improvements were offset by negative production effects, while the majority of the larger abatement projects have been executed in previous years. Our **absolute VOC emissions** increased due to the inclusion of acquired sites in the reporting scope. As this is the first year of reporting for these sites, they do not contribute to the VOC efficiency improvement.

In Yantai (Shandong Province, China), **ethanol emissions** were reduced by more than 50% compared to 2019 due to the implementation of several **process improvements**, improving **staff awareness** and **monitoring**. This improvement does not contribute to the year-on-year VOC efficiency improvement result because it is only the first year of reporting for Yantai, but it does contribute to the overall company VOC level in 2020.

Resources & Circularity

Resources & Circularity is one of our Focus Domains. We are committed to securing the future availability of natural resources and unlocking more value from the limited resources we have, by monitoring and improving our own operational impact through resource efficiency improvements, enabling our customers to deliver sustainable and circular solutions, and advocating for the transition to a circular, bio-based economy.

With the global population expected to reach more than 9.7 billion by 2050[1], the demand for Earth's resources will only continue to rise. The UN has calculated that in order to sustain our current lifestyles, the equivalent of three planets would be required by mid-century. This makes sense, considering our global economy is only 8.6% circular. In other words, just 8.6% of the 92.8 billion tons of minerals, fossil fuels, metals and biomass that enter the economy are re-used annually, and the trend is negative — the gap is not closing.

We enable our customers to transition toward a circular & bio-based economy by focusing on five drivers:

- Reduce the use of critical resources throughout the value chain
- Replace scarce, hazardous, and potentially harmful resources with safe and renewable alternatives
- Extend the lifetime of products by means of improved durability or shelf-life
- Design for recyclability
- Recover waste streams by viewing waste as a resource

We report our performance on Resources & Circularity based on Renewable & secondary raw materials (addressing the first two drivers above) and Waste (addressing the last driver above).

	Aspiration	2020	2019
Renewable & secondary raw materials[1]			
Renewable raw materials (% of spend)		15.2%	14.7%
Waste			
Waste recycled	80–90% in 2020	85%	86%[2]
Total process-related waste efficiency improvement	at least maintain	6.3%	2.8%
Non-hazardous process-related waste (kt)		130	107[2]
Hazardous process-related waste (kt)		75	85
Non-process related waste (kt)		10	5

1 All data presented in Planet are subject to the non-financial reporting policy.
2 The 2019 non-hazardous waste and waste recycled have been restated due to a correction in the calculations at one location.

Renewable & secondary raw materials

As part of our focus on Resources & Circularity, we are accelerating our efforts to replace finite fossil resources with regenerative, renewable (bio-based) raw materials, as well as secondary (recycled) materials. Replacing finite resources with alternative renewable resources can also have environmental co-benefits, such as reducing the carbon footprint of our solutions.

Our progress on renewable raw materials

The renewable raw materials we use include waste from agriculture, yeasts and enzymes, carbohydrates and natural oils, and acids. In 2020, the share of our spend on renewable raw materials increased to 15.2%[2] from 14.7% in 2019. The percentage increase is due to an increase in spend on enzymes, gelatins and other food additives.

1 Source: UN
2 All data presented in Planet are subject to the non-financial reporting policy.

Launching a bio-based alternative for Dyneema®
In 2020, our materials businesses again took big steps forward in driving the transition toward a circular and bio-based economy through the launch of new **bio-based and recycled-based innovations**. For example, DSM Protective Materials launched its bio-based Dyneema®, which is based on **renewable ethylene** derived from **bio-based feedstock** (residue of the wood pulping process). The unique properties of Dyneema® are maintained, enabling customers to adopt a more sustainable solution without compromising process efficiency or final product performance.

Bio-based and recycle-based raw materials in DSM Engineering Materials
By working together with strategic partners, DSM Engineering Materials launched a new **recycled-based alternative** for high-performance polyamide (PA6), **Akulon® CRC-MB**, which is used in the automotive, electronics and packaging industries. This polyamide is used for instance to produce a new **multi-layer food packaging film** in collaboration with SABIC, Cepsa, Fibrant, and film-manufacturer Viscofan. The development of this packaging material underlines a strong commitment from us to work closely with our value chain partners to lead the transition toward more circular and sustainable materials.

DSM announced a new strategic partnership with Neste, whereby DSM Engineering Materials will start replacing a significant proportion of the fossil feedstock used to date in the manufacture of our **high performance polymers** portfolio with feedstock produced from **recycled waste plastics** and/or 100% **bio-based hydrocarbons**. Neste produces its bio-based hydrocarbons entirely from **renewable raw materials**, such as waste and residue oils and fats. For the production of waste-plastic-derived feedstock, Neste focuses on plastics that cannot be mechanically recycled and have previously been directed to incineration and landfilling.

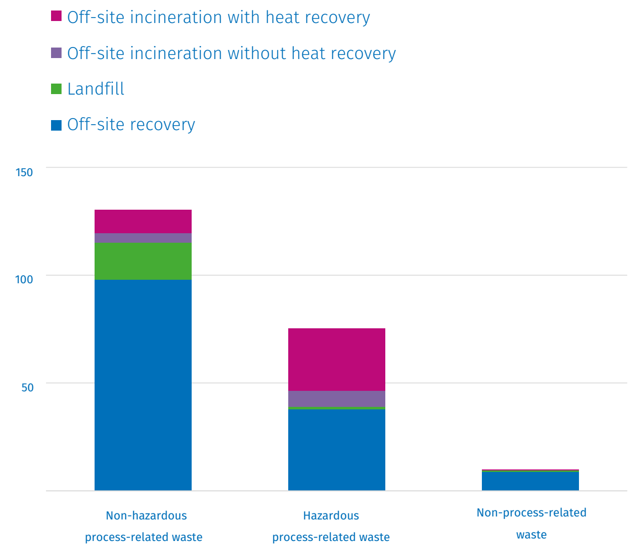
More information on how we approach sustainable biomass is available in our position paper on Sustainable Biomass on the company website.

Waste

Our definition of waste recycled is the percentage of non-hazardous and hazardous **process-related waste** that is **recovered off-site** or, if this is not possible, **incinerated off-site with heat recovery**. In total, this amounted to 175[1] kt out of 205 kt of total process-related waste. We pay careful attention to meeting **local waste management legislation**. We aim to maintain our percentage of recycled waste in the range of 80–90%, which was achieved in 2020.

Waste breakdown by type and destination

in thousand tons



1 All data presented in Planet are subject to the non-financial reporting policy.

Managing our waste streams
Besides measuring our percentage of recycled waste, we also pay attention to reducing our total amount of process-related waste. In 2020, our total process-related waste efficiency improvement was 6.3%. This is mainly due to significant process improvements at our acquired sites and new ventures. Specific waste reduction programs were run at our main locations such as Dalry (United Kingdom), where calcium was used to restore and rebuild soil profiles.

Water security

Fresh water is a finite natural resource that needs to be used and managed in a responsible and sustainable way. Water security is an integral part of our risk mitigation and environmental impact reduction strategies, closely connected to Climate & Energy and Resources & Circularity. At the company level, we commit to measuring, monitoring and reporting relevant performance indicators for water. We disclose the progress of our water stewardship program, via the CDP Water Security questionnaire.

DSM is a signatory of the CEO Water Mandate, a UN Global Compact initiative that mobilizes business leaders to advance in water stewardship and drive progress on SDG 6 (Clean Water and Sanitation). This commitment is translated to our global policy on water, the Water Management Standard, which applies to all our facilities worldwide, enabling the sites to implement relevant measures in line with the Alliance for Water Stewardship (AWS) Standards, the WBCSD guide to circular water management and other industry best practices. In 2020, our CDP Water Security rating improved to an A- for our water governance and management strategy.

	Aspiration	2020	2019
Water Use (million m^3)[1]			
Water withdrawal for once-through cooling (OTC)		85	89
Water withdrawal for non-OTC		24	23
- surface water		4.8	4.0
- potable (tap) water		13.6	12.1
- ground water		5.2	6.0
Consumptive Use		4.4	5.3
Sustainable water management			
Water risk assessments	100% in 2020	100%	100%
Closure of high-risk related actions	90% in 2020	97%	39%
Water withdrawal efficiency improvement	at least maintain	4.8%	3.5%[2]
Emissions to water			
COD (kt)		2.0	2.1

1 All data presented in Planet are subject to the non-financial reporting policy.
2 The 2019 water withdrawal efficiency improvement has been restated due to a correction in the calculations at one location.

The sustainable use of water

As a global sustainability leader, we follow the latest scientific insights on global water crisis, with increasing extreme weather events and water shortage potentially impacting our customers, our employees, and our own business continuity. For climate adaption, our physical risks scan provided important insights into the business impacts of different climate change scenarios. For water stress, our water stewardship approach reflects our sector materiality for risk exposure and impacts we can make. The main user of freshwater is agriculture, which is an indirect part of our value chain.

Water use in our products and processes
Water is not a primary ingredient in our products. Our primary water use is for the utility systems, in steam consumption and cooling processes. In addition to this, high quality freshwater is needed for a variety of our production processes, as a production medium and as a cleaning agent to meet the desired product hygiene and quality standards. For our direct operations, we strive to use water in balance with the context of the respective catchments. In our value chain, we monitor the materiality on water for our suppliers and customers through value chain engagement programs, such as Together for Sustainability (TfS).

“Water stress will continue to increase around the world. Building on our current water efficiency targets, we will define a contextual water reduction target to address water stress in our own operations. This report represents our progress on water toward the UN Global Compact CEO Water Mandate.”

Dimitri de Vreeze, Co-CEO, Royal DSM

Water relevance is context-based

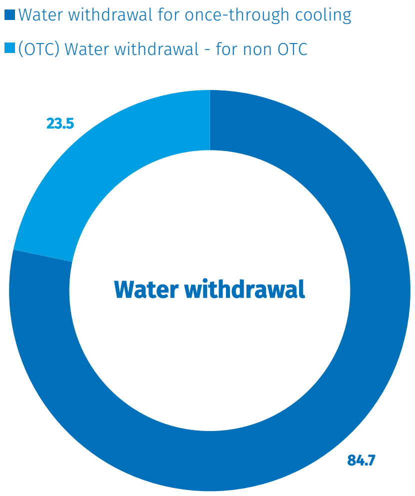
Water is a local topic that needs to be managed in the context of a **given catchment** and its **water challenges**. Our water stewardship program is tailored to our specific impacts and dependencies on water and informed by **local catchment contexts** to maximize our positive impacts in a cost-effective way.

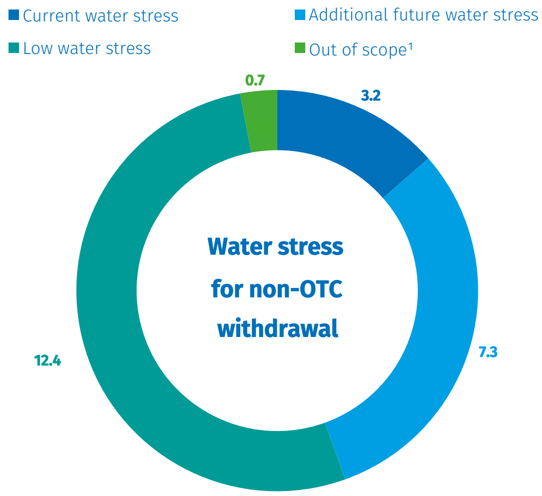
The context of once-through cooling and water consumption
A large proportion of our total water withdrawal (75%[1]) is used for **once-through cooling** (OTC) purposes in low water-stress areas. For this type of water withdrawal, both **risk exposure** and **environmental impacts** are limited. For this reason, we report and monitor ‘non-OTC Water Withdrawal’ separately, to provide a metric that reflects our water intensity in a contextual way. We have a target in place to **continuously improve water efficiency** using this metric.

In addition to water withdrawal, we report and monitor our **consumptive use**, defined as the difference between water withdrawal and water discharge. Our consumptive use is primarily a result of **evaporative cooling** and is positively correlated to energy efficiency. For this reason, our GHG reduction program delivers co-benefits on water consumption through improving energy efficiency. For example, in 2019, we replaced several chillers and their associated cooling towers at our site in Belvidere (New Jersey, USA). The project reduced the water consumption for cooling on site by 50%. This also had a positive effect of approximately 3 kt on their greenhouse gas emissions.

Water withdrawal and water stress

in million tons





1 ‘Out of scope’ includes discontinued operations, sites with minimal withdrawal (<10.000m^3/year) and sites with limited operational control

1 All data presented in Planet are subject to the non-financial reporting policy.

We expect water stress to increase

Water stress is expected to worsen in many parts of the world, as a result of factors including **urbanization** and **population growth**, increasing **food production**, changing **consumption patterns**, **industrialization**, water **pollution**, and **climate change.** Water stress is defined as the ratio of total water withdrawals to available renewable surface and groundwater supplies. It is a parameter that varies depending on the **hydrological water balance** in the catchment and the demand for water in the local community. The level of water stress changes over time influenced by the changing climate but also by societal developments.

To further contextualize our water footprint and incorporate climate adaptation developments, we perform our **water stress mapping** with the water risk tools from the World Resource Institute (WRI) and the World Wildlife Fund (WWF) to identify water stress sites, where water stress is greater than 40%. This mapping is based on our current footprint combined with a **2030 'business as usual' scenario**. The 'business as usual' scenario represents a world with stable economic development and steadily rising global carbon emissions, with global mean temperatures increasing by 2.6–4.8°C relative to 1986–2005 levels. We monitor the water withdrawal and consumptive use for these locations closely.

Water risk mitigations and effluent management

Over the period 2018–2020, we conducted site-level **water risk assessments** (WRA) for 100%[1] of water stress sites and sites with water-withdrawal materiality. The WRA provides detailed insights on the **water challenges** locally including the impacts and likelihood of a given risk, as a basis for the prioritization of risk mitigation measures. Updates to the water stress mapping will also identify new water stress sites that will be in scope for WRA.

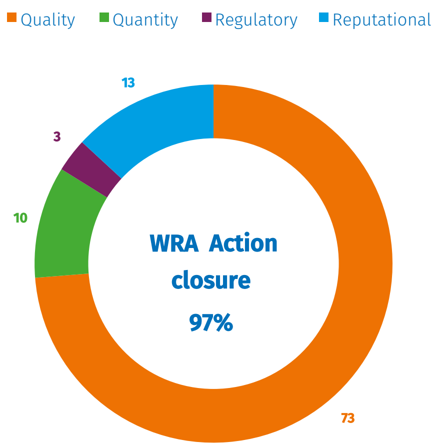
Addressing mitigating measures for water risks

For the high risks identified, the sites define and implement **relevant mitigating measures**. Globally, 39 **high-risk-mitigation measures** (referred to as 'high-risk actions') were defined. The majority of the high risks identified relate to water quality, such as constraints in the **wastewater treatment facilities** related to business growth and/or increasingly stringent **regulatory requirements** on wastewater discharge.

Of these high-risk actions, 97% were implemented in 2020 exceeding our target of 90%. The mitigation measures include **short-term actions** to improve operational controls on site, or have documented commitments for **longer-term projects** in place, such as several **large capital expenditures** to upgrade and expand **waste water treatment facilities**. Longer-term commitments will be followed up with relevant site management processes and will be monitored centrally. Water risk management will remain a key instrument for our water stewardship program to monitor local water challenges and improve (contextual) effluent management.

Water risk types and completion

in %



1 All data presented in Planet are subject to the non-financial reporting policy.

Moving toward a context-based water reduction target

Building on the current continuous improvement targets for water efficiency, we aim to define a **context-based water reduction target** in response to the emerging availability risks in water-stressed regions.

In 2020, a **water impact assessment** was conducted on key water stress sites to evaluate water reduction options and potential impacts operationally and financially. Besides providing the necessary insights to define a relevant and impactful target, the impact assessment raised awareness of **water stress**, strengthened **water stewardship practices**, including measurements and monitoring, and identified **water recycling** and reuse possibilities for the sites in water-stressed regions.

The context-based reduction target as of 2021 will set the direction for improvements for the longer term and be complementary to our continuing efforts to manage water quality through a risk-based approach.

Nature & biodiversity

The complex web of life which makes up nature and biodiversity is vital for our Earth's survival. Healthy ecosystems supply us with oxygen, food, clean air and water, and a host of other ecosystem services including mitigating the effects of climate change by absorbing carbon. Like every business in the world, we depend on nature and ecosystem services. We acknowledge our role to protect biodiversity, and fully support the ambitions of the UN Convention on Biological Diversity.

	2020	2019
Protected Areas[1]		
Sites in or adjacent to protected areas	27%	25%
Sites in registered protected area	3%	3%

1 All data presented in Planet are subject to the non-financial reporting policy.

Biodiversity loss is accelerating, and its key drivers are all connected with human activity. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment, one million of the eight million **animal and plant species** are now threatened with extinction. We address our impacts on biodiversity and **natural ecosystems** through our Responsible Care Plan, especially with our GHG reduction, water stewardship and waste management programs.

Monitoring biodiversity across our value chain

To *improve* our operational footprint, we monitor areas of **high biodiversity value** around our sites. In 2020, 27% of all our production sites in scope were adjacent to protected areas and 3% contained portions of registered protected areas. As we are exposed to biodiversity risks in our supply chain, we strive to **responsibly source** high-risk raw materials through recognized certification schemes. These raw materials include **palm oil derivatives**, **wood-based materials**, **fish oils** and **sugar**. More information on how we work with the sourcing of these raw materials can be found in Suppliers and in our statement on the responsible management of **forest resources** on the company website. Moving forward, we will continually evaluate our impacts on biodiversity along our value chain, and have joined the **Science-based Targets Network's Corporate Engagement Program**, to co-develop and pilot test their guidance for setting science-based targets in the future.

Supporting our customers on biodiversity

We *enable* our customers to develop more sustainable products through our Brighter Living Solutions. For example, just one ton of our Veramaris® natural algal oil saves 60 tons of **wild fish** from having to be caught to produce salmon feed, protecting marine biodiversity in our oceans.

Taking a position on biodiversity
Lastly, we *advocate* for biodiversity-promoting values worldwide. This year, we put our name behind Business for Nature's 'call to action' for governments to set more ambitious policies to reverse nature loss in this decade. We are also a member of One Planet Business for Biodiversity (OP2B) which aims to scale up regenerative agriculture and restore ecosystems to prevent further biodiversity loss through collective member actions.

For more information, see our position paper on Biodiversity on the company website.

Product stewardship

Product stewardship manages and minimizes the environmental, safety and health impacts of substances in our products in line with international regulations from raw materials selection, production process, during use, until end-of-life. It is about knowing the substances we use and produce, being able to explain why we use them, taking the appropriate risk control measures, and sharing this information with relevant and interested stakeholders. We apply a risk-based approach, using safer alternatives whenever feasible, and always when required.

Assessing our exposure to Substances of Very High Concern
In 2020, we finalized the assessment of our full product portfolio to identify products with more than 0.1% Substances of Very High Concern (SVHC), excluding substances in products that are considered 'essential for life'. We applied a broad set of criteria to identify SVHC. These include CMR (Carcinogenic, Mutagenic or Reprotoxic), PBT (= Persistent, Bio-accumulative and Toxic) and vPvB (very Persistent very Bio-accumulative), respiratory sensitizers, endocrine disrupting chemicals, and suspected CMRs.

Less than five percent[1] of our total sales comes from products that contain more than 0.1% SVHC. The assessments for these products include action plans such as replacement possibilities and additional risk-reduction measures. Two substances are responsible for more than half of this percentage, and are classified as suspected CMR (by inhalation). These two substances are embedded in a chemical structure and cannot become available for exposure by inhalation.

Gaining insights into product stewardship
The project provided new insights in and better understanding of (the substances in) our products and processes, which in turn was used as input for our product stewardship roadmap beyond 2020. Global chemical legislation is rapidly expanding and the public is becoming increasingly sensitized to the subject of chemicals. We observe a shift from risk- to hazard-based thinking. With these challenges in product stewardship, we defined five themes to work on:

- Further increase the awareness across the organization
- Improve our master data management
- Improve our use of digitalization tools
- Further implement 'safe & sustainable by design' principles
- Adjust our governance when needed

Updating product registries in REACH
As a participant of the voluntary program of the European chemical industry association to improve the quality of the REACH dossiers, we proceeded with the update of the REACH dossiers, in which we were the lead registrant in 2020. The European database is seen as an important source of information on health and environmental hazards, generated with the implementation of REACH in Europe a decade ago. For more information on product stewardship, see the company website.

1 All data presented in Planet are subject to the non-financial reporting policy.

Profit

At a glance

- +24% Total shareholder return versus 2019
- +1% Sales from continuing operations versus 2019, with organic sales +6% in Nutrition and -12% in Materials
- -1% Adjusted EBITDA from continuing operations versus 2019, with Nutrition +7% and Materials -27%
- €955 million Adjusted net operating free cash flow, +19% versus 2019
- €457 million Net profit from continuing operations, -34% versus 2019
- €2.40 Proposed dividend stable per ordinary share

Overall financial results

Strategy

At our Virtual Investor Event in November 2020, we reiterated our purpose-led, performance-driven growth strategy. Sustainability and innovation are key growth drivers of DSM's long-term focused strategic plan, and are underpinned by ambitious targets across People, Planet and Profit. In markets related to Nutrition, Health and Sustainable Living, DSM is well positioned to use its capabilities to create a positive impact and deliver value for all the company's stakeholders.

In Nutrition, we see significant headroom for business growth and innovation. The success of Nutrition's unique business model combining 'global products' and 'local solutions' is evident from its track record of 6% organic sales growth and a 10% Adjusted EBITDA growth CAGR 2015—2020. Recent acquisitions such as CSK, Glycom and Erber Group further strengthened our value proposition to customers. Going forward, Nutrition will maintain strong growth by building on its 'global products, local solutions' business model. In addition, we will add a third leg through driving Precision & Personalization, by building on our big data, digital and bioscience capabilities.

In Materials, we have strong growth and earnings potential, and are well positioned in the strategic area of Sustainable Living. Following the announcement of the sale of our Resins & Functional Materials businesses to Covestro AG, Materials' activities now consist of DSM Engineering Materials and DSM Protective Materials. We will continue to develop these into a more resilient, higher-growth, and high-margin specialty business. Their combined offering addresses the increasing demand for materials that protect the health of both people and planet by adding further bio-based and circular solutions.

Overall, we aim to deliver mid-single digit percentage organic sales growth, an above 20% Adjusted EBITDA margin, and high-single digit percentage Adjusted EBITDA growth on a mid-term basis in both Nutrition and Materials, supported by our strong innovation pipeline.

Financial results

This section includes an overview of the key financial metrics of the company in respect of our continued operations performance in 2020 and 2019, except where otherwise indicated.

In 2020, the COVID-19 pandemic led to unprecedented global challenges. We took very prompt action to ensure the health and safety of our employees and partners, while keeping operations running to maintain continuity of supply to our customers. Overall, the pandemic had a slightly negative effect on Group sales, as Materials saw a negative sales impact of around 10% on volumes over the course of the year, due to reduced global demand in the second and third quarters. Nutrition saw an overall slightly positive sales impact from the effects of COVID-19, mainly due to very strong demand in Human Nutrition for immunity-optimizing products.

Overall, we delivered solid financial results in this challenging environment and despite significant foreign exchange effects. We reported €1,534 million in Adjusted EBITDA, 1% down compared to 2019. We achieved good results in Nutrition, while Materials was significantly impacted by COVID-19.

The Adjusted EBITDA in the businesses was also supported by the contribution of our innovation pipeline, our recent acquisitions, and our continued focus on cost reduction and operational efficiency, including prompt actions to minimize capex and operating costs in Materials in order to mitigate the effects of the pandemic. Adjusted net operating free cash flow from continuing operations increased by 18% compared to 2019 to €872 million.

Compared to 2019, **Nutrition** delivered above-market sales growth, with organic sales up 6% and a corresponding Adjusted EBITDA growth of 7%. Nutrition sales saw a slightly positive impact from the effects of COVID-19 overall. Human Nutrition & Health experienced a strong increase in demand for immunity-optimizing products. Animal Nutrition & Health witnessed good demand growth, but experienced some volatility in sales performance during the second and third quarters due to stocking effects at customers resulting from the supply chain uncertainty caused by COVID-19. Food Specialties saw good demand for packaged food applications driven by higher at-home consumption. Personal Care was weak due to lower demand for sun care and cosmetics, while Aroma Ingredients saw good demand for detergents and disinfectants.

The performance of our **Materials** cluster was significantly impacted by COVID-19, resulting in -6% volume development in 2020. Demand declined abruptly at the end of the first quarter. Following a slow recovery over the summer, Materials saw a strong improvement from September onwards, especially in Engineering Materials, directly related to demand for automotive.

The **Adjusted EBITDA margins** were 21.0% and 17.9% for Nutrition and Materials respectively, in line with our strategic ambitions. In Nutrition, the Adjusted EBITDA margin was up to 21.0% versus 20.7% in the same period last year, owing to strong sales in Human Nutrition & Health. In Materials, the Adjusted EBITDA margin was 17.9% compared to 21.3% in 2019, owing to the impact of COVID-19.

Income statement and key data

x € million	2020	2019	Change
Net sales from continuing operations	8,106	7,998	1%
Adjusted EBITDA from continuing operations	1,534	1,551	-1%
EBITDA from continuing operations	1,368	1,457	-6%
Adjusted operating profit from continuing operations	929	989	-6%
Operating profit from continuing operations	662	872	-24%
Adjusted net profit from continuing operations	711	752	-5%
APM adjustments from continuing operations	(254)	(63)	303%
Net profit from continuing operations	457	689	-34%
Net profit from discontinued operations	51	75	-32%
Net profit for the year	**508**	**764**	**-34%**
Net profit available to equity holders of Koninklijke DSM N.V.	**506**	**758**	**-33%**
ROCE (in %, continuing operations)	10.4	12.3	
Adjusted EBITDA margin (in %, continuing operations)	18.9	19.4	
Adjusted net operating free cash flow	955	801	

Net sales and Adjusted EBITDA

At €8,106 million, **net sales** from continuing operations in 2020 were 1% higher than in 2019 (€7,998 million). **Organic growth** in 2020 was 2%. **Volume development** was 3%, while price/mix had a 1% negative effect on growth compared to 2019. **Exchange rate fluctuations** had a negative impact of 3%, and acquisitions contributed another 2% to sales.

High-growth economies together currently represent 43% of our sales (44% when Africa is included), which is slightly lower than in 2019. The share of sales in these economies as a proportion of our total sales gives us a well-balanced global footprint.

The **Adjusted EBITDA** (Adjusted operating profit before depreciation and amortization) from continuing operations decreased by 1%, or €17 million, from €1,551 million in 2019 to €1,534 million in 2020. Adjusted EBIT (Adjusted operating profit) from continuing operations decreased from €989 million in 2019 to €929 million in 2020, down 6%.

	Net sales			Adjusted EBITDA		
x € million	2020	2019	% change	2020	2019	% change
DSM, continuing operations	8,106	7,998	1%	1,534	1,551	-1%
Nutrition	6,365	6,028	6%	1,338	1,250	7%
Materials	1,518	1,744	-13%	272	372	-27%
Innovation Center	184	184	0%	21	26	-19%
Corporate Activities	39	42	-7%	(97)	(97)	0%

Net profit

Adjusted net profit from continuing operations of €711 million was down by 5% versus 2019. Net profit available to equity holders of DSM decreased by €252 million to €506 million. This decrease was mainly a result of the higher APM adjustments (up by €191 million, mainly due to restructurings and impairments). Expressed per ordinary share, net earnings from continuing operations amounted to €2.64 in 2020 (2019: €3.85).

Financial income and expense decreased by €25 million year on year to €67 million. This was mainly caused by the impact of the accounting for certain renewable energy contracts and lower interest margins and lower cash balances compared to the previous year.

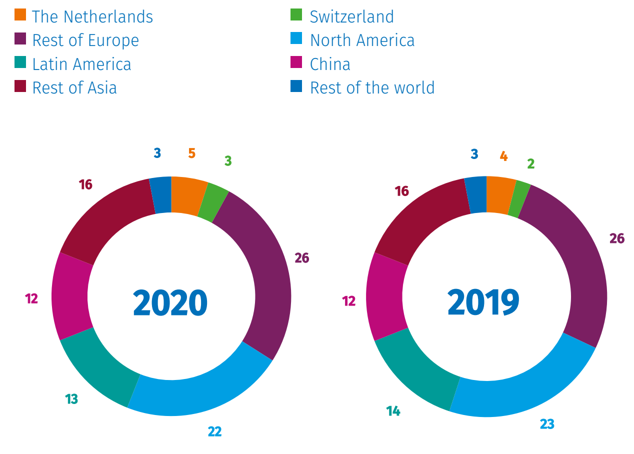
The **reported effective tax rate** over taxable result excluding APM adjustments 2020 for continuing operations was 18.5% (2019: 19.1%). This decrease was mainly due to the one-time impact on the deferred tax position caused by the increase of the tax rate in Switzerland in 2019.

Adjustments made in arriving at DSM's Alternative performance measures (APM adjustments)

Total **APM adjustments** from continuing operations for the full year amounted to a loss of €254 million (2019: loss of €63 million), consisting of a loss in EBITDA of €166 million (including restructuring costs of €103 million and acquisition/divestment costs of €52 million), impairments of €101 million, a related tax benefit of €54 million, and a loss of €41 million relating to associates and joint ventures (mainly the impairment of the POET-DSM joint venture).

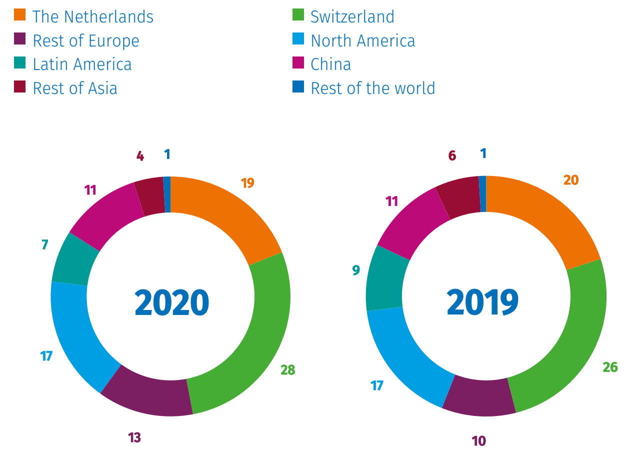
Net sales by destination

in %



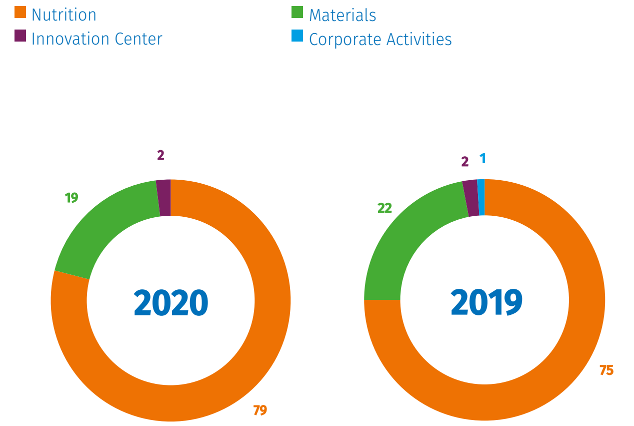
Net sales by origin

in %



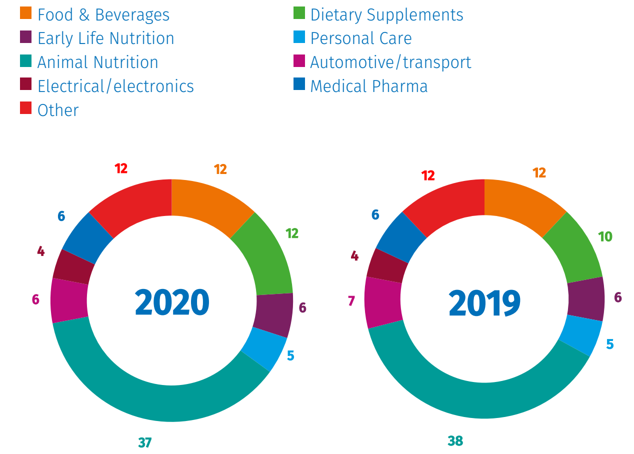
Net sales by business segment

in %



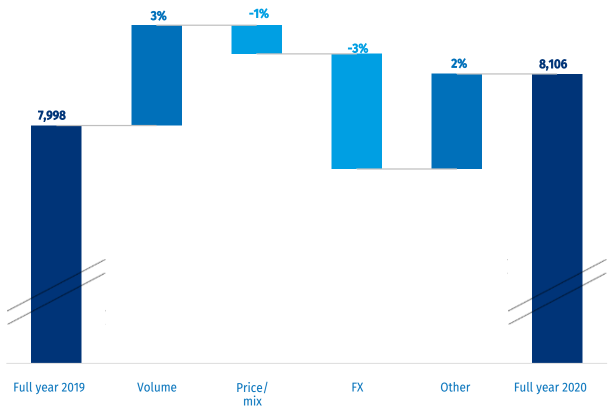
Net sales by end-use market

in %



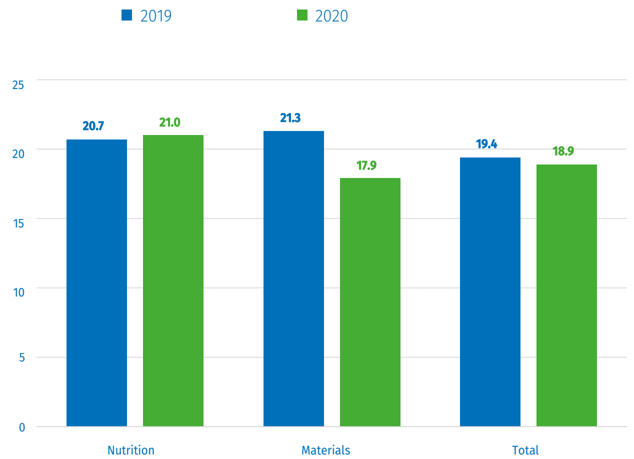
Net sales bridge 2020

x € million



Adjusted EBITDA margin

in %



Cash flow statement

x € million	2020[1]	2019
Cash and cash equivalents at 1 January	800	1,281
Cash provided by operating activities	1,494	1,385
Cash from / (used in) investing activities	(1,482)	(525)
Cash from / (used in) financing activities	83	(1,332)
Effect of exchange differences	(24)	(9)
Cash and cash equivalents at 31 December	871	800

1 The cash flow statement includes an analysis of all cash flows, including those related to discontinued operations

Cash provided by operating activities of €1,494 million mainly consists of the EBITDA for the year (€1,476 million). Our focus on cash flow resulted in a full-year operating cash flow that was €109 million higher than last year. This was driven by various items, including improved working capital performance, lower costs for defined benefit plans and higher customer funding (see also Consolidated financial statements).

The **cash used in investing activities** included capital expenditure (-€609 million) and acquisitions (-€1,533 million, including Erber Group and Glycom), partly offset by the withdrawal from fixed-term deposits (€646 million).

The **cash from financing activities** consisted mainly of the new corporate bonds (€991 million), partly offset by dividend paid (€289 million), the repurchase of shares (€309 million) and repayment of loans (€268 million).

For the **full cash flow statement**, see the primary statement in the Consolidated financial statements.

Balance sheet

The **balance sheet total** (total assets) reached €14.4 billion at year-end (2019: €13.4 billion). Equity decreased by €348 million, which was fully attributable to the exchange rate impact on foreign operations of €451 million. Equity as a percentage of total assets decreased from 58% to 52%.

Compared to year-end 2019, **net debt** increased by €1,433 million to €2,577 million, mainly due to the acquisitions of Glycom and Erber Group. The **gearing** at year-end was 25.6%, which is roughly double the gearing of 12.7% at year-end 2019.

Capital expenditure on intangible assets and property, plant and equipment amounted to €573 million for continuing operations in 2020 (€533 million on a cash basis), which was roughly the same as the level of amortization and depreciation.

Total working capital from continuing operations amounted to €1,580 million compared to €1,743 million at year-end 2019. This represents 19.0% as a percentage of annualized fourth-quarter 2020 sales (2019: 22.5%), which is below our aspiration of 20%. Cash-wise, the operating working capital (OWC) from continuing operations was comparable to last year (a decrease of €8 million). The OWC percentage decreased from 27.6% at year-end 2019 to 24.6% of annualized sales at year-end 2020.

Cash and cash equivalents came to €871 million at the end of the year; including current investments, this amounted to €914 million (2019: €1,488 million). Besides the regular cash flow elements, this decrease was mainly due to acquisitions (€1,533 million), the new bonds (€991 million) and the repurchase of shares (€309 million).

Balance sheet profile

	2020		2019	
	x € million	in %	x € million	in %
Intangible assets	4,455	31	3,515	26
Property, plant and equipment	3,774	26	4,040	30
Other non-current assets	710	5	664	5
Cash and cash equivalents	871	6	800	6
Other current assets	4,554	32	4,424	33
Total assets	**14,364**	**100**	**13,443**	**100**
Equity	7,487	52	7,835	58
Provisions	184	1	168	1
Other non-current liabilities	4,490	32	3,325	25
Other current liabilities	2,203	15	2,115	16
Total equity and liabilities	**14,364**	**100**	**13,443**	**100**

Outlook 2021

DSM expects to deliver an Adjusted EBITDA increase in Nutrition at the upper end of its mid-term strategic ambition of high-single digit growth. Together with continued recovery in Materials, DSM expects an Adjusted EBITDA growth rate for the Group moving into double digits, with a continued good Adjusted net operating free cash flow.

Key business figures at a glance

Our activities are grouped in three clusters: Nutrition, Materials and Innovation Center. We report separately on Corporate Activities. Results presented in this section (and elsewhere in this Report) relate to consolidated activities only (therefore non-consolidated partnerships are excluded).

Net sales

x € million	2020	2019
Nutrition	6,365	6,028
Materials	1,518	1,744
Innovation Center	184	184
Corporate Activities	39	42
Total continuing operations	**8,106**	**7,998**
Discontinued operations	932	1,012
Total	**9,038**	**9,010**

Adjusted operating profit (EBIT)

x € million	2020	2019
Nutrition	919	881
Materials	168	270
Innovation Center	(17)	(12)
Corporate Activities	(141)	(150)
Total continuing operations	**929**	**989**
Discontinued operations	82	86
Total	**1,011**	**1,075**

Adjusted EBITDA

x € million	2020	2019
Nutrition	1,338	1,250
Materials	272	372
Innovation Center	21	26
Corporate Activities	(97)	(97)
Total continuing operations	**1,534**	**1,551**
Discontinued operations	116	133
Total	**1,650**	**1,684**

Capital employed at 31 December

x € million	2020	2019
Nutrition	8,308	6,731
Materials	953	1,060
Innovation Center	436	599
Corporate Activities	-	38
Total continuing operations	**9,697**	**8,428**
Discontinued operations	863	883
Total	**10,560**	**9,311**

Adjusted EBITDA margin

in %	2020	2019
Nutrition	21.0	20.7
Materials	17.9	21.3
Total continuing operations	**18.9**	**19.4**
Discontinued operations	12.4	13.1
Total	**18.3**	**18.7**

ROCE

in %	2020	2019
Nutrition	12.6	13.9
Materials	16.4	25.0
Total continuing operations	**10.4**	**12.3**
Discontinued operations	9.2	9.6
Total	**10.3**	**12.0**

Capital expenditure

x € million	2020	2019
Nutrition	441	420
Materials	63	84
Innovation Center	35	30
Corporate Activities	34	30
Total continuing operations	**573**	**564**
Discontinued operations	49	59
Total, accounting based	**622**	**623**
Non-cash items	(13)	4
Customer funding	(24)	(18)
Total, cash-based	**585**	**609**
In % of net sales	6.5	6.8

R&D expenditure (including associated IP expenditure)

	x € million		as % of net sales	
	2020	2019	2020	2019
Nutrition	234	218	3.7	3.6
Materials	73	73	4.8	4.2
Innovation Center	60	57	32.6	31.0
Corporate Activities	11	13	28.2	31.0
Total continuing operations	378	361	4.7	4.5
Discontinued operations	60	55	6.4	5.4
Total	438	416	4.8	4.6

Workforce at 31 December

headcount	2020	2019
Nutrition	15,838	14,599
Materials	2,857	2,951
Innovation Center	579	683
Corporate Activities	2,039	2,087
Total continuing operations	21,313	20,320
Discontinued operations	1,814	1,854
Total	23,127	22,174

Review of business

Nutrition

At a glance

- €6,365 Net sales versus € 6,028 in 2019 (in millions)
- 21.0% Adjusted EBITDA margin versus 20.7% in 2019 and versus a >20% ambition
- 50 animal nutrition premix facilities and 15 human nutrition premix facilities
- > €1 billion of our sales in 2020 came from immunity-optimizing ingredients
- #1 supplier of energy-saving enzyme solutions to the global brewing industry
- > 70% of our skin care portfolio is > 90% natural in origin

About DSM Nutrition

Our **Nutrition cluster** comprises DSM Nutritional Products, DSM Food Specialties and DSM Hydrocolloids. This cluster provides solutions for animal precision nutrition and feed, food & beverages, pharmaceuticals, medical nutrition, early life nutrition, nutrition improvement, dietary supplements, personalized nutrition and personal care. We are active at all stages of the associated value chains, producing pure active ingredients, incorporating them into sophisticated forms and providing tailored premixes, forward solutions and branded consumer products. Our unique portfolio of products and services is global and highly diversified, serving customers and other stakeholders locally across an extensive range of end-markets worldwide.

With our **'global products, local solutions'** business model, we have successfully built a unique, broad, highly integrated and profitable growth business. Our results are testament to the strength and uniqueness of this business model, delivering 6% organic growth and an increase in Adjusted EBITDA margin from 17% to 21% during the period 2015–2019. We are expanding our business model with leading Precision & Personalization propositions in this rapidly emerging market. More detail on our Nutrition & Health business model can be found in Strategy.

Trends

Our Nutrition business addresses **two significant trends**: in animal nutrition and health, the urgent need to enable the sustainable production of animal protein, and in human nutrition and health, the growing demand for (personalized) health solutions.

Enabling the sustainable production of animal protein

The world's population is projected to reach 9.7 billion by 2050[31]. At the same time, demand for healthier, balanced, and more nutrient-dense diets is increasing — driven not only by the growth of the world's population but also by changing health awareness and consumer expectations. Even with calls for a more balanced consumption of animal protein and replacement by vegetable alternatives, demand is still likely to grow as many populations need to raise their animal protein intake to attain a level of balanced, healthy nutrition. Enabling **sustainable animal production** is therefore of paramount importance.

Animal-based proteins are highly nutritious and form a key part of a **balanced, healthy diet**. Their consumption is also central to many cultures, and animal-source foods and other animal-source products play an important socio-economic

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1 Source: UN.

role in those cultures. However, livestock production comes at a cost. This cost is increasingly evident. Rising demand for animal protein is driving up greenhouse gas emissions and piling pressure on natural resources. In some cases, this pressure has already transgressed accepted planetary boundaries. The planetary boundaries include the Earth's limits of greenhouse gas (GHG) emissions, biochemical flows, water quality and quantity, land use, and biodiversity. The agri-food sector is one of the major contributors to global GHG emissions, and almost a third of wild fisheries are overexploited. The sustainability of animal protein production is now front and center in the minds of many, and calls for change from the value chain, policy makers and associated stakeholders are widespread.

Our solutions

We strongly believe in sustainable animal farming and food systems, and that the livestock industry can transform itself from within to deliver solutions to the challenges facing society and the animal protein industry. We want to play a key role in this transformation. That is why in Animal Nutrition & Health, we focus on the following six sustainability platforms to support our customer, the livestock value chain and other stakeholders to address the environmental challenges facing our planet:

- Improving the lifetime performance of farm animals
- Making efficient use of natural resources
- Reducing emissions from livestock
- Helping tackle antimicrobial resistance
- Reducing our reliance on marine resources
- Improving the nutritional quality of meat, milk, fish and eggs while reducing food loss and waste

To tackle these challenges, we have an extensive existing portfolio of carotenoids, feed enzymes and vitamin portfolio. For example, our enzymes help animals digest more efficiently and extract more nutritional value from the feed. They therefore still grow well even when consuming less. As a result, fewer natural resources, such as land and water, are needed for animal protein production. We are also rolling out our methane-reducing feed additive for ruminants, Bovaer® and further extending our capabilities in precision nutrition, building on the foundations of our globally recognized Optimum Vitamin Nutrition™ (OVN™) concept. More information on our solutions for sustainable animal farming can be found in this case study.

The growing demand for (personalized) health solutions

Despite the increasing attention being given to the central role of nutrition in supporting immune function and healthy growth and development, the world continues to face a wide range of food-related health issues and challenges. Today, according to the 2020 Global Nutrition Report, "One in every nine people in the world is hungry, and one in every three is overweight or obese. More and more countries experience the double burden of malnutrition, where undernutrition coexists with overweight, obesity and other diet-related non-communicable diseases (NCDs). The trend is clear: progress is too slow to meet the global targets. Not one country is on course to meet all ten of the 2025 global nutrition targets and just 8 of 194 countries are on track to meet four targets. Almost a quarter of all children under 5 years of age are stunted. At the same time, overweight and obesity are increasing rapidly in nearly every country in the world, with no signs of slowing."

While many low- and middle-income countries are still grappling with fundamental problems of food and nutrition security, the world's food systems as a whole are coming under growing scrutiny. Food poverty exists in even the richest countries of the world, as the continuing prevalence of food banks attests. Governments, NGOs, academia and the private sector worldwide need to develop evidence-based approaches that will deliver affordable, accessible and nutritious diets for all people in all countries at all stages of the life cycle.

The crucial role of nutrition in supporting immune function was thrown into sharper perspective than ever during the COVID-19 pandemic, accelerating the existing trend toward personalized health and nutrition. The pandemic simultaneously accelerated the use of digital communications in delivering these solutions, as consumers increasingly sought to boost their immune systems with the aid of fortified foods and dietary supplements.

There is a growing demand for **plant-based alternatives** alongside traditional meat and dairy products, as consumers search for foods that deliver an authentic eating experience without compromising on taste and texture. Whether for personal, health or sustainability reasons, or from plain curiosity, more and more people are adding plant-based options to their food choices and are adopting flexitarian, vegetarian, or vegan diets. At the same time, the importance of a quality nutritional profile is attracting increasing recognition.

There is also growing interest worldwide in **personalized nutrition** — science-based, data-driven nutritional solutions tailored to consumers' specific health goals and needs. Differences in age, genotype and health status mean that individuals can react in very different ways to the same foods. Personalized nutrition allows individuals to make dietary choices tailored to their specific needs, reducing their exposure to a wide range of non-communicable diseases and helping to lower healthcare costs.

Our solutions

We have expanded our existing **portfolio of nutritional ingredients** (such as food enzymes, nutritional lipids, carotenoids and cultures) through for example our 2020 acquisition of Glycom, the world's leading supplier of human milk oligosaccharides (HMOs) and our acquisition of capabilities in hydrocolloids between 2017 and 2019. Our offering in probiotics and prebiotics is driven by a mixture of in-house innovation (including partnerships) and targeted acquisitions. We also develop in-house and together with partners our own offerings in the fields of sugar-free sweeteners (EVERSWEET™), skin actives and sun filters.

As a global pioneer in the industrial production of vitamins, we cover the entire range of **critical micronutrients**, whose efficacy continues to reveal itself in new ways. We have, for example, a new range of Market-Ready Solutions (MRS) to enable our customers to launch new immunity-supporting products in a matter of months. Another example of an immunity-supporting solution is Ampli-D. Fast-evolving evidence suggests an association More information on how we accelerated the launch of nutritional solutions supporting immunity can be found in this case study. between vitamin D status and sensitivity to viral infections like COVID-19 incidence and severity. However, it can take up to several months for a person to reach an optimal vitamin D status. Ampli-D helps raise vitamin D levels three to five times faster, compared to vitamin D3.

In the field of **meat alternatives**, we offer a range of solutions for meat analogs that deliver proteins, authentic meaty taste and create succulent, chewy texture. At the same time, because our yeast extracts unlock full umami flavor, producers can reduce the amount of added salt in their recipes, improving the health appeal. In this case study on meat and dairy alternatives you can find more detail on how we enable tastier, more nutritious plant-based choices for consumers.

Partnerships

We have many **partnerships** that support and accelerate innovation in Nutrition.

Animal Nutrition & Health

In Animal Nutrition & Health we have, for example:

- The world-leading Feed Enzymes Alliance of DSM and Novozymes, which brings together the complementary competencies and technologies of our two companies to deliver feed enzyme innovation to our customers
- Veramaris, our 50:50 joint venture with Evonik, developed an algal oil rich in omega-3 fatty acids EPA and DHA for aquaculture and pet food without using wild-caught fish
- Our 75:25 partnership Yimante (Hubei Province, China), with Nenter, which strengthens our position in vitamin E, an essential ingredient in our animal nutrition premix solutions

Human Nutrition & Health

In Human Nutrition & Health partnerships include, for example:

- **Avansya**, our partnership with Cargill to bring sustainably produced, great-tasting, zero-calorie, cost-effective sweeteners to market faster

- Working with **Panaceutics** and **Wellmetrix** in the personalized nutrition area; we combine their competences with our world-class nutrition science, products and solutions. We aim to be the partner of choice for dietary supplements as well as food & beverage brand owners that wish to offer personalized and healthy nutrition
- The collaboration with **METEX NØØVISTA**, with whom we launched a bio-sourced form of cosmetic grade 1,3-propanediol (PDO), a multifunctional ingredient sourced entirely from non-GMO feedstocks

Nutrition performance 2020

Highlights 2020

- **Completed change program** 'Fit for Growth' which positioned us closer to our customers, while further reducing internal costs and complexities
- **Expanded our specialty nutrition portfolio** through three acquisitions — CSK, Glycom and Erber Group— for a combined outlay of around €1.7 billion
- **Continued to advance our innovation projects** including Bovaer®, Avansya, and Veramaris, while expanding our innovation pipeline with new programs such as Ampli-D™ and CanolaPRO®
- **Refocused our innovation approach** centered around four growth platforms: Pathways, Proteins, Prevention and Precision
- **Updated the long-term strategic plan,** including new opportunities in the 'Health through Nutrition' space for precision feeding in Animal Nutrition and personalization in Human Nutrition.

DSM Nutrition delivered a good performance in 2020, with 6% organic sales growth mainly volume driven. Together with the +3% contribution of the recent acquisitions (CSK, Glycom and Erber Group) and the -3% foreign exchange effect, total sales were up 6%.

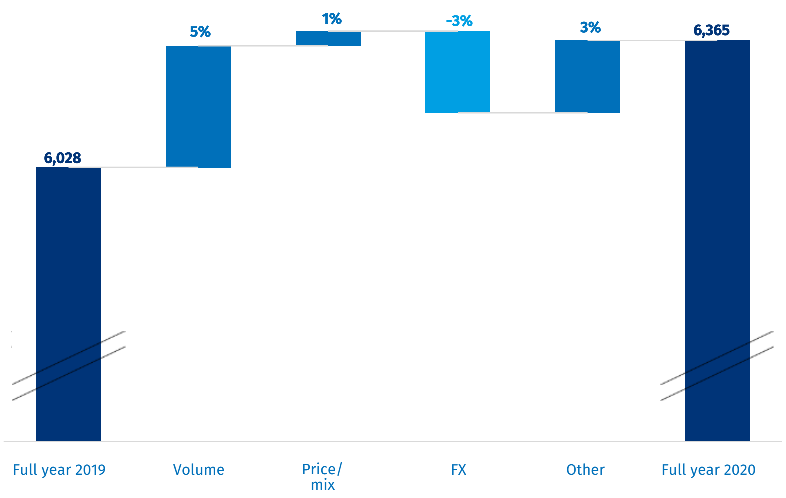
Nutrition reported 7% growth in Adjusted EBITDA, supported by higher volumes, with the contribution from the acquisitions (+4%) being offset by a negative foreign exchange effect (-4%). The Adjusted EBITDA margin was up at 21.0% versus 20.7% last year owing to strong sales in Human Nutrition.

x € million	**2020**	2019
Net sales from continuing operations:		
DSM Nutritional Products:		
- Animal Nutrition & Health	3,025	2,892
- Human Nutrition & Health	2,143	2,046
- Personal Care & Aroma Ingredients	404	425
- Other[1]	145	93
Total DSM Nutritional Products	**5,717**	**5,456**
DSM Food Specialties	648	572
Total Nutrition	**6,365**	**6,028**
Organic sales growth (in %)	6	2
Adjusted EBITDA	1,338	1,250
Adjusted operating profit	919	881
Capital expenditure	441	420
Capital employed at 31 December	8,308	6,731
ROCE (in %)	12.6	13.9
Adjusted EBITDA margin (in %)	21.0	20.7
R&D expenditure	234	218
Workforce at 31 December (headcount)	15,838	14,599

1 'Other' covers pharma and custom manufacturing & services activities.

Net sales bridge 2020

x € million



DSM Nutritional Products

DSM Nutritional Products consists of Animal Nutrition & Health, Human Nutrition & Health, and Personal Care & Aroma Ingredients.

DSM Nutritional Products saw a slightly positive impact from COVID-19 overall. Human Nutrition saw a strong increase in demand for immunity-optimizing products. In Animal Nutrition, overall demand growth was good but COVID-19 impacted sales over the quarters due to stocking effects at customers. Personal Care was weak due to lower demand for sun care and cosmetics, while Aroma Ingredients saw good demand for detergents and disinfectants.

Fit for Growth

Early in the year we launched the Fit for Growth program in DSM Nutritional Products. By simplifying the operating model and further improving business steering, the program was designed to better serve customers and respond to the differentiated needs of their respective end-markets. At the same time, it created a more efficient organization, which helped us to adjust to a more challenging environment. The new organizational structure is in place and we are working on further building out our specialty business.

Health & Nutrition Campus

In November, we announced the construction of the state-of-the-art DSM Nutritional Products Health & Nutrition Campus, which includes a new innovation building in Kaiseraugst (Switzerland). Accelerating innovation in the field of nutrition, health and bioscience, this innovation hub will provide modern research laboratories and collaborative workplaces to maximize interaction and the agility between our scientific competences and business units to further boost our customer-centricity for joint solution development. The Campus represents our long-term commitment to enforce DSM’s position as an end-to-end partner in the nutrition and health markets.

> *“2020 marked the fifth year in a row that we grew Sales and Adjusted EBITDA in line with our long-term objectives. On top of that, we made good strategic progress towards commercialization of our key innovation projects in both Animal and Human Nutrition & Health.”*
>
> *Chris Goppelsroeder, President & CEO DSM Nutritional Products and member of the DSM Executive Committee*

Animal Nutrition & Health

Highlights 2020

- **Delivered 8% organic growth**, supported by good sales in poultry and pork and a good performance in ruminant and aquaculture.
- **Uninterrupted supply** during the COVID-19 pandemic supported by our well distributed global premix supply network
- **Acquisition of Erber Group**'s Biomin and Romer Labs, expanding our range of higher value-add specialty solutions and access to diagnostics technology
- **Opening** of our seventh Animal Nutrition & Health premix plant and upgrading of our Vitamin E Yimante (partnership with Nenter) site in China
- **Ramping of output** of Veramaris facility in Blair (Nebraska, USA) and expansion into shrimp feed and pet food
- **Launch of strategic initiative** 'We Make It Possible' to lead transformation in sustainable animal protein production worldwide

About Animal Nutrition & Health

Animal Nutrition & Health serves the **global feed industry** with innovative and sustainable nutritional solutions. A pioneer since the earliest days of feed additives, we draw on the latest science to provide a unique portfolio that runs from vitamins through carotenoids to cutting-edge mycotoxin risk management solutions, feed safety diagnostic solutions, eubiotics, and feed enzymes. We aim to make animal farming more sustainable by reducing GHG emissions and the pressure on the environment. At the same time, we strive to ensure that farmers can earn a decent living and that people will have access to affordable proteins. For more information on our Animal Nutrition & Health strategy and how we make animal farming more sustainable can be found in the Nutrition strategy section.

Animal Nutrition & Health performance

Animal Nutrition delivered 8% organic growth, equally driven by volume and price. The first quarter saw a strong COVID-19 accelerated purchasing effect that faded through the second and third quarters as customers unwound their inventories. In the fourth quarter, volumes were normalized at 5%.

Poultry saw good sales growth overall with increased demand as the COVID-19 lockdowns triggered higher demand for easy-to-prepare proteins. This growth was partly offset by softening demand in some emerging economies due to a general loss of household income. Pork saw good demand with production in China picking up as the effects of African Swine Fever recede and the steady rebuilding of the swine population continues with increased professionalization of farming. Together with regulatory changes in China that require the reduction of the use of antibiotics in animal feed, these developments strengthen our value proposition in the Chinese market with its higher value-added nutrition and gut health solutions.

While global beef and aquaculture demand were in general soft due to their significant exposure to food service channels, We performed well in these categories. We saw good sales growth in ruminants as Brazilian beef exports remained strong and demand for farmed salmonids was solid. Pet food saw strong demand throughout the year.

Erber Group, which was consolidated from the fourth quarter of 2019, made a strong contribution in its first quarter within DSM, realizing €81 million sales, with a total Adjusted EBITDA of €18 million.

Chicken and eggs: an important protein source during COVID-19

Our close collaboration with our **poultry customers** around the world to protect the supply of key micronutrients and nutritional additives to broiler flocks resulted in a good performance for the year. Eggs played an important role in providing consumers with quality protein during COVID-19. Our partnership with the International Egg Commission (IEC) led to the development of working groups on sustainability and egg nutrition in 2020. This approach delivered improved annual sales of our egg solutions.

Successful navigation of African Swine Fever (ASF) crisis

African Swine Fever (ASF) is one of the severest crises experienced by animal farming in recent times. We navigated it well during 2020, thanks to our integrated and diversified business model. **Managing ASF** has called for improved biosecurity, the accelerated adoption of technology, and an increased level of professionalization across the entire pork industry. DSM is benefiting from these industry developments, not only in China but also in other countries, such as Vietnam and the Philippines.

Drive for more sustainable aquaculture and growing interest for sustainability in pet food

The drive for **more sustainable aquaculture** continues, and we are well placed to capitalize on this with our purpose-led innovation activities and our nutritional products and solutions portfolio.

Ruminants: focus on feed efficiency and immunity

The year 2020 was marked by a strong focus on raw material utilization and feed efficiency in beef production in the US and Brazil; significant engagement from dairy producers in the areas of lifetime performance, immunity and fertility programs in Europe, the US, Brazil and East Asia; and growing uptake for our rumen performance solutions addressing antimicrobial resistance in Europe, South America and China.

Expansion of production in China

In November, we announced the opening of our seventh Animal Nutrition & Health **premix plant in China**, situated in Baishazhou Industrial Park, Hengyang City (Hunan Province, China). This latest facility brings together our advanced processes and innovative solutions to promote sustainable animal protein production in the Chinese market. The opening of the new plant also marked the official launch of the first DSM Vitamins Academy. Serving as a new platform for market outreach and education, the Academy will share the latest scientific research and practices with players across the animal feed and husbandry value chain.

The **vitamin E plant** owned by the DSM–Nenter joint venture (Yimante) in China started production at the end of December 2020. Output is planned to gradually ramp up during the course of 2021.

Acquisition of Biomin and Romer Labs

On 1 October 2020, we acquired Erber Group's **Biomin and Romer Labs**. Erber Group's specialty animal nutrition and health business, Biomin, specializes primarily in mycotoxin risk management and gut health performance management, while the Romer Labs business focuses on food and feed safety diagnostic solutions. The acquisition expands our range of higher value-add specialty solutions and further strengthens our expertise and reputation as a leading provider of animal health and nutrition solutions for farm productivity and sustainability, with an emphasis on emissions reduction, feed consumption efficiency, and better use of water and land.

Ramping up production of Veramaris® algal-based omega-3

We had commenced commercial-scale production of **algal-based omega-3** at our Veramaris facility in Blair (Nebraska, USA) in 2019. Our proprietary technology delivers a breakthrough in the cultivation of marine algae naturally rich in EPA and DHA omega-3, facilitating production on an unprecedented scale. In 2020, we started to generate sales and began ramping up output from this facility. We additionally started work on incorporating **Veramaris®** into feed for additional species such as shrimp, as well as into pet food. Veramaris was chosen as the omega-3 partner by Feed-X, the feed innovation accelerator founded by the World Wildlife Fund (WWF) which aims to see 10% of the global feed industry adopt alternative feed ingredients into value chains.

Combating emissions from ruminants with Bovaer®

We commenced the process of registering our **Bovaer®** methane inhibitor solution in Europe, entering into dialogue with the European Food Safety Authority (EFSA) subsequent to the submission of the registration dossier in 2019. Bovaer® is the most extensively studied and scientifically proven solution to the challenge of enteric (burped) methane from ruminants to date. We were pleased that at the end of 2020, a two-year large-scale trial in beef cattle in Alberta (Canada) successfully demonstrated that Bovaer® can be included in commercial feedlot diets to reduce methane emissions by up to 80%, without negative effects on animal health and performance. Over the past ten years, 35 on-farm beef and dairy trials have been conducted across the globe, delivering convincing data from over 10,000 animals and in the context of various feeding systems. A further positive development was the announcement of the collaboration agreement with VALIO to significantly reduce the carbon footprint of dairy production in Finland.

Enabling the replacement of antibiotic growth promoters (AGPs)

Balancius™, developed together with our long-term alliance partner Novozymes, is an innovation that helps farmers tackle the issue of antimicrobial resistance (AMR). Balancius™ supports digestion and gastrointestinal functionality and improves animal performance. In 2020, the Chinese Ministry of Agriculture, for example, introduced legislation to withdraw antibiotic feed additives as growth promoters. This move was positive for innovations such as Balancius™, but also for our existing eubiotics solutions, such as VevoVitall®, which combats the negative activity of micro-organisms on feed.

Development of Sustainability Service and Precision Nutrition platform

Effective measurement at farm level is essential to enable farmers to work on sustainability topics. The same applies for Precision Nutrition; helping farmers to improve the efficiency and effectiveness of their farm practices. To this end, in 2020, we started **developing a service** that enables farmers to see their own **environmental footprint** in its entirety. Providing this level of transparency will create opportunities for farmers to reduce emissions and differentiate themselves from less sustainable competitors. Additionally, we made good progress in advancing our Precision Nutrition platform in poultry in the USA to facilitate diagnostic testing to address health challenges.

Human Nutrition & Health

Highlights 2020

- **Dietary Supplements and Pharma** recorded a very strong performance
- **Uninterrupted supply** during the COVID-19 pandemic
- **Rise in demand** for immunity-optimizing ingredients stimulated by COVID-19
- **Acquisition of Glycom A/S**, the world's leading supplier of human milk oligosaccharides
- **Full integration** of personalized nutrition platform AVA and start of Hologram Sciences Inc. venture
- **Launch of enhanced purpose-led** brand strategy designed to support continuing growth trajectory based on high-quality products, customized solutions and expert services

About Human Nutrition and Health

Human Nutrition & Health provides solutions for early life nutrition, dietary supplement, pharmaceutical, medical nutrition, nutrition improvement and food & beverage markets. We serve these industries with:

- a portfolio of high-quality products (vitamins, nutritional lipids, minerals, carotenoids, human milk oligosaccharides (HMOs), nutraceuticals, digestive enzymes, probiotics and prebiotics, as well as active pharmaceutical ingredients (APIs)
- a suite of customized solutions (premix, Market-Ready Solutions and personalized nutrition)
- a range of expert services

Human Nutrition & Health performance

Human Nutrition delivered 5% organic growth, with volumes up 7%. Dietary Supplements and Pharma recorded a very strong performance throughout the year, as COVID-19 drove strong consumer demand for immunity-optimizing products. The Food & Beverages segment also performed well with the strong demand for packaged food recorded in the first two quarters normalizing in the second half. Early Life Nutrition sales were soft especially due to weak market conditions in China, the biggest market for infant formula.

Prices significantly improved as the lower vitamin C price effect faded during the year, while Early Life Nutrition saw lower contractual prices in 2020.

Total sales were equal to the organic growth at 5%, as the -2% foreign exchange effect fully offset the +2% contribution from the Glycom acquisition.

Glycom, the world's largest developer and producer of human milk oligosaccharides (HMOs), which was consolidated as of 1 April 2020, delivered €43 million sales with an Adjusted EBITDA of €21 million.

These results reflected ongoing soft market conditions in Early Life Nutrition, with COVID-19 also impacting Glycom's development work at customers. The work on its second and third generation HMOs continued at pace, with Glycom strengthening its innovation pipeline and reinforcing its industry leadership in early life nutrition.

Expansion along the value chain

A growing proportion of our revenue now comes from **expert services**, especially for the pharma market, and **customized solutions**. Our customized solutions — besides premixes — include Market-Ready Solutions (MRS) that address diverse health or lifestyle benefits. They also include the personalized nutrition sector, a key pillar in our nutrition strategy.

Growth in dietary supplements

The COVID-19 pandemic increased consumer focus on **immunity and overall health**, heightening awareness of the health benefits associated with brands and intensifying the significance of e-commerce. Additionally, a fast-evolving body of evidence suggests an association between vitamin D status and sensitivity to viral infections like COVID-19 incidence and severity. As a result, the health benefit categories that grew most due to COVID-19 were immunity and mental well-being. We were well prepared to meet this rise in demand, helping our dietary supplement customers around the world to launch new immunity-supporting products in record time. Important achievements in this context in 2020 included:

- Rapid forecasting of consumer demand to enable our customers to keep up their supply of products to their markets. Compliance with unprecedented demand peaks, at times up to 30% in a month
- Specific ingredients to enhance our customers' existing product ranges with immunity offerings including Ampli-D, our three to five times faster-acting vitamin D
- Complete new range of Market-Ready Solutions to enable our customers to launch new immunity-supporting products in a matter of months
- Immunity Probiotics Market-Ready Solution range via our BioCare Copenhagen organization for our customers focusing on the pharmacy channel
- Global launch of Culturelle® immune defense product line for both adults and children and the launch of the Culturelle® brand in the Brazil market
- Focus on e-commerce and direct-to-consumer channels to capitalize on the shift in consumer shopping behavior

Pharma and Medical Nutrition growth

Our growth in the **pharmaceutical sector** came from implementing our value selling strategy, while big steps were made in operational and regulatory excellence. We continued to outperform the **medical nutrition** market driven by premix growth and our immunity supporting ingredients.

Acquisition of Glycom in Early Life Nutrition

In February 2020, we announced the acquisition of Glycom A/S ('Glycom'), the world's leading supplier of human milk oligosaccharides (HMOs). This acquisition expanded our leadership position in the **early life nutrition** space. There is also significant interest in the use of **HMOs as a dietary supplement** and potentially in **food & beverage** applications. Glycom is a major pioneer in HMOs, with a rich, science-backed product pipeline (GlyCare™) and the only fully integrated HMO production facility in the world. The GlyCare portfolio currently comprises six HMOs that are commercially available across 165 countries. The exciting potential of cross-innovation outside Early Life Nutrition was highlighted in 2020 through the launch by DSM's i-Health business of a new Culturelle® product range containing HMOs to support a healthy gut microbiome and helping the management of irritable bowel syndrome.

Food & Beverage supported by increased focus on health

We have developed and launched **concepts supporting immune health,** meeting the demand for food and beverages designed to support immunity, that have grown in popularity. An **increased focus on health** is triggering a windfall in consumer health and wellness spending, and has positively impacted our growth.

Personalized nutrition: Integration of AVA and start new Hologram Sciences venture

At the end of 2019, we acquired AVA, a **personalized nutrition platform**, to further expand our offering and meet growing consumer demand in the Dietary Supplement space. During 2020, AVA was integrated into our new US-based personalized nutrition venture — Hologram Sciences, Inc. — bringing together all of the necessary capabilities needed to develop end-to-end turnkey personalized nutrition solutions that are commercially validated with consumers.

Personalized nutrition is the next frontier in health. We are creating a new business in nutritional science, diagnostics and advanced recommendation technology that will ultimately create consumer-facing concepts for targeted health conditions. Everybody (and every body) is different, and people who are conscious about health increasingly want individually tailored solutions. Hologram Sciences, Inc. will build on recent advances in diagnostics and technology to create science-based, data-driven solutions.

Nutrition Improvement

Our activities in the field of nutrition education continued in 2020, highlighting the importance of multiple micronutrient supplementation (MMS) for vulnerable populations, especially in the light of the COVID-19 pandemic. UNICEF, for example, recommended the use of MMS for pregnant women, to help meet their increased micronutrient needs and support healthy pregnancy outcomes during the pandemic.

'Products with Purpose'

In October, we unveiled our enhanced purpose-led brand strategy 'Products with Purpose'. Based on the targeted development of new products, selected acquisitions, and a strategic focus on key market segments, the new strategy is designed to support our continuing growth trajectory.

Personal Care & Aroma Ingredients

Highlights 2020

- Aroma ingredients sales were supported by increased demand for detergents and disinfectants.
- Launch of sustainable innovations and services in personal care to meet the trend toward sustainable consumption
- Improved digital presence, distributor and lead management, as well refreshed positioning externally

About Personal Care & Aroma Ingredients

Personal Care & Aroma Ingredients offers solutions for customers in the personal care, home care, and fine fragrance markets. Our extensive portfolio includes aroma ingredients, vitamins and natural bio-actives, as well as UV filters, peptides and polymers. Our solutions support the health and beauty needs of an aging population with various skin and hair types around the world, and address increasing concerns around global public health issues such as air pollution and skin cancer.

Personal Care & Aroma Ingredients performance

Personal Care & Aroma Ingredients recorded -4% organic sales development in 2020, due to weak demand in sun protection and cosmetics which started to recover in the fourth quarter. Sales of Aroma Ingredients were good throughout the year, supported by increased demand for detergents and disinfectants.

Resilience in the face of COVID-19

Sales of fine fragrances declined due to new patterns of working from home, physical distancing, and mask-wearing during 2020. However, this effect was offset by increased uptake for household cleaning products, which drove sales of aroma ingredients in this sector. Sun care products were affected by the pandemic's restrictive effect on outdoor recreational activities and tourism. This impacted the market in UV filters for sun protection.

On the upside, COVID-19 accelerated the trend toward conscious, sustainable consumption in personal care. We responded with the launch of sustainable and resilient innovations and services for sun, hair and skin care applications such as the innovative glow-enhancing peptide, SYN-GLOW™.

We also upgraded our free online formulation lab tool Sunscreen Optimizer™ by adding a function for easily evaluating the eco-profile of products.

Partnerships and portfolio expansion

Through our new partnership with METEX NØØVISTA, we launched a sustainable form of cosmetic grade 1,3-propanediol (PDO), a multifunctional ingredient sourced entirely from non-GMO feedstocks. This bio-sourced cosmetic grade of PDO imparts preservative boosting properties while respecting the skin microbiome.

We also signed a collaboration and commercialization agreement with **S-Biomedic**. With this agreement we aim to bring a new probiotic technology-based skin care active for the treatment of acne to market.

Growth of e-commerce and continued sustainability drive and improved go-to-market

Niche and Indie brands with an e-commerce offering and a social media presence gained leverage in 2020, and there was a positive impact from companies hastening to build online platforms. To address this trend, we improved digital presence, distributor and lead management, as well refreshed our positioning externally.

We completed the roll-out of our **Imp'Act Card™ program** — a tool to provide customers data around four pillars of sustainability: environmental impact, social impact, traceability and identity. We additionally introduced multiple programs to improve **how we go to market**, including improving our digital presence and our distributor and lead management, as well as rolling out our refreshed positioning externally.

DSM Food Specialties

Highlights 2020

- **Delivered 4% organic growth**, with good demand for savory and dairy throughout the year
- **Integration of CSK**'s specialty dairy solutions business
- **Successful launch** of EVERSWEET® sweetener across multiple segments in initial markets

About DSM Food Specialties

DSM Food Specialties is a **leading global supplier** of specialty food enzymes, cultures, probiotics, bio-preservation, hydrocolloids, sugar reduction, and savory taste solutions to customers in the food & beverage industry in dairy, baking, beverages, and savory. Our ingredients and solutions are widely used to create a broad range of food products, from grocery favorites such as yogurt, cheese and soups to specialized products including gluten-free bread and beer, plant-based meat alternatives and dairy alternatives, lactose-free milk, and sugar-reduced foods and beverages.

Demand for our products is driven by **five main market trends**: enhanced taste experience; improved health and wellness; sugar reduction; more efficient and sustainable production; and reduction of food loss and waste. At the center of it all is the consumer, who increasingly seeks food that is both healthy and eco-friendly.

With **over 150 years' experience** in biosciences and fermentation, we aim to enable better food for everyone, helping to make existing diets healthier and more sustainable, and giving growing numbers of people around the world access to affordable, quality food.

DSM Food Specialties performance

Food Specialties delivered a good performance (+4%) with an overall neutral effect from COVID-19 on sales. Demand for especially savory and dairy was good throughout the year, while demand for hydrocolloids was soft.

CSK acquired at the end of 2019, strengthened Food Specialties' portfolio of taste, texture and bio-preservation solutions for semi-hard cheeses. CSK recorded a strong performance in 2020, completing the integration ahead of schedule, delivering €69 million of sales and a total Adjusted EBITDA of €16 million, well ahead of the business plan for the initial year.

Integration of CSK's specialty dairy solutions business

In dairy, our largest segment in food & beverages, the integration of CSK's specialty dairy solutions business, acquired at the end of 2019, progressed well. The **synergies** generated exceeded our expectations regarding both top- and bottom-line performance. This highly complementary acquisition has allowed us to add a state-of-the-art dairy cultures production facility in the strategically important EMEA region; to broaden our portfolio of specialty ingredients; and to further deepen our application expertise. This strengthens our ability to deliver solutions tailored to the precise needs of cheese and fresh dairy producers worldwide.

Fermentative Stevia

The **Avansya** partnership with **Cargill** for fermentative Stevia had a good first full year of operation after the commercial-scale fermentation facility came on stream at the end of 2019. Consumer end-products including the EVERSWEET®

sweetener were launched successfully across multiple segments by our customers in our initial markets, with many more product development projects underway.

Baking and Beverages

In baking, we saw increased interest in including omega-3 fatty acids in bread and baked goods. Meanwhile the new baking enzymes introduced in 2019 to help customers extend freshness and reduce food waste garnered a prestigious Ringier Technology Innovation Award.

Production efficiency improvements and a reduced environmental footprint remain major drivers in the beverages sector. We introduced a new enzymatic solution to help brewers differentiate by means of new flavors as well as to increase brewing flexibility and capacity through increased use of locally available adjuncts.

Strong demand in savory taste ingredients and growing market for plant-based, vegetarian and vegan options

There was strong demand for our savory taste ingredients as consumers, especially in Asia, turned to flavor-filled store-cupboard essentials such as noodles and soups.

The market for plant-based, vegetarian and vegan options alongside traditional meat and dairy choices is booming. Increasing numbers of consumers are adopting a 'flexitarian' approach to mealtimes. We launched comprehensive portfolios of integrated solutions for both meat and dairy alternatives, leveraging the full range of our capabilities across taste and flavor solutions including sodium and sugar reduction, texturizing hydrocolloids, vitamins and micronutrients, and enzymatic processing aids. For more information, see the plant-based case study on this topic.

Partnership with Avril to bring CanolaPRO™ to market

Our innovative, plant-based protein CanolaPRO™ also provides an excellent basis for meat and dairy alternatives, offering versatile functional benefits in terms of taste and texture, as well as being a nutritionally complete protein. In 2020, we established the Olatein joint venture together with Avril to produce and bring CanolaPRO™ to market, with commercial introduction expected in 2022. This partnership draws on the unique know-how of both partners, including our patented process and technology for extracting high-quality protein from canola meal and Avril's 35-year legacy in oilseed and protein crop production. Construction of a state-of-the-art production facility is underway in Dieppe (France).

Hydrocolloids demand impacted by COVID-19

Another growth platform is hydrocolloids — thickeners and stabilizers that dissolve, disperse or swell in water to provide a broad range of important functionalities and physical attributes including gelling, texture, mouthfeel, viscosity and suspension. Our hydrocolloids are primarily delivered in the form of plant-extracted pectin and fermentation-derived bio-gums. Both are used as gelling and stabilizing agents in a variety of foods and beverages. Demand for our hydrocolloids was impacted in 2020 by a drop in overall demand for on-the-go foods and beverages as a result of the COVID-19 pandemic. Interest grew meanwhile in their application in meat and dairy alternatives.

Materials

At a glance

- €1,518 Net sales from continuing operations versus €1,744 in 2019 (in millions)
- -12% Organic sales development (continuing operations) versus -9% in 2019
- 17.9% Adjusted EBITDA margin (continuing operations) versus 21.3% in 2019
- 100% renewable electricity used in the manufacture of materials for Apple's products as of 2020
- 100% of Engineering Materials portfolio to contain alternatives with >25% recycled and/or bio-based content by weight in final product by 2030
- 1 metric ton of bio-based Dyneema® generates 5 tons less CO_2eq compared to 1 metric ton of fossil-based Dyneema®

"In a year of significant market challenges, our employees, together with our customers and partners, have demonstrated remarkable resilience, keeping us on track to deliver a more agile and customer-driven growth organization."

Helen Mets, Executive Vice President DSM Materials and member of the DSM Executive Committee

About DSM Materials

Our Materials cluster comprises DSM Engineering Materials and DSM Protective Materials. The cluster comprises a high-quality portfolio of specialty materials for global end-markets including electrical components and electronics, automotive, food packaging, medical, personal protection, commercial marine, and apparel. Through our advanced and sustainable solutions, we are meeting demand for safer materials, greater efficiency and improved environmental performance.

Sale of DSM Resins & Functional Materials

On 30 September 2020, we announced an agreement to sell DSM Resins & Functional Materials (RFM), including DSM Niaga®, DSM Additive Manufacturing and the coatings activities of DSM Advanced Solar to Covestro AG, a specialty materials player, for an equity value of €1.6 billion. The combination of RFM and Covestro AG will create a business of enhanced scale and technological capability that will benefit existing and potential customers as well as its employees by providing a stronger platform for sustainable growth. These businesses join a new home with a leading position in their sector, a track record of investment, and values closely aligned with our own, including sustainability and care for people. We expect to close the transaction in the first half of 2021. As of the third quarter of 2020, the divested businesses were classified as 'held for sale', and the net result from these discontinued operations is reported separately in the consolidated financial statements in Note 3 Change in the scope of the consolidation.

Agility to Grow

As part of a wider restructuring initiative to leverage synergies and increase operating agility without compromising the potential of the business, we started as of September to execute our Agility to Grow program. This will deliver annualized recurring cost savings of €15–20 million in Materials, excluding the portion previously attributable to the Resins and Functional Materials businesses.

Trends

Adapting to continuously changing conditions

Our expertise in materials science, combined with our close connection to customers, helps us produce many of the engineering thermoplastics and high-performance fibers that appear in products central to our everyday lives — from cars and electronics through packaging and construction to sports, medical equipment and the marine sector. 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.**

We operate in an **increasingly volatile world**, in which we need to adapt to continuously changing macro-economic conditions, such as the COVID-19 pandemic. Our customers' needs are changing rapidly, innovation cycles are getting shorter, and **speed to market** has never been more important.

Trends in automotive, electronics, medical and healthcare

Advanced materials with **ever-higher performance levels** are required across a wide range of applications and industries today:

- In **automotive**, society's urgent requirement for sustainable transportation systems calls for higher-performing materials that enable autonomous, lightweight and more energy-efficient automotive design
- In **electronics**, consumers are increasingly seeking 'smart' connected, customized products that require high-performance materials in order to enable device connectivity, convenience, and efficiency
- In **medical and healthcare applications**, there is increased demand for products to protect the body, such as medical gowns and medical face masks; this trend has been increased by the effects of the COVID-19 pandemic

Other key trends

- Facilitating the creation of a **circular economy**: across the globe, circular economy concepts such as bio-based materials, end-of-life material recovery and closed-loop solutions are the hot topics in sustainability dialogues; consumer sentiment and regulatory pressure are combining to stimulate the development of materials that can drive the transition toward a circular economy — materials that are bio-based, recycled-based, reusable and recyclable
- The continued importance of **safety**: people are increasingly aware of the importance of safety, including safe manufacturing, product safety and product stewardship; we offer solutions that eliminate or reduce the use of hazardous substances

Innovation & Sustainability

Our innovations are focused on **delivering sustainable solutions** to meet customer demands for a better environmental footprint and the transition toward a circular and bio-based economy.

Taking the next step to increase sustainability value

In 2020, our Materials businesses took the next steps in implementing innovation programs to **reduce the environmental impact** of their operations and to increase the sustainability value they deliver. Examples include:

- DSM Engineering Materials made a commitment in 2019 that it will offer a **full portfolio of alternativ**es that contain at least 25% recycled- and/or bio-based content by 2030
- As intermediate steps, we launched **mass balance bio-based grades** of our Stanyl® PA46 and Akulon® PA6 portfolio® as well as a 100% bio-based EcoPaXX® PA410 grade in 2020
- We also introduced **recycled-based** Akulon® PA6 for flexible packaging solutions
- DSM Protective Materials has introduced Bio-based Dyneema® and is committed to sourcing at least 60% of its raw materials from bio-based feedstocks by 2030

Partnerships driving sustainable innovation
It takes partnerships to drive a circular and bio-based economy. We have many partnerships and coalitions that support and accelerate customer-driven sustainable innovation — for example, value-chain partnerships to enhance the transition toward a more circular and bio-based economy. We established, for example:

- An industry coalition comprising customers, waste processors and recycling companies to address the recycling of products made with Dyneema® fiber; moreover, an end-of-life program was set up with the goal of recycling the materials in a closed loop through continuous use and recovery
- A partnership with our strategic supplier SABIC to enable the transition toward bio-based Dyneema®
- Partnerships with various companies in our value chain to accelerate the transition toward alternatives for our engineering materials portfolio based on bio-based waste and/or plastic-waste-based feedstock; SABIC, Neste and Fibrant/Highsun were among these partners.

Materials performance

Highlights 2020

- Materials was significantly impacted by COVID-19, but saw a strong recovery during the fourth quarter
- Announced sale of DSM Resins & Functional Materials and associated businesses, building on our approach of actively managing our businesses
- Launch of restructuring initiative to leverage synergies, increase operating agility and deliver cost savings of €15–20 million annually
- Strong progress toward bio-based and recycled-based alternatives across our Materials cluster

Materials financial results 2020

In response to the sudden drop in demand at the end of the first quarter owing to the pandemic, DSM acted promptly to minimize capex and operating costs. After the summer a new costs savings program started, which is part of an ongoing wider structuring initiative to leverage synergies and increase operating agility.

At the same time, Materials continued to develop innovative solutions aimed at addressing Sustainable Living challenges, to create higher-growth, high margin opportunities for its specialty activities.

In the third quarter of 2020, DSM announced an agreement to sell DSM Resins & Functional Materials, including DSM Niaga®, DSM Additive Manufacturing and the coatings activities of DSM Advanced Solar to Covestro AG for an Equity Value of €1.6 billion. The transaction is expected to close during the first half of 2021 and DSM expects to receive approximately €1.4 billion net in cash following closing. As of the third quarter of 2020, the divested businesses are classified as 'held for sale' and the net result from these discontinued operations is separately reported in the income statement.

Materials' performance was significantly impacted by COVID-19, resulting in -6% volume development in 2020. Demand deteriorated abruptly at the end of the first quarter. Following a slow recovery over the summer, Materials saw a strong improvement from September onwards, especially in Engineering Materials, directly related to demand for automotive.

Prices were down 6%, mainly reflecting lower input costs in DSM Engineering Materials.

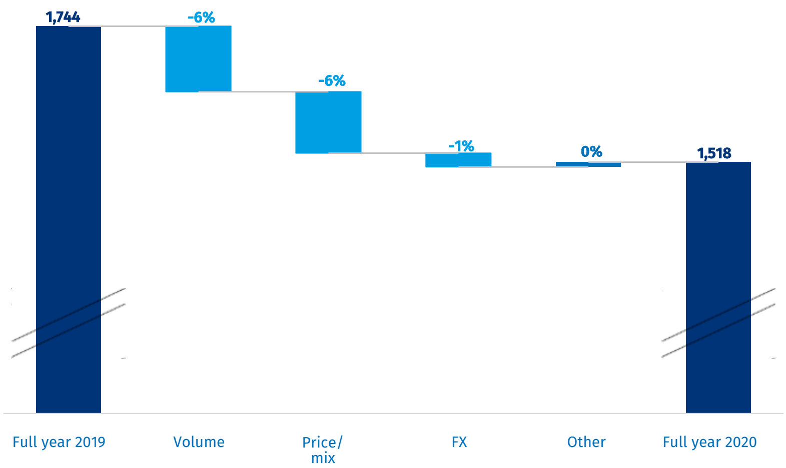
Full year Adjusted EBITDA was -27% compared to previous year. This was driven by a negative operational leverage and particularly lower volumes in high margin specialties which recorded a strong performance in same period last year. Foreign exchange had a small negative impact.

The Adjusted EBITDA margin was 17.9% compared to 21.3% in 2019.

x € million	2020	2019
Net sales from continuing operations:		
DSM Engineering Materials	1,217	1,406
DSM Protective Materials	301	338
Total	1,518	1,744
Organic sales growth (in %, continuing operations)	(12)	(9)
Adjusted EBITDA from continuing operations	272	372
Adjusted operating profit from continuing operations	168	270
Capital expenditure	63	84
Capital employed at 31 December	953	1,060
ROCE (in %, continuing operations)	16.4	25.0
Adjusted EBITDA margin (in %)	17.9	21.3
R&D expenditure	73	73
Workforce at 31 December (headcount)	2,857	2,951

Net sales bridge 2020

x € million



DSM Engineering Materials

Highlights 2020

- Softness in the global automotive segment, driven by COVID-19, negatively impacted volumes
- Launched strategy to accelerate profitable growth while further diversifying into medical and food & water applications
- Continued shift toward higher-value, sustainable, bio-based and recycled-based material alternatives and/or materials with an improved environmental footprint
- Futureproofed and expanded the capacity of our high-performance materials compounding plant in Evansville (Indiana, USA)

About Engineering Materials

DSM Engineering Materials provides high performance specialty materials that address key market needs in automotive and electronics. Besides serving these two main sectors, we offer sustainable engineering materials to specialized industries including water management, health/medical, electrical power distribution, food utensils and multilayer flexible food packaging.

Engineering Materials performance

Volumes were down -6% in DSM Engineering materials, driven by automotive.

Accelerating future growth

In 2020, we launched a strategy focused on **accelerating profitable topline growth** while improving cost and margin management. This strategy also involves further expanding and diversifying into **high-growth, high-value markets** including medical and food & water. In **medical**, we provide advanced materials such as Arnitel® for medical gowns and respiratory tubes, and Arnite® for inhaler device components. With this we also play a crucial role in helping to combat the COVID-19 pandemic. In **food & water**, we supply advanced materials for components in faucets, kitchen utensils & appliances, food dispensers and food conveyor belts. Our solutions help our customers create better, safer and more sustainable end-products.

The quest for new and more sustainable forms of mobility, including electric vehicles, remains a key driver for our business. During 2020, we continued to shift our portfolio toward **higher-value, specialty materials** with advanced grades and improved properties. We increased our number of differentiated grades, offering high performance in areas as diverse as heat resistance, thermal conductivity, electromagnetic interference shielding, electrical insulation performance, halogen-free flame retardancy, and hydrolysis resistance.

Investing for the next generation of advanced materials

We also started expanding the capacity of our **high-performance materials compounding plant** in Evansville (Indiana, USA). The site will offer advanced material solutions, including bio-based thermoplastics, for electrification, metal replacement and weight reduction across multiple industries.

Advancing the circular and bio-based economy

We launched several new solutions in support of reducing carbon footprint and advancing the circular and bio-based economy. In terms of carbon footprint reduction, we will be offering our existing Akulon® PA6 portfolio with a **50% reduction in carbon footprint** — the lowest PA6 carbon footprint in the market.

We continued our ambitious **sustainability program** designed to offer a full portfolio of alternatives that contain at least 25% recycled- and/or bio-based content by 2030. For example, we introduced **bio-based Stanyl® PA46 and Arnitel® TPC and bio-based and recycled-based Akulon® PA6 grades**. We also engaged with companies in our value chain to explore and further develop bio-based, chemical and mechanical recycling routes.

In alignment with Apple's Clean Energy Program, we fully transitioned to **100% electricity from renewable resources** in the manufacture of our materials for **Apple** products at the beginning of 2020.

DSM Protective Materials

Highlights 2020

- **Personal protection** activities impacted by COVID-19, with delays in large orders by local authorities and governments
- **Launch** of world's first-ever bio-based UHMWPE fiber, bio-based Dyneema®
- **Establishment of coalition** for the recycling of end-of-life Dyneema®-based products

About Protective Materials

DSM Protective Materials is the world's only global and backward-integrated producer of **ultra-high molecular weight polyethylene (UHMWPE)** products. Our UHMWPE premium product brand, **Dyneema®**, the world's strongest fiber™, is 15 times stronger than steel on a weight-for-weight basis, 40% stronger than aramid, yet light enough to float on water. These characteristics make it suitable for a wide range of critical applications including personal protection, workwear, sports apparel, outdoor equipment, ropes and slings, synthetic chains, and nets for the aquaculture and renewable energy sector. Besides Dyneema®, DSM Protective Materials consists of the brand Trosar™, which is our value offering for UHMWPE fibers and unidirectional laminate (UD).

Protective Materials performance

Volumes were down -9% in DSM Protective Materials, driven by Personal Protection.

Launch of bio-based Dyneema®

As part of our commitment to use at least 60% bio-based feedstock by 2030, we launched the world’s **first bio-based UHMWPE fiber** in 2020. Bio-based Dyneema® fiber offers exactly the same performance as conventional Dyneema®. Production of 1 metric ton bio-based Dyneema® generates 5 metric tons less CO_2eq compared to the same volume of fossil-based Dyneema®.

Recycling end-of-life Dyneema®-based products

Together with leading partners across several industries, we established a coalition to address the **recycling** of end-of-life Dyneema®-based products in 2020. The coalition will provide a platform to share knowledge, resources, and technological solutions with the aim to close the loop on the world’s strongest yarn.

Launch of Trosar™

In 2020, we launched **Trosar™, our value offering** for UHMWPE fibers and uni-directional (UD) fabrics. Trosar™ is available in various performance grades as both fiber and unidirectional laminate (UD) mainly for marine applications. To ensure a reliable supply of consistent high quality, Trosar™ is manufactured to uniformly stringent standards at DSM sites in the Netherlands, North America and China.

Innovation

At a glance

- 7 Innovation Growth Themes
- 4.7% R&D expenditure as a % of sales (continuing operations)
- 20% Innovation sales (continuing operations), in line with our ambition of ~20%
- ~1,700 scientists[1]
- 30 laboratories spread across 10 countries
- > 100 scientific collaborations

About the Innovation Center

DSM's Innovation Center supports the creation of opportunities for future earnings growth through cultivating **purpose-led innovation** across DSM. At the Innovation Center, we accelerate the innovation power and speed of our core businesses through, for example, our Science & Technology, Innovation Business Building and IP & Licensing departments. Together we:

- Ensure the **quality** of our total scientific competence base, including monitoring and ensuring access to early-stage technologies with disruptive potential through the Corporate Research Program
- **Partner** to ensure access to the best technology and routes to market via R&D partnerships with leading universities, public-private partnerships, and joint ventures with others in the value chain
- **Experiment** in a holistic and structured way, learning with all possible innovation 'vehicles', such as internal R&D, corporate venturing into start-ups, internal venture building, licensing and much more
- Drive the development of a business-anchored **innovation pipeline** that supports our long-term growth ambitions; this pipeline is built around seven overarching growth themes that capture major global societal, technological and environmental trends, as set out in the strategy section

The Innovation Center also helps explore **adjacent business opportunities** that are outside the current scope of the company's business groups, through the Emerging Business Areas (EBAs).

- DSM Biomedical
- DSM Bio-based Products & Services
- DSM Advanced Solar

Underpinning all of this is our unique set of **scientific competences** that ensure we are able to deliver on our ambitions. With chemistry- and biotechnology-based approaches, and serving the health, nutrition and sustainability needs of both people and animals, we generate compelling business synergies from much of our research. Our science and technology capabilities will remain our foundation for delivering business growth, and we will continue to develop our competences to meet specific unmet market needs.

1 Non-financial data presented in 'Innovation' are subject to the non-financial reporting policy.

“We are building a business-anchored pipeline of innovation aligned with our future strategic needs that supports our growth ambitions and delivers meaningful impact on some of the major challenges faced by the world.”

Patricia Malarkey, Chief Innovation Officer and member of the DSM Executive Committee

Accelerating innovation

Science & Technology

A global, purpose-led leader in biosciences

At DSM, we see science as an important means to transform the sustainability of the global food supply, address climate change, and overcome resource scarcity through circular solutions. Building on 150 years of expertise, DSM today is a global, purpose-led leader in biosciences, developing a broad range of bio-based, sustainable solutions for the food, feed, personal care, pharma, nutrition, agriculture and materials sectors. We are strongly committed to invest in **biosciences** as key pillar of our future growth. During 2020, we strengthened our global network of world-class R&D and innovations through the acquisitions of CSK, Glycom and Erber Group. In November 2020, we announced the construction of a state-of-the-art **Health & Nutrition Innovation Campus** in Kaiseraugst (Switzerland) to accelerate innovation in the field of bioscience. This campus will provide modern research laboratories and collaborative workplaces to maximize agile interaction between our scientific competences and business units to further boost our customer-centricity in the development of joint solutions.

Our competences, science network and collaborative approach

Our toolbox of **scientific competences** is grouped into multiple areas: analytical and data, biological, chemical, engineering, macromolecular, material, and nutritional sciences. These areas are key to our continued success. The Science & Technology department, led by our Chief Technology Officer, works to ensure that we have the right combination of skills, capabilities and partners to deliver on our competences.

We have more than 30 **laboratories** spread across 10 countries, and our **science network** comprises about 1,700 internal scientists, including 14 professors and academic associates, distributed around the globe.

These employees co-operate with more than 100 **universities** and **external R&D institutions** worldwide, both in public-private partnerships and in academic collaborations such as with the Massachusetts Institute of Technology (MIT) in the United States, East China University of Science and Technology in Shanghai, and Delft University of Technology in the Netherlands.

Our collaborative approach increases our scientific scope and helps us make joint scientific contributions to address significant scientific and societal challenges. We participate in more than 200 academic networks, more than 50 industry networks, and more than 80 public-private partnerships (PPPs) relevant to our innovation growth themes.

Future proofing our R&D and innovation efforts

We are known worldwide as an **R&D and innovation powerhouse**. To ensure this position and to create greater value for DSM and society at large, we have launched several improvement programs to future-proof our global R&D and innovation efforts.

In 2020, we continued to align our science with the changing needs of the market as well as with the increasing speed of technological and scientific advancements in the world. We have worked towards building a more agile R&D organization that can provide answers to today’s pressing questions with higher speed and precision. We improved our (digital) skillsets and ways of working, in practical as well as technological terms, and created more **customer-centric science centers** with an increased focus on our innovation growth themes, as described before.

Above all, we have focused on creating an environment where our **bright scientists** can thrive and focus on doing the right things faster and help realize our collective mission to help address some of the world's biggest challenges.

Digital transformation of our R&D capabilities

Advanced digital technologies will become more and more critical for capturing new opportunities, and we continue to increase our investments in the digital transformation of our R&D capabilities. This includes making our collective organizational knowledge more easily available across the entire R&D organization, using **artificial intelligence (AI), big data, deep learning and modeling**, as well as **extending lab automation**. These investments are accelerating our core processes, increasing our operational efficiency and improving the speed of our innovation processes and delivery. For instance, in 2020 we invested in establishing the AI biosciences research lab 'AI4B.io' at Delft University of Technology (Netherlands). This center will develop deep understanding of how artificial intelligence can improve the efficiency and effectiveness of developing bio-based products and production technologies.

R&D expenditure (including associated IP expenditure)

x € million	2020	2019
Nutrition	234	218
Materials	73	73
Innovation Center	60	57
Corporate Activities	11	13
Total continuing operations	**378**	**361**
Discontinued operations	60	55
Total	**438**	**416**
R&D expenditure as % of net sales (continuing operations)	4.7	4.5
Staff employed in R&D activities	1,725	1,885

The Bright Science Awards

We also continue to recognize, reward and nurture **scientific talent outside DSM**. The Bright Science Awards reward excellence in PhD research in areas of particular interest to DSM's strategy. The program helps participants make the vital connection between scientific achievement and commercial and industrial success — an increasingly important consideration.

The Scientific Advisory Board

At DSM, we regularly connect with our **international Scientific Advisory Board**. Acting under the supervision of the Chief Technology Officer, this board provides valuable perspectives and insights, challenges and reviews our scientific work, and gives advice on trends and upcoming disruptive technologies. The Scientific Advisory Board comprises seven internationally recognized experts in the fields of materials, biotechnology and nutrition, drawn from leading universities in the US and Europe.

Scientific Advisory Board

Member	Background
Frank Bates (m)	Regents Professor of Chemical Engineering and Materials Science at the University of Minnesota (USA). His research involves the thermodynamics and dynamics of polymers and polymer mixtures. He has co-authored more than 475 publications and holds more than 25 patents. Nationality: American.
Thomas Hankemeier (m)	Professor of Analytical Biosciences at the Leiden Academic Centre for Drug Research at Leiden University. Medical Delta Professor of Translational Epidemiology at Erasmus MC, Rotterdam. Co-founder of MIMETAS, the first organ-on-a-chip company. He has co-authored more than 320 publications and holds over 10 patents. Nationality: German.
Craig Hawker (m)	Director of the California NanoSystems Institute, Dow Materials Institute, Facility Director of the Materials Research Lab and Alan and Ruth Heeger Professor in Interdisciplinary Science at the University of California, Santa Barbara (USA). He has co-authored over 600 scientific papers and holds more than 75 US patents. Nationality: Australian/American.
Kirk Klasing (m)	Distinguished Professor of Animal Biology in the Department of Animal Science at the University of California, Davis (USA). He is an extensively published expert on poultry nutrition and immunology, with more than 250 peer-reviewed publications, 10 edited books and nine awards to his name for his work in animal biology. Nationality: American.
Wolfgang Marquardt (m)	Chairman of the Board of Forschungszentrum Jülich (Germany), Vice-President of the Helmholtz Association, and Coordinator of the Research Field Key Technologies. He also co-founded AixCAPE e.V., a technology transfer platform in the field of computer-aided process engineering, and its spin-off S-PACT GmbH. He has more than 350 ISI-listed publications. Nationality: German.
Helene McNulty (f)	Director of the Nutrition Innovation Centre for Food and Health (NICHE), a center of excellence for nutrition research, and Professor of Human Nutrition and Dietetics, at Ulster (UK) University. She is an elected Member of the Royal Irish Academy (since 2008) and Fellow of the International Union of Nutritional Sciences (since 2017). Nationality: Irish.
Chris Voigt (m)	D.I.C. Wang Professor of Advanced Biotechnology in the Department of Biological Engineering at Massachusetts Institute of Technology (USA). He is the co-director of the Synthetic Biology Center at MIT and the co-founder of the MIT-Broad Foundry. He is also Editor-in-Chief of ACS Synthetic Biology. Nationality: American.

Internal and external venturing

The Innovation Business Building team creates and develops new business and innovation opportunities for DSM through (external) investments in startups across the globe, (internal) venture-building in DSM, and innovation partnerships with other corporate entities.

External venturing

In 2020, external venturing activities managed through the DSM Venturing organization focused on investing, but also on supporting start-up companies already in our investment portfolio through the turbulent macroeconomic conditions. We made one new external venturing investment in 2020, 18 follow-on investments in 15 portfolio companies, and generated several collaboration leads between start-ups and businesses at DSM. By the end of the year, our portfolio included 35 start-ups (2019: 35). For more information on DSM Venturing, see the company website.

Internal venture-building

In 2020, the Innovation Business Building team developed a way to build and scale innovative ventures at speed by means of a venture-capital approach, dedicated entrepreneurial teams, simple startup-style board governance, and milestone-based funding rounds.

As an example of this new approach, we incorporated **DSM PPE Plus BV** in the second quarter of the year to coordinate our European materials initiatives in the fight against COVID-19. In September, DSM PPE Plus BV and VDL Group formed a joint venture to manufacture and commercialize medical face masks and personal protective equipment filter materials. Initial production of the face masks began in October 2020. The partners are investing in the construction of new manufacturing facilities for meltblown polypropylene, which are expected to be fully operational in April 2021. More information on this case study of accelerating innovation and collaboration can be found here.

A second example is the creation **of Hologram Sciences, Inc.** in Boston, which encompasses our activities in personal nutrition within the framework of our Human Nutrition & Health business.

Partnerships

Our partnership with **Syngenta** for the joint development of microbials for crop protection agents continued successfully in 2020, with the discovery of several biofungicide leads for major plant diseases.

Our 'proteins of the future' internal start-up, which established a joint venture with the French agro-industrial group **Avril** in June 2020 to produce the plant-based protein **CanolaPRO™** at commercial scale, was transferred to DSM Food Specialties. It will be brought to market as part of DSM Food Specialties' dairy and meat alternatives portfolio.

IP & Licensing

IP & Licensing is a global group of qualified IP professionals who **protect DSM's innovations** by securing patents and trademarks. This group also includes certified licensing professionals who offer expertise for intellectual property-intensive deals across all DSM businesses, including joint development agreements, technology acquisitions and sales, and in-, out- and cross-licensing deals. DSM filed **260 patents in 2020**. This reflects our continued focus on innovation projects with higher potential for business impact.

Innovation Center performance 2020

Full year sales were in line with the previous year. DSM Biomedical delivered a solid performance even with the postponement of elective surgeries due to COVID-19. Full year Adjusted EBITDA was below the prior year with a solid performance of DSM Biomedical, which was offset by lower results in the backsheet business of DSM Advanced Solar.

x € million	2020	2019
Net sales from continuing operations	184	184
Organic sales growth (in %, continuing operations)	1	13
Adjusted EBITDA from continuing operations	21	26
Adjusted operating profit from continuing operations	(17)	(12)
Capital expenditure	35	30
Capital employed at 31 December	436	599
R&D expenditure	60	57
Workforce at 31 December (headcount)	579	683

DSM Biomedical

DSM Biomedical is committed to solving some of our world's key healthcare needs through sustainable science and is a trusted partner to the global medical device and pharmaceutical industry, enhancing the quality and delivery of healthcare through innovative and sustainable biomaterials.

Our top innovations and partnerships in 2020

A study regarding the **Drug Eluting Coronary Stent** from Svelte Medical, which contains our polyester-amide (PEA)-based drug delivery material, showed that treatment of blood vessels with the Svelte stent had cut the need for reinterventions to the lowest reported rate in an Investigational Device Exemption (IDE) study. Typical reinterventions include angioplasty, another stent, or a surgical bypass. This device is saving lives.

We delivered clinical material to support a regulatory approval application to the US Food & Drug Administration (FDA) *de novo* 510(k) on behalf of our customer Miach. The Bridge-Enhanced® ACL Repair (BEAR®) product is a bio-engineered bridging scaffold to facilitate healing of tears to the anterior cruciate ligament (ACL). It is hoped that this technology will allow for improved recovery of the knee following damage to the ACL.

In September 2020, we announced a partnership with Ireland-based PBC Biomed. This partnership will focus initially on the development of regenerative bone adhesives for safer, more cost-effective surgical procedures.

Organizational adjustments

Our organization focuses on our key strengths of sustainability and biomaterials. Production at our site in Berkeley (California, USA) was terminated during the fourth quarter of 2020 and the site is scheduled for closure in April 2021. This reduction of our manufacturing organization improved our cost structure. The reorganization will enable us to concentrate our efforts on top markets such as Orthopedics, Cardiovascular and Drug Delivery. We are also providing more support for international markets by strengthening our presence in Asia, where many countries are seeking to develop local medical device companies.

DSM Bio-based Products & Services

DSM Bio-based Products & Services continues to license out its yeast and enzyme technologies for bio-ethanol globally. Together with our joint venture partner POET, we decided to mothball the second-generation bio-ethanol plant in Emmetsburg (Iowa, USA) ('Project Liberty') in view of the prevailing market conditions for biofuels in 2020. As a result, we recorded an impairment of our investments in this joint venture (€85 million) in the second quarter. Additionally, in the fourth quarter, we recorded a €56 million impairment owing to an expected subdued market for biofuels.

DSM Advanced Solar

In September 2020, an agreement was reached to sell the coatings activities of DSM Advanced Solar to Covestro AG as part of the sale of DSM Resins & Functional Materials and related businesses. In the fourth quarter, we recorded a write down of €56 million on our solar assets following the sale to Covestro.

We received external recognition from the Solar Impulse Foundation for our Endurance backsheet's sustainable character and from the renowned TÜV-SÜD institute for its durability. This was followed by the commercial launch of an 'all-purpose' Endurance backsheet D15 in November 2020.

Corporate Activities

Any consolidated activities that are outside the three reporting clusters are reported as Corporate Activities. These comprise operating and service activities, as well as a number of costs that cannot be allocated to the clusters. While this segment reports net sales to third parties from its service units, it normally has a negative operating result.

Corporate Activities includes various holding companies, regional holdings and corporate overheads. The most significant cost elements are corporate departments and the share-based compensation for the company.

Corporate Activities

x € million	2020	2019
Net sales from continuing operations	39	42
Adjusted EBITDA	(97)	(97)
Adjusted operating profit	(141)	(150)
Capital expenditure	34	30
R&D operating expenditure	11	13[1]
Workforce at 31 December (headcount)	2,039	2,087

1 The 2019 figure has been adjusted for comparative purposes

DSM Insurances

We retain a limited part of our material damage and business interruption and (product) liability risks via our captive insurance company. In 2020, the total retained damages were €1 million.

Corporate Research

The function of the Corporate Research Program (CRP) is to develop key Science & Technology competences. Falling under the responsibility of the Chief Technology Officer, the CRP typically funds competence development programs with a longer time horizon than those run by the business groups. It also focuses on competences that have a broader relevance for the company. The CRP additionally supports Science & Technology programs that are carried out with external parties and programs covering relevant new trends.

Share-based payments

Executives participate in the Long-Term Incentive (LTI) scheme. This links their compensation to the long-term interests of our company's stakeholders. It also provides a vehicle for the attraction and retention of suitable employees. As shares / share units have become more prevalent in the market, we replaced stock options with shares / share units in 2017. This resulted in better alignment with the LTI vehicle already in place for the Managing Board and the Executive Committee. The use of shares / share units also targets yet closer alignment with the interests of our stakeholders. As a consequence of this switch, we have reduced our hedge obligations. For detailed information, see Note 27 of the Consolidated financial statements.

Reporting policies

Financial and reporting policies

As a basis for, and contribution to, effective risk management and to ensure that we are able to pursue our strategies, even during periods of economic downturn, DSM aims to retain a strong balance sheet and limit our financial risks.

Our strategy has ambitious targets, as outlined in Strategy. Within the context of this strategy, we aim to maintain a strong investment grade and a strong long-term credit rating.

Most of our external funding needs are financed through long-term debt. Debt covenants are not included in the terms and conditions of outstanding bonds and financing arrangements. We aim to spread the maturity profile of outstanding bonds in order to have adequate financial flexibility.

An important element of our financial policy is the allocation of cash flow. We primarily allocate cash to investments aimed at strengthening our business positions and securing stable, and preferably rising, dividend payments to our shareholders. Remaining cash flow is used for acquisitions, targeting investments predominantly in Nutrition and in line with our strategy. Share buy-backs will be considered in the absence of value-creating M&A opportunities.

Dividends are paid out in cash or in the form of ordinary shares at the option of the shareholders, with a maximum of 40% of the total dividend amount available for stock dividend.

In order to cover our commitments under the dividend policy and under management and employee option and share plans, we buy back shares insofar as this is necessary and feasible.

We continuously monitor and assess risks arising from currency exposures. It is our policy to hedge 100% of the currency risks resulting from sales and purchases at the moment of recognition of trade receivables and payables. Additionally, we may opt to hedge currency risks from firm commitments and forecast transactions. The currencies giving rise to these risks are primarily the US Dollar, the Swiss Franc, the Brazilian Real and the Chinese Renminbi.

We acquire businesses and enter into partnerships that add value in terms of technological or market competences. In addition, these businesses and partnerships are required to contribute to our cash earnings per share, as well as our profitability, sustainability and growth requirements. In the case of small innovative growth acquisitions, we consider their potential to contribute to these requirements in the future.

Our policies in the finance function are strongly oriented toward solidity and reliability of reporting, as well as the protection of cash flows. The finance function plays also an important partner role to the business and supports business steering.

For detailed information on our tax policies, see Taxation at DSM on the company website.

Non-financial reporting policy

Reporting policy and justification of choices made

In this Report, we report for the calendar year 2020. The company reports on People, Planet and Profit information in such a Report on an annual basis. The previous DSM Integrated Annual Report was published on 27 February 2020. We publish our Report exclusively in a digital format. It is available as an online version and as a pdf.

In the Report by the Managing Board, we explain our vision and policy with respect to sustainability practices and report on our activities in this field during 2020. In addition to disclosing data and developments in the categories of People, Planet and Profit, we also report on the global societal megatrends that drive our strategy, sustainability governance framework, stakeholder engagement activities, and management approach on material topics. We proactively seek out the views of key stakeholders on issues of material importance to the company.

Global Reporting Initiative

At DSM, we base our sustainability reporting on international non-financial reporting guidelines. We frequently assess to what extent sustainability aspects become material to our company and our stakeholders. In the event that specific indicators become relevant to the company's sustainability performance, appropriate actions are taken that allow the necessary data to be collected so as to be able to disclose progress in the future.

This Report has been prepared in accordance with the GRI Standards: Comprehensive option. A detailed overview of how we report according to the GRI Standards comprehensive indicators, including a reference to relevant sections in this Report, is provided in the GRI Content Index on the Integrated Annual Report website.

UN Global Compact

We have been a signatory to the UN Global Compact since 2007 and commit to annually report on progress in implementing The Ten Principles of the UN Global Compact in the areas of human rights, child and forced labor, the environment and anti-corruption. This Report is our Communication on Progress 2020, submitted to the UN Global Compact Office. Our Code of Business Conduct, our Sustainability, Human Resources, and Safety, Health and Environment (SHE) policies, and our Supplier Sustainability Program are the foundations on which we apply the standards of the Global Compact.

We have also aligned our strategy with the Sustainable Development Goals (SDGs). We are familiar with the opportunities and responsibilities that the SDGs represent for our business. Based on our mapping, we believe that we contribute to all of them, and have chosen to focus on the goals which most closely align with our strategic ambitions. In this Report, we continue to include the SDGs into our reporting process, for example by mapping SDG reporting priorities in our value creation model, our material topics, and the solutions that we highlight.

The Taskforce on Climate-related Financial Disclosures

The recommendations from the Taskforce on Climate-related Financial Disclosures (TCFD) are a set of voluntary, climate-related financial disclosures for use by companies to provide information to their stakeholders. We were among the first companies in 2017 to commit to implementing, as fully as practicable, these recommendations over the following three years as outlined in the TCFD's implementation path. This Report contains our TCFD-relevant disclosures on Governance, Strategy, Risk Management, and Metrics and Targets. For more information on how we report against the TCFD recommendations, see the Sustainability statements — TCFD.

Other reporting frameworks

We are in favor of convergence in reporting standards and frameworks, moving to a single accepted non-financial reporting standard. Currently we recognize and participate in a number of initiatives that are driving toward that goal. We report in accordance with the GRI Standards, we apply elements of the <IR> Framework, and we map our disclosures to other standards and frameworks to support our stakeholders who are using these. You can find how our disclosures map to the Sustainability Accounting Standards Board framework and the WEF IBC metrics and disclosures in the Sustainability statements.

Integrated Reporting Framework

We align with the recommendations of the International Integrated Reporting Council <IR> Framework where possible. The intention of the <IR> Framework is to provide additional guiding principles and content elements for an integrated report. Aligning with the framework allows us to better identify and communicate how the company creates value for stakeholders in People, Planet and Profit, as well as the interconnection between these three dimensions.

Selection of topics

The topics covered in this Report were selected on the basis of input from internal and external stakeholders and the related materiality analysis, which assessed the relevance and impact of selected topics for our company and various stakeholders. On the basis of the principle of materiality (using the GRI Standards), we distinguish between topics whose importance warrants publication in this Report (relevant to both DSM and stakeholders), and topics whose importance warrants publication on the company website only (topics important to either DSM or stakeholders). We report on External recognitions in Stakeholders.

Scope

The People and Brighter Living Solutions data in this Report cover all entities that belong to the scope of the Consolidated financial statements, provided that DSM also has operational control. As such, three small units have been excluded from the scope. Planet reporting covers manufacturing units where commercial production by DSM occurs.

Acquisitions and divestments

The People data for newly acquired companies are reported from the first full month after the acquisition date. The Safety, Health (People), Environment (Planet) and Brighter Living Solutions data for 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')*. In the case of divestments, Planet and BLS data are reported until the moment of divestment, and Safety, Health and People data until the end of the month of divestment.

Planet methodology

Our progress on the key environmental performance indicators is re-evaluated annually. Data on these indicators are collected twice a year for all DSM sites. The data are based on these sites' own measurements and calculations, which in turn are founded on definitions, methods and procedures established at corporate level. The site managers of reporting units are responsible for the quality of the data. Data are collected using measurements and calculations in the production processes, information from external parties (e.g., on waste and external energy) and estimates based on expert knowledge.

Reporting units have direct insight into their performance compared to previous years and are required to provide justifications for any deviations above the threshold. For most parameters, the threshold is set at 10%. The year-on-year comparability of the data can be affected by changes in our portfolio as well as by improvements to measurement and recording systems at the various sites. Whenever impact is relevant, this is stated in the Report. Details for the regions, as well as the methodology and calculations, are published on the company website, together with an explanation of the definitions used.

People methodology

People data are collected per business group and consolidated at corporate level.

Brighter Living Solutions

For a definition of Brighter Living Solutions, see Explanation of some concepts and ratios. We report twice a year the percentage of Brighter Living Solutions within the running business portfolio.

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. The financial data are validated with the Corporate Sustainability department and consolidated as DSM Brighter Living Solutions KPI performance and reviewed by Group Control & Accounting.

Corporate governance and risk management

Corporate governance

Koninklijke DSM N.V. (Royal DSM) is a **company limited by shares** listed on Euronext Amsterdam. It is managed by a Managing Board together with an Executive Committee and an independent Supervisory Board. Members of the Managing Board and the Supervisory Board are appointed (and, if necessary, dismissed) by the General Meeting of Shareholders.

The company is **governed by Dutch law** and by its Articles of Association, which can be consulted on the company website. The General Meeting of Shareholders decides on any amendment to the Articles of Association by an absolute majority of the votes cast. A decision to amend the Articles of Association may only be taken at the proposal of the Managing Board, subject to the approval of the Supervisory Board.

At DSM, we fully inform our **stakeholders** about our corporate objectives, the way our company is managed, and our company's performance. In doing so, we aim to pursue an open dialogue with our shareholders and other stakeholders.

Our company has an **organizational structure** built around business groups that are empowered to perform all short- and long-term business functions. In this, they are assisted by support and corporate functions, as well as by regional organizations.

Managing Board and Executive Committee

The Executive Committee was installed to enable faster strategic alignment and operational execution by increasing our focus on the development of our business, innovation and people.

The **Executive Committee** comprises the Managing Board members as well as five senior executives with responsibility respectively for DSM Nutritional Products (Chris Goppelsroeder), DSM Food Specialties and Corporate Mergers & Acquisitions (Philip Eykerman), the Materials cluster (Helen Mets as of 15 February 2020), the DSM Innovation Center (Patricia Malarkey), and Group People & Organization (Judith Wiese until 1 September 2020 and as of 1 September 2020 Cristina Monteiro). The latter senior executives are appointed by the Co-CEOs after consultation with the Supervisory Board. The Executive Committee focuses on topics such as our company's overall strategy and direction, review of business results, functional and regional strategies, budget-setting, and people and organization. The statutory responsibilities of the Managing Board remain unchanged.

The **Managing Board** is ultimately responsible for our company's strategy, portfolio management, the deployment of human capital and financial capital resources, the risk management system, financial performance, and performance in the area of sustainability. The Managing Board is thus also accountable to the Supervisory Board for our strategy and management. Notwithstanding that accountability, the full Executive Committee attends the Supervisory Board meetings.

The Managing Board consists of two or more members, to be determined by the Supervisory Board. The Managing Board currently consists of Co-CEOs Geraldine Matchett and Dimitri de Vreeze, more details can be found in Supervisory Board and Managing Board Royal DSM. Since the introduction of the **Dutch Corporate Governance Code** in 2004, members of the Managing Board have been appointed for a period of four years.

The members of the Managing Board are collectively responsible for the **management of DSM**. In addition to this collective responsibility, Managing Board members have individual responsibility for certain tasks, business clusters, functional areas and regions. The distribution of these tasks is published on the company website.

As of 15 February 2020, Feike Sijbesma handed over his responsibilities as CEO of DSM to Geraldine Matchett and Dimitri de Vreeze in a dual leadership as **Co-CEOs**.

The **remuneration** of Managing Board members is determined by the Supervisory Board based on the remuneration policy approved by the General Meeting of Shareholders. The remuneration policy for the Managing Board can be found on the company website.

The functioning of and decision-making within the Managing Board and the Executive Committee are governed by the **Regulations** of the Managing Board, which are in accordance with the Dutch Corporate Governance Code and can be found on the company website.

In 2020, the Managing Board and Executive Committee had 51 **formal meetings**, due to the COVID-19 restrictions most of these were held virtually. No Managing Board member had to be excused from meetings during the year. One Executive Committee member was excused once on account of another commitment and in this case the Executive Committee member gave advance input. The Executive Committee and Managing Board take the time for an evaluation at the end of every meeting they have. This evaluation can be about topics that have been discussed during that meeting, but may also reflect on meeting dynamics and individual or collective performance. Once a year, the Executive Committee and Managing Board take the time to get together and discuss their performance as a team.

Supervisory Board

The **Supervisory Board** comprises at least five members. Its current **composition** can be found in Supervisory Board and Managing Board Royal DSM. Supervisory Board members are **appointed** for a period of four years, after which they may be reappointed for a further four years. A Supervisory Board member may subsequently be reappointed for a period of two years, and this appointment may be extended by at most two years. For reappointments after an eight-year period, reasons must be provided in the report of the Supervisory Board.

All **current members** of the Supervisory Board are **independent** in accordance with the Dutch Corporate Governance Code. The **remuneration** of Supervisory Board members is determined by the General Meeting of Shareholders. The functioning of and decision-making within the Supervisory Board are governed by the Regulations of the Supervisory Board, which are in accordance with the Dutch Corporate Governance Code and can be found on the company website.

The Supervisory Board supervises the **policy** pursued by the Managing Board, the Managing Board's **performance** of its managerial duties, and the company's **general course of affairs**, taking the interests of all the company's stakeholders into account. When the Executive Committee was established, the Supervisory Board also took on responsibility for ensuring that the **checks and balances** that are part of the two-tier system are still given due consideration, paying specific attention to the dynamics between Managing Board and Executive Committee. The Supervisory Board is enabled to do so through the information provided by the Managing Board.

The **annual financial statements** are approved by the Supervisory Board and then submitted to the Annual General Meeting of Shareholders (AGM) for adoption, accompanied by an explanation from the Supervisory Board as to how it carried out its supervisory duties during the year under review.

In line with the Dutch Corporate Governance Code, the Supervisory Board has established from among its members an Audit Committee, a Nomination Committee and a Remuneration Committee, besides which there is also a Sustainability Committee.

The task of these **committees** is to prepare the decision-making of the Supervisory Board. These committees are governed by charters drawn up in line with the Dutch Corporate Governance Code. They can be found on the company website.

Diversity

At DSM, we strongly value diversity, and we endeavor to reflect this in our Board memberships. The Supervisory Board has formulated diversity policies for the Supervisory Board, the Managing Board and the Executive Committee. These policies seek a balanced composition of the respective body, taking into account gender, age, knowledge, experience, and nationality / cultural background. In addition, for the composition of the Supervisory Board, the tenure structure is taken into consideration.

In terms of gender diversity, we aim for at least 30% of the positions in our Supervisory Board, Managing Board and Executive Committee to be held by women and at least 30% by men — percentages which reflect Dutch legislation. To ensure a balanced composition in terms of nationality / cultural background, our aim is not to have more than 50% of the members of our Supervisory Board or Executive Committee drawn from a single nationality. While a diverse composition in terms of nationality / cultural background is also taken into account in the composition of the Managing Board, no quantitative target is set here, given the relatively small number of Managing Board members.

Our diversity policies are implemented by applying them to nominations for (re)appointments of Supervisory Board and Managing Board members as well as to appointments of Executive Committee members.

At the 2020 Annual General Meeting Rob Routs, a Dutch national, was reappointed as member of the Supervisory Board on the basis of his extensive international experience, his knowledge of the (petro)chemical industry, his broad experience in the management of corporations and his qualities as Chairman of DSM's Supervisory Board as demonstrated during the past ten years of which 9 years as Chairman. He was reappointed for a final two-year term to facilitate a smooth transfer and continuity to the new Co-CEO leadership structure. With the reappointment of Rob Routs, the Supervisory Board maintains a strong profile in the areas of general management, strategy, risk, manufacturing & operations and safety.

Eileen Kennedy, an American national, was reappointed as member of the Supervisory Board on the basis of her broad and in-depth nutrition knowledge and her qualities as Supervisory Board member as demonstrated during her past two periods as member of DSM's Supervisory Board. With the reappointment of Eileen Kennedy, the Supervisory Board maintains a strong profile in the areas of nutrition, R&D and sustainability.

Pradeep Pant, a Singaporean national, was reappointed as member of the Supervisory Board on the basis of his extensive experience in Fast Moving Consumer Goods and bringing products and services to market across territories, in particular in the Asia-Pacific region, his deep understanding of market dynamics and cultural diversity, and for his qualities as Supervisory Board member as demonstrated during his past first period as member of DSM's Supervisory Board. With the reappointment of Pradeep Pant, the Supervisory Board maintains its profile in the fields of marketing & sales, emerging economies and nutrition.

Thomas Leysen, a Belgian national, was appointed on the basis of his broad international business experience, and especially his experience in leading comprehensive portfolio changes making businesses more sustainable, his knowledge of technology-based businesses and his experience in managing large corporations. With the appointment of Thomas Leysen, the Supervisory Board further strengthens its profile in the areas of general management, strategy and risk, and strengthens its profile in the areas of manufacturing & operations, safety and R&D, innovation and technology.

Both our Supervisory Board and our Managing Board were well balanced in 2020 in terms of gender in the period until the 2020 Annual General Meeting (AGM), comprising 50% and 33% women respectively, and after the AGM comprising 37% and 50% respectively, which is in line with Dutch legislation and with the company's own diversity policy. The target for gender diversity levels within our Supervisory Board and our Executive Committee exceeds our target for at least 30% of these positions to be held by women and at least 30% by men. With the appointment of Helen Mets, as new EVP Materials and Member of the Executive Committee, the percentage of women in DSM's Executive Committee is 57%. Furthermore, the composition of both our Supervisory Board and our Executive Committee are in line with our target of not having more than 50% of the members drawn from a single nationality.

General Meeting of Shareholders

The **main powers** of the General Meeting of Shareholders relate to:

- The appointment, suspension and dismissal of members of the Managing Board and the Supervisory Board
- Approval of the remuneration policy of the Managing Board
- Approval of the remuneration of the Supervisory Board
- The adoption of the annual financial statements and declaration of dividends on ordinary shares
- Release from liability of the members of the Managing Board and the Supervisory Board
- Issuance of shares or rights to shares, restriction or exclusion of pre-emptive rights of shareholders and repurchase or cancellation of shares
- Amendments to the Articles of Association
- Decisions of the Managing Board that would entail a significant change to the identity or character of DSM or its business

The **Annual General Meeting (AGM)** is held within six months of the end of the financial year in order to discuss and, if applicable, adopt the Integrated Annual Report, the annual accounts, any appointments of members of the Managing Board and the Supervisory Board, and any of the other topics mentioned above.

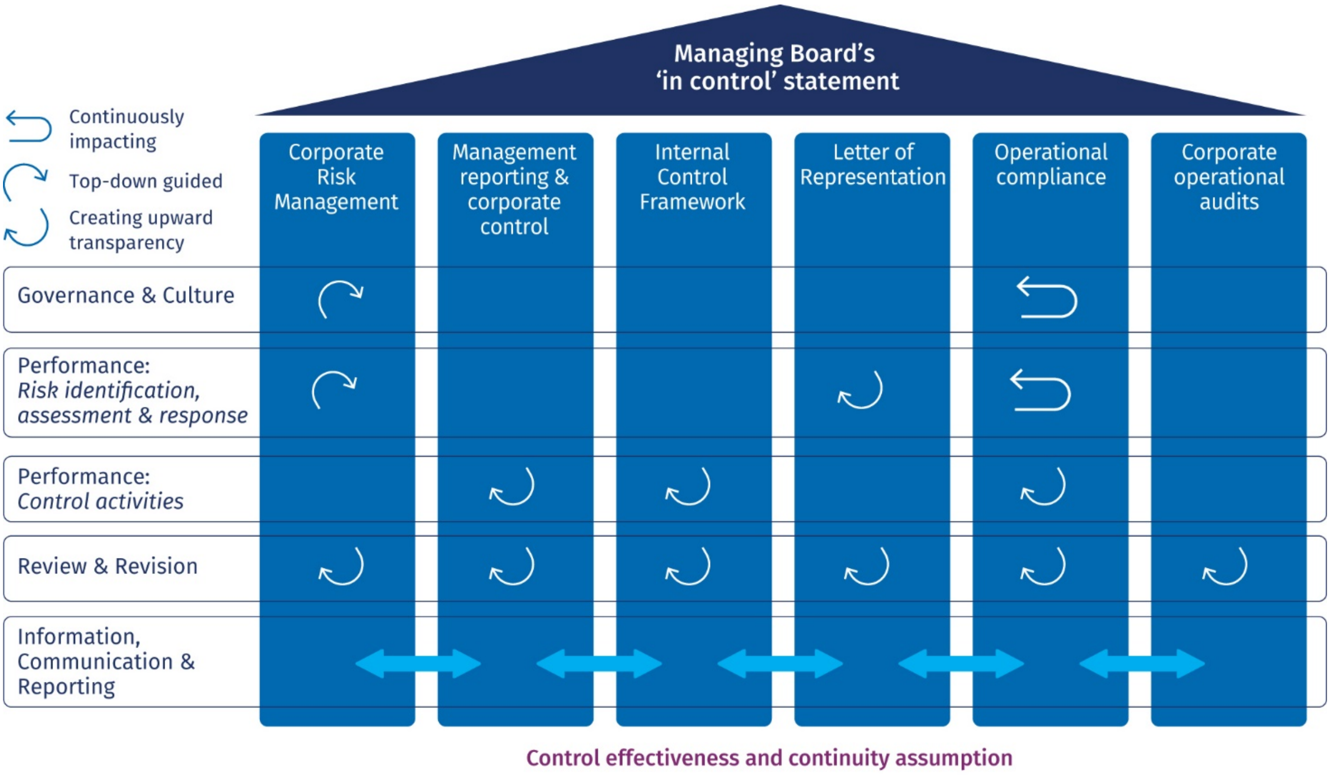
The AGM and, if necessary, other General Meetings of Shareholders are called by the Managing Board or the Supervisory Board. The **agenda and explanatory notes** are published on the company website.

According to the **Articles of Association**, shareholders who, individually or jointly, represent at least 1% of the issued capital have the right to request the Managing Board or the Supervisory Board to put items on the agenda. Such requests need to be received in writing by the Chairman of the Managing Board or the Chair of the Supervisory Board at least 60 days before the date of the General Meeting of Shareholders.

The AGM was held on 8 May 2020. In view of the COVID-19 measures, the AGM was held virtually in compliance with the **Temporary Act COVID-19**. Shareholders were given the opportunity to ask questions upfront. All questions were addressed during the AGM and posted as Q&As on the company website. The agenda was essentially similar to that of previous years. Additional topics were the remuneration report 2019 for an advisory vote, the reappointments to the Supervisory Board of Rob Routs, Eileen Kennedy and Pradeep Pant, as well as the appointment of Thomas Leysen. All topics were adopted by the Annual General Meeting of Shareholders.

Control effectiveness and continuity assumption

The Statements of the Managing Board conform with the Dutch Corporate Governance Code best practice 1.4.3 on 'Board Statements'.



At DSM, we visualize our **control environment** as a 'house' that includes the internal control process areas with control measures related to strategic, operational, compliance and reporting risks. The elements of COSO (the Committee of Sponsoring Organizations of the Treadway Commission) provide a framework for identifying company activities that are carried out to ensure that the control environment is adequately structured. Finally, to make sure that full use is made of learning opportunities, monitoring activities include the sharing of findings and experiences as well as the application of control measures across the supporting pillars.

Our structure for **managing risks** is based on a three-lines model (see also Risk management). Line management within the units acts as the first line. Group Risk management acts as the second line together with other departments such as DSM Operations & Responsible Care, assessing the effectiveness of risk management and internal control at both unit and corporate level. Corporate Operational Audit (COA) acts as the third line. The scope and frequency of COA audits is determined by ranking the auditable units according to the scale of their risk exposure, using a set of defined characteristics.

COA assesses the operation of **risk management framework** of the units by performing risk-based audits. These audits review the key processes and activities for the specific units. By means of these audits, COA closes the risk management cycle and provides additional assurance to the Managing Board as to the effectiveness of the design and operation of the risk management and internal control systems.

COA reports its **audit results** to the Managing Board and Executive Committee twice a year. COA also shares an overview with the Audit Committee of the Supervisory Board and communicates the executive summary of each audit report to Geraldine Matchett in her capacity as CFO and Co-CEO and to Dimitri de Vreeze in his capacity as Co-CEO.

In 2020, COA carried out **58 audits**. Due to COVID-19 restrictions, most of the 2020 audits were executed remotely via video calls using Microsoft Teams. Trials were initiated for the use of smart glasses to be able to observe local situations in plants, labs and offices. In general, audit findings are considered opportunities for improvement as part of a healthy learning culture. In virtually all of the audited areas (e.g., Operations, IT, Finance, Safety, Health & Environment (SHE), Quality, Commercial) the expected DSM standard was achieved. In the rare event of insufficient follow-up on a finding, the Director of COA escalated that finding to the Co-CEOs.

Dutch Corporate Governance Code

DSM supports the Dutch Corporate Governance Code, which was most recently amended in 2016 and adopted by the company with effect from the financial year 2017. We ensure our continued compliance with the Dutch Corporate Governance Code. The Dutch Corporate Governance Code can be found on www.mccg.nl.

In line with the notion underlying the Dutch Corporate Governance Code we follow a multi stakeholder approach. Our stakeholders are those groups and individuals who, directly or indirectly, influence — or are influenced by — the attainment of the company's objectives. The Managing Board and Supervisory Board have the responsibility for weighing up the interests of all stakeholders.

Long-term value creation is embedded in both our company's purpose-led, performance-driven strategy and our company culture: Our purpose is to create brighter lives for all. Sustainability is central to how we fulfill that mission, and to achieve this, we consider People, Planet and Profit in all we do. We apply our company strategy to drive our business and innovation strategies, which address key challenges in Nutrition & Health, Climate & Energy, and Resources & Circularity. More information on how long-term value creation is fundamental to our strategy and culture can be found in Strategy and People, as well as in How we create value for our stakeholders and in Our approach to the Sustainable Development Goals.

Any proposed substantial change to our corporate governance structure and compliance with the Dutch Corporate Governance Code should be submitted to the General Meeting of Shareholders for discussion under a separate agenda item.

All documents related to the implementation of the Dutch Corporate Governance Code at DSM can be found in the Corporate Governance section of the company website.

Governance framework

Organizational & operating model

Our business groups are the main building-blocks of the company's organization. They have integral long-term and short-term responsibility for business and have at their disposal all functions that are crucial to their business success. As the company's primary organizational and entrepreneurial building-blocks, our business groups focus on four primary business functions: Innovation and R&D, Direct Sourcing, Manufacturing & Operations, and Marketing & Sales. Intra-company product supplies are contracted by the business groups on an arm's-length basis.

The business groups are organized into clusters, thus ensuring coherence of operations and the leveraging of resources within each cluster. The clusters are the main organizational entities for external strategic and financial reporting. This structure ensures flexibility, efficiency and speed of response to market changes. In order to ensure sufficient independence regarding financial management, the CFO has no business groups reporting to her.

Our business groups receive services from global support functions and functional excellence departments and are supported by the regional organizations. This set-up enables us to create a global, high-performing organization focused on meeting its targets and achieving its ambitions. The support functions and functional excellence departments are paid for their services by the users — the business groups and, to a lesser extent, other DSM units. Corporate departments are paid from a corporate budget.

Support functions provide those services that can be delivered more efficiently (in terms of total cost of ownership) by leveraging them across the company, thus capturing scale benefits and delivering higher quality at lower cost, rather than having them arranged in each business group separately. There are support functions in the areas of Finance, People & Organization, Legal, Indirect Sourcing, Communications and ICT. Each support function reports to a Managing Board member or a member of the Executive Committee.

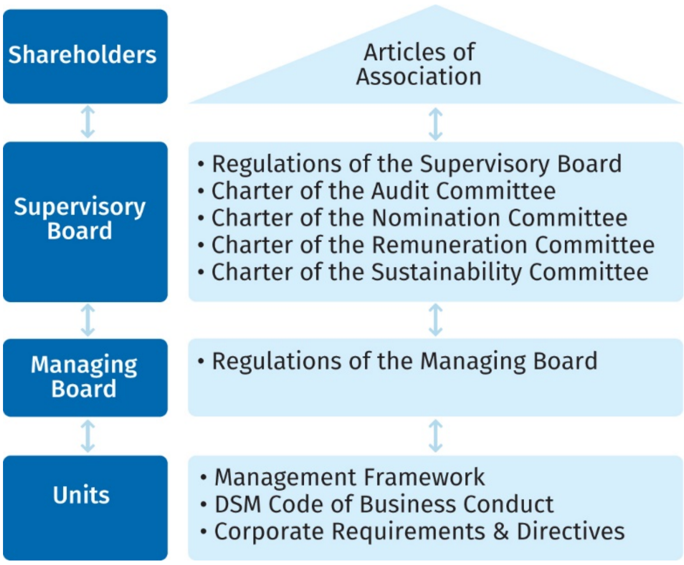
Within support functions, **centers of expertise** provide specialist support, while shared service centers provide standard transactional support. Business partnering is the concept that acts as the interface between the business groups and the support functions. Business partners consequently have a second reporting line in the business. In order to ensure that the functional policies sufficiently reflect regional requirements, the support functions work closely with the regional organizations and integrate their advice.

Corporate functions (small, high-level groups) supporting the Managing Board and Executive Committee are also seen as support functions. The corporate departments are: Corporate Strategy & Acquisitions, Corporate Operational Audit, Corporate Risk Office, Corporate Sustainability, Corporate Investor Relations and Corporate Affairs.

Functional excellence departments are mandated by the Managing Board to help the businesses achieve excellence in their respective fields. They cover the areas of Operations & Responsible Care, Marketing & Sales and Science & Technology. Functional excellence departments support our businesses in improving their performance. They also provide guidance in setting aspiration levels and targets.

Governance framework

The following figure depicts our company's **overall governance framework** and the most important governance elements and regulations at each level.



The Managing Board and Executive Committee adhere to the **Regulations** of the Managing Board. In addition, DSM has a **Management Framework** in place which implies, among other things, that the units adhere to the DSM Code of Business Conduct and applicable corporate policies and requirements.

The company's strategic direction and objectives are set by means of a **Corporate Strategy Dialogue**. In June 2018, DSM presented its updated purpose-led, performance-driven strategy, which is described in more detail in Strategy.

The **units** conduct their business within the boundaries of the Management Framework. This implies, among other things, that they:

- Comply with the DSM Code of Business Conduct, Corporate Requirements and Directives
- Establish the strategy, objectives and operational targets of their business according to the Business Strategy Dialogue, in alignment with the Corporate Strategy Dialogue, in which various scenarios and related risk profiles are investigated, and report on the achievement of these
- Implement a risk management framework, which includes taking accountability for the identified risks and related mitigation through annually signing the Letter of Representation
- Implement company-wide standards for support functions (systems, processes, vendors, etc.)
- Implement annual functional improvement plans

Independent audits for all operational units are conducted by the Corporate Operational Audit (COA) department. The Director of COA reports to the CFO and has access to the Chair of the Managing Board, the external auditor and the Audit Committee of the Supervisory Board. Furthermore, the Director of COA acts as the compliance officer regarding inside information and is also the secretary of the Disclosure Committee. The Director of COA additionally chairs the DSM Alert Committee, which is responsible for our whistleblower policy, systems and processes.

Chaired by the CFO, the Disclosure Committee ensures the timely and accurate disclosure of share-price-sensitive information related to the company and is responsible for the implementation of company rules on the holding and execution of transactions in the company's financial instruments, among other things.

A third committee at corporate level is the Fraud Committee, which was installed to ensure structural follow-up of fraud cases with the aim of reducing fraud exposure. Relevant corporate functions participate in the Fraud Committee, which is chaired by the Group Controller.

Sustainability Governance Framework

Managing Board

Sustainability falls under the responsibility of the Managing Board. Specific actions in our climate action agenda are owned by members of the Managing Board and Executive Committee. In 2020, our 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 2020, our Co-CEO Dimitri de Vreeze 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.

Our Co-CEO Geraldine Matchett oversaw our engagement with organizations with a primary focus relating to (mal)nutrition. She 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 and chaired the Inclusion & Diversity Council. 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.

Supervisory Board

Our Supervisory Board has its own Sustainability Committee to oversee progress against targets and to report on the embedding of sustainability across the organization. For more details, see Supervisory Board Report.

External Sustainability Advisory Board

Comprising a diverse international group of thought leaders, DSM's Sustainability Advisory Board acts as a sparring partner for the Managing Board and senior executives, to help sharpen their focus on strategic issues, deepen their understanding of external stakeholder needs, conduct advocacy and handle dilemmas. In 2020, Feike Sijbesma, Honorary Chairman and former CEO of Royal DSM, joined this board.

The Sustainability Advisory Board met once in 2020 together with the Managing Board and a number of senior executives. Subjects addressed included business updates and the impact of COVID-19, Building Back Better, strengthening our long-term purpose-led, performance-driven strategy, and Nature & biodiversity. Due to the virtual nature of this meeting, this board was unable to include a site visit as part of the meeting. This board maintains a good balance of knowledge across our three Focus Domains and a diverse composition in terms of gender and nationality.

Sustainability Advisory Board

Member	Background
Robin Chase (f)	Co-founder and former CEO of Zipcar, co-founder of Veniam and the New Urban Mobility Alliance, Board member of the World Resources Institute and Tucows, and serves as an informal advisor to many cities, national governments, and transport agencies on the transition to shared automated vehicles. Nationality: American.
Ertharin Cousin (f)	Distinguished Fellow with The Chicago Council on Global Affairs, visiting scholar at Stanford University and Board Member of both Bayer S.A. and Heifer International as well as Trustee on the Rwanda based AKADEMIYA2063 Board of Directors. She served as the twelfth Executive Director of the United Nations World Food Programme from 2012 to 2017 and the US Ambassador for Food and Agriculture. Nationality: American.
Paul Gilding (m)	Social entrepreneur, author and corporate strategy advisor. Fellow at the University of Cambridge Institute for Sustainability Leadership (UK). Author of *The Great Disruption* (Bloomsbury, London, 2011). Executive director of Greenpeace International during the 1990s. Nationality: Australian.
David King (m)	Professor Sir David King is Emeritus Professor of Chemistry, University of Cambridge; Founder and Chair of the Centre for Climate Repair in the University; an Affiliate Partner of SYSTEMIQ Limited; and Senior Strategy Adviser to the President of Rwanda; the Foreign Secretary's Special Representative on Climate Change 2013–2017. Nationality: British.
Ndidi Nwuneli (f)	Social entrepreneur and Founder of LEAP Africa and Nourishing Africa, and co-founder of AACE Food Processing & Distribution Ltd. (AACE Foods), an indigenous agro-processing company in Nigeria. She is also the managing partner of Sahel Consulting Agriculture & Nutrition, which works across Africa, transforming the nutrition and agriculture landscapes, via innovative ecosystem solutions. Nationality: Nigerian.
Ye Qi (m)	Director of the Institute for Public Policy at Hong Kong University of Science and Technology, and Cheung Kong Professor of Environmental Policy at Tsinghua University in Beijing (China). Before joining Tsinghua, he taught at Beijing Normal University, and the University of California at Berkeley (California, USA). Nationality: American.
Feike Sijbesma (m)	Honorary Chairman of Royal DSM since March 2020, and former CEO between 2007 and 2020. In 2020, he acted as the Special Corona Envoy for the Netherlands. He is Vice Chairman of the Supervisory Board Royal Philips, a non-executive Board member of Unilever and a member of the Supervisory Board of the Dutch Central Bank (DNB). He co-chairs the Global Centre for Adaptation together with Ban Ki Moon and acts as an advocate and leader for business tackling climate change as Chair of the WEF Climate Leaders and his membership of the Board of Trustees of the WEF. Feike also contributes to the expansion of Africa Improved Foods. Nationality: Dutch

Global network

Sustainability Leadership Team

At corporate level, sustainability is steered by our Sustainability Leadership Team, a group of senior executives representing the business groups and contributing corporate functions, which is chaired by the Vice President Sustainability. He leads the Corporate Sustainability department and reports directly to the Co-CEOs. The Corporate Sustainability staff functions as a business-oriented center of excellence and partner on sustainability, internally and externally.

The Sustainability Leadership Team meets quarterly to monitor the progress of sustainability across the company, with particular emphasis on steering our business and innovation portfolio in relation to key drivers. Regional operational sustainability networks are in place in China, India, Latin America and North America.

Operations & Responsible Care

DSM Operations & Responsible Care has responsibility for all corporate issues related to Safety, Health and Environment (SHE). This also includes (cyber)security. The Senior Vice President DSM Operations & Responsible Care reports directly to the Managing Board. SHE managers provide support at business group level. Our SHE Council, which includes all business group SHE managers, is instrumental in sharing experiences and developing best practices and communications on SHE issues.

Taskforce on Climate-related Financial Disclosures

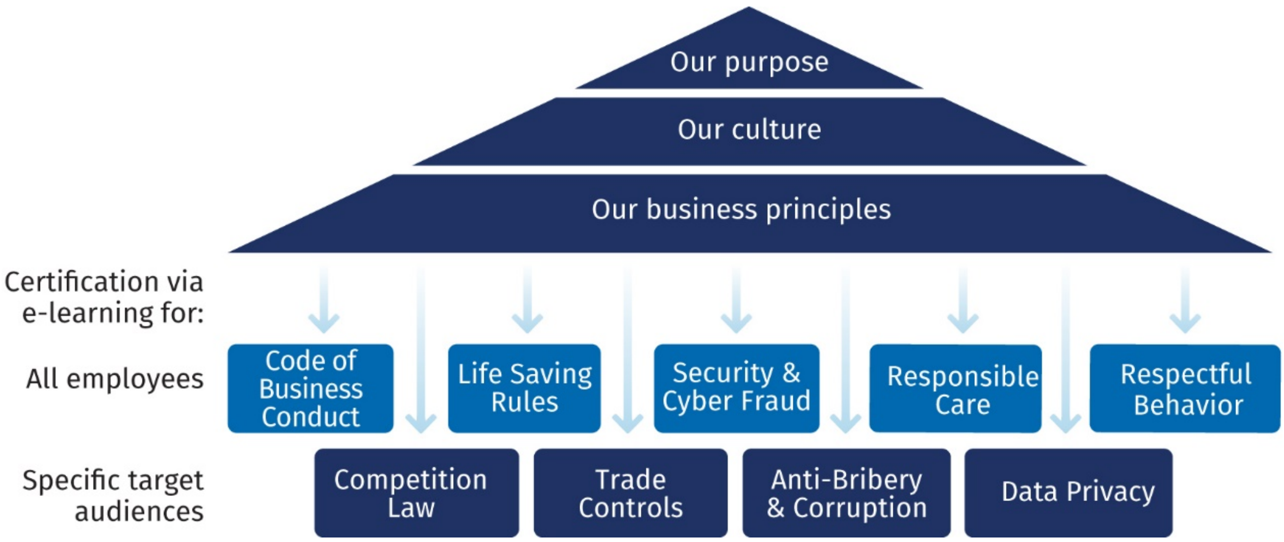
In her capacity as CFO, Ms. Matchett has appointed a finance executive to lead a team addressing the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). This team, comprising representatives from Finance, Risk Management, Sustainability, and Investor Relations, works with functions such as Strategy, Operations and Procurement, to define what is needed to meet our TCFD commitments. The team convened in 2020 to work on physical risk assessments, and design and pilot an approach for transition risk assessments, as well as continuing to integrate climate-related risks into the risk management process. For more information, see Sustainability statements — TCFD.

DSM Code of Business Conduct

Introduction

The DSM Code of Business Conduct ('the Code') serves as an umbrella for several other DSM regulations and forms the basis for our company's **ethical business behavior**. Our purpose, our culture and our business principles are an integral part of the Code. The business principles translate our purpose into important do's and don'ts to guide our business operations and decisions in daily practice. All DSM employees are expected to follow the Code, which is available in seven languages. The full text of the Code also appears on the company website. The Managing Board holds DSM's unit management accountable for compliance.

DSM Code of Business Conduct and values training program



Training and awareness

The **DSM values training program** contains several e-learning courses to explain the Code and a number of its business principles in more detail. These courses are aimed at raising awareness for ethical business behavior and are assigned to all employees or, for certain subject matter, to specific target audiences. All courses are available in at least six languages, unless indicated otherwise. When we acquire a business, integration and compliance plans are rolled out to make sure new employees are trained.

A **review team**, chaired by the Vice President Risk Management & Internal Control, monitors the internal and external developments around corporate ethics to promote and safeguard the company's values and reputation. The review team also monitors implementation of the DSM values training program (see table Implementation of the DSM values). At year-end, most employees had completed or refreshed their training (excluding employees of some recently acquired businesses). Our learning management system also has an external portal to enable relevant contractors and other third parties to follow courses of the DSM values training program.

The DSM values training program covers the three dimensions of **People, Planet and Profit**. An overview of the courses and the changes in 2020 is listed below, as well as a number of important implementation measures.

People

The **Life Saving Rules** specify the 12 most important rules that must be followed by all our employees to prevent incidents. In the latest revision of the Life Saving Rules in 2019, improved standards for warehouse safety and hot work have been included.

The **Respectful Behavior** e-learning emphasizes the importance of diversity and inclusiveness, and promotes respectful behavior as well as active bystander behavior to foster effective employee relations, communications, and non-discriminatory practices.

The DSM **Binding Corporate Rules for Data Privacy** prescribe mandatory data privacy training for employees who regularly work with personal data from employees and business partners. This is provided by the new General Data Protection Regulation (GDPR) overview e-learning, which has replaced the Data Privacy Knowledge course. The new training is rolled out to a large target audience including all employees working in the functions People & Organization, Marketing & Sales and Purchasing. In addition to this, concise e-learnings are in place to train all our employees on the consequences of the GDPR and the importance of prompt data breach notification.

Planet

The **Basic Course Responsible Care** addresses the elements of the Responsible Care Program: Safety, Health, and Environment; Product stewardship; Security; and Sustainability.

Profit

The e-learning course **Global Competition Law Principles and Practices** addresses the main principles of anti-trust legislation and the relevant employees confirm their compliance with the rules via a Competition Law Compliance Statement. In this statement, they confirm that they are not aware of any violation of competition laws by DSM. For a smaller group of employees mandatory Competition Law classroom trainings on specific topics are organized. Alleged breaches, if any, are reported to, and discussed with, Group Legal Affairs. In 2020, no breaches were reported.

The course for **Global Trade Controls** (available in English) explains the most important aspects of international trade legislation. Compliance with trade controls is embedded in our systems and processes. Company master data is screened to check customers and suppliers against embargoes and lists of sanctioned parties.

The **Anti-Bribery & Corruption** (ABC) e-learning provides training on the most important features of bribery and corrupt behavior. In addition, the DSM ABC Policy and Compliance Manual (available in English and Chinese) is shared with selected employees in commercial and business roles, who must also follow ABC classroom training (integrated into the Competition Law classroom program.

The DSM **Security** e-learning covers our seven Key Security Behaviors. To complete this e-learning, employees are required to read and sign off on the DSM Code of Conduct for Information Security. The Cyber Fraud Awareness e-learning is an additional training to increase awareness among all employees regarding prevalent types of cybercrime. Furthermore, global as well as targeted phishing tests are regularly carried out to ensure that our people stay alert.

We also have rules to prevent misuse of **inside information** on the holding of or trading in DSM financial instruments, such as shares and other securities, and where applicable the holding of or trading in financial instruments of other companies. These rules apply to all relevant employees, including the Executive Committee, the Managing Board, and the Supervisory Board.

Value chain

The business principles most relevant to our supply chain are brought together in the **Supplier Code of Conduct** and are also structured along the three dimensions of People, Planet and Profit. The Supplier Code of Conduct, available on the company website, is signed off by suppliers in framework contracts, confirming their commitment to sustainability, among other things.

For our distributor and agent framework contracts, the **ABC Policy** is translated into terms and conditions to ensure ethical business conduct when these parties act on behalf of DSM or deal with DSM products further down the value chain.

Consequence management

We apply zero-tolerance consequence management to violations of the Code. Under our whistleblower procedure (DSM Alert), most (potential) violations are reported to and dealt with by local line management. Where this is not considered appropriate, complaints can directly be made to the DSM Alert Officer. In both cases, consequence management practices (such as official warning, temporary suspension, dismissal) are in place for substantiated violations to support compliance with the Code. The DSM Alert Officer reports to the Managing Board and also reports independently to the Audit Committee of the Supervisory Board twice a year. Any individual not employed by DSM who might wish to voice a concern regarding violations of the Code may also contact the DSM Alert Officer via the company website.

In 2020, 22 Alert cases (reports of potential violations of the Code) were received by the DSM Alert Officer, two of which were reported by an external party. This is at a level comparable with previous years. Three of these were potential bribery and corruption cases. After investigation, one of these three Alert cases was substantiated and consequence management was applied.

The table below gives an overview of all reported substantiated violations of the Code (including Alert cases), with a breakdown by Triple P dimension and region. Proven violations result in dismissal or other forms of consequence management. In line with this policy, 37 employees were dismissed in 2020 because of breaches of the Code, legal or local company regulations. In addition, 121 employees received another form of consequence management (official warning or suspension). Over the years, the number of dismissal cases has remained about the same. There has been an increase in the reporting of other kinds of consequence management cases, which may be attributable to increased awareness of the importance to the company of reporting these types of cases.

People

Most of the cases in the People dimension relate to violations of the Life Saving Rules. Inappropriate or disrespectful behavior that does not contribute to a psychologically safe and healthy working environment (discrimination, sexual and other kinds of harassment) is also reported in this dimension. Health and safety are priorities for the company and incident-reporting channels are well known.

Planet

There were five violations of the Code reported in the Planet dimension in 2020 due to irresponsible behavior on the part of an employee, of which two led to a minor environmental incident or product loss, three did not.

Profit

Most of the cases in the Profit dimension relate to fraudulent expense claims and incorrect registration of working hours.

Implementation of the DSM values

	2020	2019
Training and awareness e-learning: % of targeted employees trained		
General		
Code of Business Conduct	95%	94%
People		
Life Saving Rules	98%	95%
Respectful Behavior (as of Q4 2019)	96%	-
GDPR overview (as of Q2-2020)	95%	-
Planet		
Basic Course Responsible Care	97%	97%
Profit		
Global Trade Controls	95%	95%
Anti-Bribery & Corruption	94%	'96%
Security	96%	97%
Cyber Fraud Awareness	98%	96%
Competition Law: % of targeted employees having signed		
DSM Annual Competition Law Compliance Statement	100%	100%
Violations of the Code:	158	161
Number of dismissals / other consequence management		
Triple P breakdown		
People	29 / 102	27 / 104
Planet	0 / 5	1 / 2
Profit	8 / 14	14 / 13
Regional breakdown		
Europe & Africa	13 / 52	13 / 53
Americas	20 / 55	22 / 61
Asia–Pacific	4 / 14	7 / 5
Total	**37 / 121**	**42 / 119**
Alert cases (whistleblower procedure):	22	26
Number substantiated / not substantiated / under investigation		
Triple P breakdown		
People	7 / 7 / 2	6 / 14 / 1
Planet	1 / 0 / 0	0 / 0 / 0
Profit	1 / 2 / 2	2 / 2 / 1
Regional breakdown		
Europe & Africa	1 / 3 / 2	1 / 5 / 0
Americas	5 / 3 / 0	5 / 6 / 0
Asia–Pacific	3 / 3 / 2	2 / 5 / 2
Total	**9 / 9 / 4**	**8 / 16 / 2**[1]

1 The two Alert cases 'under investigation' in 2019 were resolved in 2020: one was substantiated, one was not substantiated.

Risk management

DSM risk management framework

A well-embedded risk management framework and accompanying organization are in place. The framework is based on COSO Enterprise Risk Management and this section is structured accordingly (see DSM Risk Management Cycle below).

Governance and culture

Risk management responsibilities

The Managing Board is accountable for the management of all risks associated with our company's strategy and business objectives. To this end an appropriate risk management system is in place.

It is the responsibility of the business groups, support functions, functional excellence departments and regions within DSM (the units) to set up, operate, maintain and monitor an appropriate risk management system within their area of responsibility.

We apply elements of the Three Lines Model to manage risks effectively.

First line: the responsibility for identifying, assessing and managing risks, including control execution, lies with the individual units.

Second line: Group Risk Management (GRM) designs, implements and maintains the overall risk management framework for the company. GRM also supports the first line in risk identification, assessment and management by designing and developing standards, systems and tools. Within GRM there is an independent department testing the effectiveness of the Internal Control Framework.

Besides GRM, there are also other departments acting as a second line, for instance, DSM Operations & Responsible Care covering Manufacturing, Supply Chain, SHE and Security.

Third line: Corporate Operational Audit (COA) conducts independent operational audits on all units on behalf of the Managing Board.

GRM and COA report directly to the CFO/Co-CEO, and COA has direct access to the COO/Co-CEO as well as to the Audit Committee of the Supervisory Board.

Code of Business Conduct

The Code of Business Conduct comprises our purpose, our culture, and our business principles which form the **basis for risk management**. Our culture is directly related to our purpose of creating brighter lives for all. All our employees receive regular training on the Code of Business Conduct and on detailed aspects of relevant business principles.

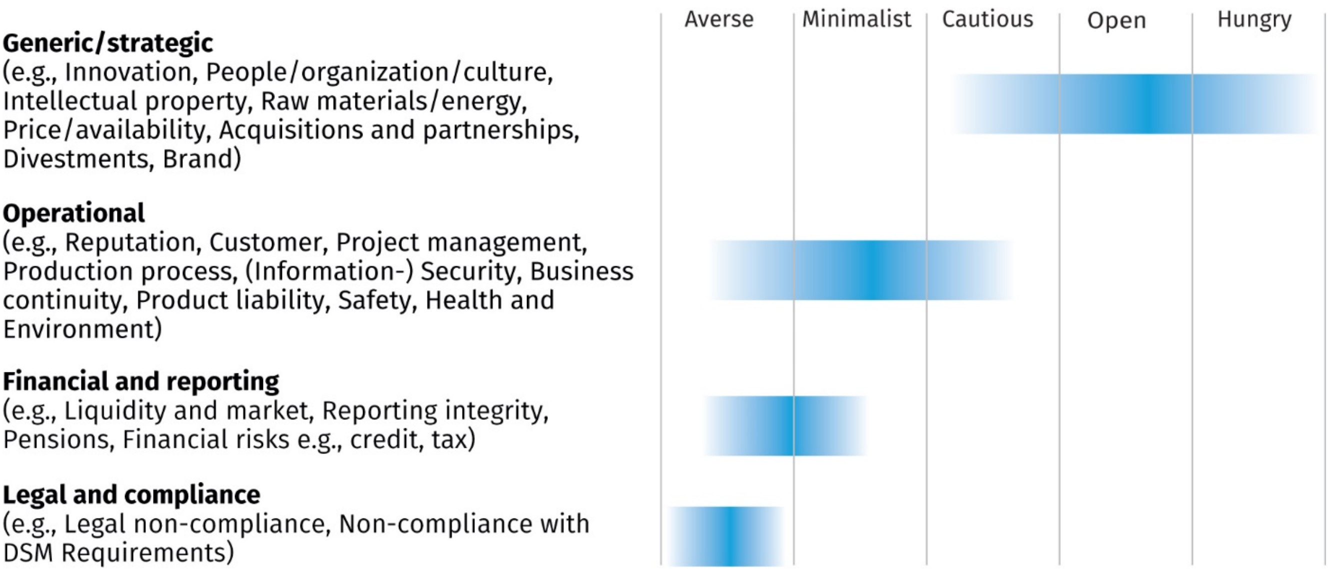
Strategy and objective-setting

The Managing Board supported by the Executive Committee establishes the company strategy and business objectives.

Risk appetite

The risk appetite defines the level of risk the company is prepared to take in the different risk categories, being generic/strategic, operational, financial & reporting and legal & compliance. The risk appetite supports **priority setting** in risk responses. The Executive Committee decides on the risk appetite, which is reviewed annually. In 2020, our risk appetite did not change compared to 2019 (see figure below).

DSM's risk appetite



Corporate Requirements

The Corporate Requirements are our internal rules and regulations, which are defined and maintained by the support functions and GRM. In line with the Code of Business Conduct and the risk appetite, the Corporate Requirements provide:

- **Risk-based guidance** for managing common business and process risks ('common controls for common risks')
- **Standards and practices** to increase the efficiency of our main business processes and functions

The Corporate Requirements are mandatory for all units, and management is responsible to implement these as and when applicable.

Performance

Risk management is designed to **create and preserve value**. Important elements are identifying, assessing and responding to risks that may impact the achievement of our company strategy and business objectives and the execution of control activities. This part of the risk management framework focuses on practices that support the organization in making decisions.

Risk identification, assessments and response

Risk assessments are performed at various levels in the organization. We take a standard but flexible approach to risk assessments:

- Risk assessment planning
- Preparation
- Risk identification and clustering
- Risk rating
- Evaluation and risk response

Both short-term risks (up to and including three years) and emerging risks (3–30 years) in the risk categories generic/strategic, operational, financial & reporting, and legal & compliance are the focus of our risk assessments. A Risk Assessment Manual and training is available to give guidance and continuously improve the effectiveness of our risk assessment process.

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 reviews and agrees on the short-term top risks as well as emerging risks. The Executive Committee also agrees on how to mitigate and monitor these.

Unit Risk Assessments

The DSM units conduct various types of risk assessments:

- **Business Risk Assessments** focus on risks that could jeopardize the attainment of our strategic goals and business objectives
- **Process Risk Assessments** are intended to make our processes more 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

In addition to the above, **specific risk assessments** may be performed for areas such as Safety, Health, Environment, Climate and (Cyber)security.

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.

Control activities

Within the business processes, controls are executed at all levels in the units by the first line. They are preventive or detective and may encompass a range of manual and (semi-)automated controls such as policies, procedures, authorizations, verifications and business performance reviews. We apply a standard approach for **user access management**, including privileged users, as well as **Segregation of Duties** (SoD) management. These controls also help us to avoid fraud and reputational damage, and support the Statements of the Managing Board.

The **Internal Control Framework** (ICF) aims to ensure reliable financial reporting, mitigate fraud risks and safeguard our assets. It defines the standard set of **key controls** that must be performed by the first line. The internal control department within GRM owns the ICF.

Review and revision

Internal Control review

The **testing of the effectiveness** of the key controls as included in our Internal Control Framework (ICF) is performed by the internal control department within GRM. This is one of the pillars of our House of Control supporting the Statements of the Managing Board.

COA audits

COA, as the third line, conducts independent operational audits based on the mandatory guidance of 'The Institute of Internal Auditors' to **provide additional assurance** to the Managing Board that significant risks are being managed and controlled effectively, efficiently and sustainably. Some of these audits are unannounced. The scope and frequency of COA audits is set according to the ranking of the auditable units in terms of the magnitude of risk, based on a limited number of defined characteristics. This program is agreed by the Executive Committee and the Audit Committee of the Supervisory Board.

Enhancement of the risk management system

During 2020, the following **main improvements** were made to our risk management framework.

Climate Risk Assessments

To improve our understanding of the **physical risks related to climate change**, we conducted an initial mapping of the risk exposure of our top 30 sites. The assessment was based on three different scenarios, two time horizons (2030/2050) and for five hazards (flooding, water scarcity, cyclones, temperature increase, wildfires). Further analysis is ongoing to validate this initial mapping, to define the required management approach for these risks, and to define the approach for assessing similar risks in our value chains.

An approach was defined for assessing the climate risks coming from the **transition to a low-carbon economy**. The first pilot is underway using three scenarios, aligned with the ones used for the physical risk assessments.

Other improvements

In 2020, a dedicated and specialized **internal control department** was established within GRM, which provides independent assurance of the effectiveness of the key controls as included in the ICF.

The governance, tools and processes to **manage SoD conflicts** were strengthened.

Establishment of the **Cybersecurity Governance Board** that keeps oversight of the cybersecurity risks and controls in the IT, Operations Technology, and R&D domains.

Our **Corporate Requirements** have been updated in order to:

- Standardize identity verification and access authorization to our sites
- Standardize measures to reduce cybersecurity risks for our operations
- Streamline our ways of working when dealing with personal data

Information, communication and reporting

Communication channels

We strive for an **open communication culture** and have various **channels for communicating risk information** both internally and externally. These channels enable our organization to provide relevant information for decision making.

Discussions of risks are integrated into normal business discussions, as these are an intrinsic part of doing business. However, certain specific structures are in place to ensure that specific risks get sufficient attention:

- Global Fraud Committee
- Global Issue Committee
- Cybersecurity Governance Board
- Ethics Board for People Data
- Privacy Council
- Alert Committee (Whistleblower policy)
- Values Training Review Team
- Value Assurance Reviews
- Risk Management Committees in the different units
- Dedicated discussions with the Executive Committee on the Corporate Risk Assessment and the outcome of the Letter of Representation process

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. The **material incidents** are reported in the section What still went wrong in 2020.

Top and emerging risks

The output of the Corporate Risk Assessment process — being top risks and emerging risks — is discussed in the Audit Committee of the Supervisory Board and reported below.

Our risk profile

The risk management activities as performed by the first line as well as the reviews/audits conducted by the second and third line in 2020 did not indicate any material failings in the design and effectiveness of our risk management and internal control system. This is the basis for the Statements of the Managing Board and for the risk disclosures below.

Top risks and related mitigating actions

Below the **four most important risks** are given that might prevent us from achieving the targets defined in our strategy, along with the mitigating actions that we are taking to further reduce our exposure. These risks are labeled as top risks as the exposure on DSM's EBITDA is an indicative €30 million or more, or because they have a major non-financial impact such as on reputation.

People, organization and culture

There is a risk that we might not be able to attract, retain and develop the workforce required to deliver on our strategy, to deliver above-market growth and retain strong operational efficiency. To address this risk, different initiatives were deployed to support our employees working remotely in an effective way, to maintain high levels of engagement, and to continue people development using digital tools. Our new Inclusion & Diversity strategy was launched with a scope beyond gender and internationalization, to build a more inclusive environment for people to contribute to their full potential. Our new Culture Compass was introduced as a navigational tool to support our purpose-led, performance-driven strategy. Further advancement of our organization, people and culture remains a key focus area, to ensure that we are able to deliver on our strategy in a rapidly changing world.

Further mitigations: Our new People & Organization strategy defines our key priorities for the next period, including creating a flotilla-style organization, creating a contemporary workplace, driving people empowerment, rolling out the 'Leading through Culture' program to people managers, and implementing a framework for modern, flexible rewards.

Purpose-driven growth

There is a risk that we might not be able to deliver on our organic growth targets, as key drivers behind our projected growth are our innovation projects as well as commercial synergies from recent acquisitions. To address this risk, immediate focus was placed on the integration of our three biggest, recent acquisitions (Royal CSK, Glycom and Erber Group). These are each at a different stage of progress. The integration approaches were tuned to fit the specific needs of each business. Several Important innovation projects progressed well in 2020, such as Veramaris® algal-based omega-3, Bovaer® methane inhibitor solution, fermentative Stevia, CanolaPRO™ plant-based proteins, and the introduction of bio-based material grades for Dyneema®, Stanyl® PA46, and Arnitel® TPC. Despite the progress made so far and having processes in place to manage and monitor further progress of innovation projects on a timely basis, time-to-market and delivering peak sales remain a risk.

Further mitigations: We are adapting our innovation approach from project-based to platform-based. Growth platforms are linked to major global societal, technological and environmental trends and are closely connected with our current businesses. Each platform will have a clear pipeline of projects in different stages of maturity, and sales growth will be less dependent on the success of individual large projects.

Market environment and competitive position

There is a risk that we might not meet our strategic targets due to increasing competition, especially from low-cost/margin players. To address this risk and increase our ability to understand changing end-market needs and to serve our customers better, programs were launched in 2020 in different parts of the company, such as 'Fit for Growth' in the Nutrition cluster and 'Agility to Grow' in the Materials cluster. These programs also simplified our organizations, improving our cost base. In 2020, our teams adapted their way of connecting to customers, driven by the travel restrictions. The extra efforts to engage in new, digitally enabled ways were well received by our customers, resulting in an all-time high Net Promotor Score. Nonetheless, the risk remains of facing increased competition for some product-market combinations.

Further mitigations: To distinguish ourselves from our competitors, we continue to invest in our product and service portfolio to address customer needs such as the demand for bio-based and recyclable materials, and we enable customers to develop solutions with a more sustainable footprint.

Operating in a digital world

In an increasingly digital world, DSM is subject to cybersecurity attacks which, if successful, could lead to a loss of Intellectual Property, discontinuity of operations, or otherwise have a negative impact on the company. To address this risk, we continued throughout 2020 to implement our multi-year cybersecurity program that covers the domains of information technology, operations technology, and R&D laboratory systems. A global Cybersecurity Governance Board was established to ensure a global, cross-functional approach to cyber risks and related risk responses. Phishing tests, both global and targeted, were frequently executed. To increase awareness on cybersecurity risks and controls, a DSM Global Cybersecurity Week was held with a series of webinars for all employees as well as a number of focus sessions for specific target groups.

Driven by our strategy, both the number and the importance of digital initiatives is increasing. In combination with the unusual circumstances created by the COVID-19 pandemic and cyber threats becoming more sophisticated, the cyber risk remains, despite the progress made in this area.

Further mitigations: The implementation of our multi-year cybersecurity program will continue in 2021. In parallel, we will be updating our maturity assessment such that we can adjust our priority setting in line with changes in our cyber risk profile.

Emerging risks

The following emerging risks have been identified by the Executive Committee.

- Our Nutrition and Materials markets may be disrupted by non-climate related longer-term changes in the value chain or end-markets, such as new business models, industry consolidations or changes in end-consumer behavior
- We may not be able to respond fast enough to the physical impacts of climate change on our operations, value chains and end-markets (climate physical risks)
- We may not be able to respond fast enough to the changes related to the transition to a net-zero world and the impact these will have on our operations, value chain and end-markets (climate transition risks)
- Risk of increasing polarization in the world. This could lead to new legislation and new regulations that have a negative impact for our company (such as increasing taxation, trade barriers, sanctions and embargoes, and labor costs)

Where relevant, actions have been defined to anticipate on emerging risks in a timely manner, like in the Climate Action Agenda. On the other hand, some of the emerging risks also offer new opportunities for our Brighter Living Solutions.

COVID-19 related risks

In 2020 we responded swiftly to the impacts of the pandemic. We ensured that people were safe, we kept our supply chains and operations running, and continued to serve our customers. Some of our end-markets were impacted positively by the pandemic, whereas others were facing a significantly decreased demand. Our financial performance was solid in 2020 and COVID-19 has demonstrated the relevance of our strategic focus on Nutrition, Health and Sustainable Living. Hence, COVID-19 was not considered a top risk, but the effects of the pandemic have been factored into the assessment of all other risks. This was consistent with the outcome of the Materiality Matrix assessment.

In 2021 we will focus on keeping our employees engaged, as working remotely will be the standard for most of our office workers, at least in the first part of the year. Special attention will be paid to mental wellness and increasing resilience against pandemic fatigue.

Other important risks

There are also more generic business risks, such as business continuity, sourcing, product liability, intellectual property, tax, and business process risks. Our risk management system is set up to adequately monitor and respond to these risks.

We did not identify any significant company-specific risks associated with Brexit and the ongoing trade war between the US and China, other than the general uncertainties around, for example, currency and other economic developments.

What still went wrong in 2020

The year 2020 presented us with many challenges and opportunities. We integrated three major new acquisitions, carved out our Resins & Functional Materials business, and implemented two wide-ranging internal change programs. The effects of the COVID-19 pandemic, meanwhile, placed additional and wholly unexpected demands upon our company worldwide.

Despite the challenging circumstances we were able to maintain our high standards. Nevertheless, sometimes things still go wrong. Here we share the **most significant incidents** of 2020 across all three dimensions of People, Planet and Profit. This includes health, safety, environment, and security incidents (including fraud) as well as what we have learned from our businesses that has not developed as planned.

Preventing repeat problems requires us to **understand each incident** to the best of our ability. When an incident occurs, our first priority is to take care of any injuries and repair any damage. We investigate every recordable incident using a fixed **root cause analysis** method. We also trigger an improvement cycle, see Safety, health & well-being. We put new requirements or operating procedures in place as needed.

In line with our reporting policy, this overview includes not only incidents but also **some serious near-misses**. Near-misses are cases that did not result in injury, illness or serious damage but which could have done so. Even when a crisis is averted, it is our responsibility to learn from it and do better the next time. We have a process in place to collect the information about incidents and some serious near-misses as presented in this overview, using various sources including our internal Letter of Representation, and our reporting system for SHE and Security incidents.

People

Incidents involving falls

At DSM Nutritional Products in Sisseln (Switzerland), a contractor fell from a step near the bottom of a flight of stairs and suffered an injury to his shoulder ligaments.

At DSM Nutritional Products in Belvidere (New Jersey, USA), an employee slipped while cleaning the floor and fractured his pelvis.

At DSM Nutritional Products in Mairinque (Brazil), a contractor truck driver slipped while getting out of the cabin of a truck. He suffered a number of fractured ribs.

At DSM Food Specialties Yantai (Shandong Province, China) an employee broke his foot descending a ladder, when the ladder slid under him and he fell to the ground.

At DSM Nutritional Products in Jiangshan (Jiangsu Province, China) an employee broke his thigh bone when he fell to the ground after stumbling over a manual pallet mover.

To reduce such slip & trip incidents, we emphasize the importance of 'keeping eyes on task and mind on task' through dedicated behavior-based training programs.

Other health and safety incidents

At DSM Nutritional Products in Naberezhnye Chelny (Tatarstan, Russia), an employee carrying out maintenance work broke his little finger when the bit of his hand drill jammed.

At DSM Biomedical in Exton (Pennsylvania, USA), an employee lost the tip of his thumb while carrying out maintenance work on an exhaust fan motor. To prevent similar incidents, a general retraining in the DSM Life Saving Rules took place.

At DSM Nutritional Products in Grenzach (Germany), an employee passed out after entering a restricted area due to lack of oxygen caused by an unintended nitrogen flow into that area. A colleague who was close by noticed that the technician was unresponsive and immediately initiated an emergency response. Fortunately, the employee quickly and fully recovered.

At DSM Food Specialties in Seclin (France), an employee broke his foot while trying to reposition a slipped calibration weight, despite wearing protective shoes.

At DSM Nutritional Product in Kingstree (South Carolina, USA), a fire occurred at the storage shelter for empty raw material bags. The fire did not lead to any personal injury.

At DSM Nutritional Products in Sisseln (Switzerland), an operator injured his left upper arm. As he was lifting a heavy filter flange, he lost grip with his gloved right hand and overstretched his left arm, causing a tendon rupture.

At DSM Nutritional Products in Ueberlandia (Brazil), an employee in the snake farm suffered a snake bite when checking with a stick on a snake that appeared to be dead, but was still alive.

At DSM Additive Manufacturing in Geleen (Netherlands), a contractor hurt his back while lifting a bucket as he was preparing a laboratory production batch.

Security incidents

At DSM Nutritional Products in Brazil, a truck carrying DSM products was approached by armed thieves on a parking lot near a gas station. The driver was threatened with firearms and had to hand over all DSM products that were in the truck. Fortunately, no personal injuries were sustained.

An IT service provider informed DSM that not all IT security controls for Cloud services used by DSM were found to be effective, leading to data privacy vulnerabilities. DSM reported this incident to the Dutch Privacy Authority. Afterwards the IT service provider informed DSM that all deficiencies had been rectified and that they had not found any evidence of a data breach.

While working for DSM Food Specialties in France, an employee was attacked, injured in the face and robbed of money by two thieves while walking back from a restaurant to his hotel.

Planet

At DSM Nutritional Products in Brotas (Brazil), a minor explosion occurred in a waste water collection tank due to anaerobic fermentation of a small amount of organic material at the bottom of the tank. Root cause analysis revealed that the explosion, which blew pieces off the top of the tank, had been caused by hydrogen produced by an unexpected fermentation process. Nobody was injured, nor did a loss of containment occur. The incident was reported globally across our operations, and measures were put in place to prevent any reoccurrence of this unusual incident.

Profit

At DSM Biomedical in Exton (Pennsylvania, USA), a balance sheet review revealed an item that had not been properly booked during an ERP system transition in 2018, and which negatively impacted the Profit and Loss statement for 2020.

At DSM Nutritional Products in Lalden (Switzerland), a power failure, attributable to the external power net operator, led to a loss of production for several days.

At DSM Nutritional Products (Netherlands), an error in the classification of raw materials imports led to an understatement of import duty liabilities. This understatement was reported to the Dutch Customs Authorities. It was rectified by means of a retrospective additional payment of import duties.

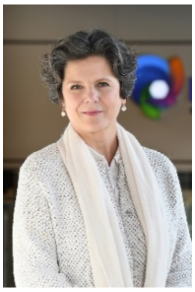
At DSM Nutritional Products (Switzerland, Indonesia), we had open positions in foreign currencies that were unintentionally not hedged, resulting in unplanned financial losses.

Supervisory Board and Managing Board Royal DSM

Supervisory Board

Rob Routs (1946, m), Chair

First appointed: 2010. End of current term: 2022. Nationality: Dutch. Nomination Committee (Chair), Remuneration Committee (member). Last executive position held: Executive Director Downstream and member of the Board of Royal Dutch Shell plc. Supervisory directorships/other positions: member of the Board of Directors of AECOM; member of the Board of Directors of ATCO Group Ltd.



Pauline van der Meer Mohr (1960, f), Deputy Chair

First appointed: 2011. End of current term: 2021. Nationality: Dutch. Remuneration Committee (Chair), Nomination Committee (member). Last executive position held: President Executive Board Erasmus University Rotterdam. Supervisory directorships/other positions: Non-executive Director HSBC Holdings plc., non-executive director of the Board of Viatris Inc.; Chair, Supervisory Board EY Netherlands; Chair, Board of Trustees Nederlands Danstheater; Chair of the Monitoring Committee of the Dutch Corporate Governance Code.

Eileen Kennedy (1947, f)

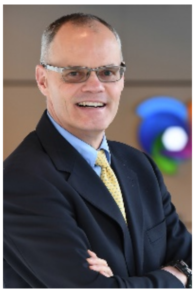
First appointed: 2012. End of current term: 2022. Nationality: American. Sustainability Committee (Chair), Nomination Committee (member). Position: Professor Nutrition Friedman School of Nutrition Science and Policy at Tufts University in Boston (USA); Supervisory directorships/other positions: Chair of Sight and Life Foundation.

Thomas Leysen (1960, m)

First appointed: 2020. End of current term: 2024. Nationality: Belgian. Audit Committee (member), Sustainability Committee (member). Last executive position held: CEO of Umicore; Supervisory directorships/other positions: Chairman of the Board of Umicore; Chairman of the Board of Mediahuis; Chairman of the Belgian Corporate Governance Commission; Chair of the King Baudouin Foundation.

Erica Mann (1958, f)

First appointed: 2019. End of current term: 2023. Nationality: Australian. Sustainability Committee (member), Audit Committee (member). Last executive position held: Member of the Board of Management of the Bayer Group and Global President of Bayer's Consumer Health Division. Supervisory directorships/other positions: Non-executive/Independent Director of the Boards of Perrigo and Kellogg Company.



Frits Dirk van Paasschen (1961, m)

First appointed: 2017. End of current term: 2021. Nationality: Dutch and American. Audit Committee (member), Sustainability Committee (member). Last position held: CEO Starwood Hotels and Resorts. Supervisory directorships/other positions: non-executive Board member Williams Sonoma (USA); Chair Board of Convene; Board member of CitizenM Hotels (NL); Board member JCrew group; Advisor to private equity firm TPG, The Red Sea Project, the Indian School of Hospitality; CEO practice at Russell Reynolds; CEO and Founder of The Disruptor's Feast Advisory.

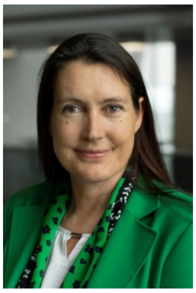
Pradeep Pant (1953, m)

First appointed: 2016. End of current term: 2024. Nationality: Singaporean. Audit Committee (member), Sustainability Committee (member). Last executive position held: EVP and President APAC and EMEA of Mondelez International. Supervisory directorships/other positions: Honorary Council Member Food Industry Asia; non-executive Director Statutory Boards Max India Ltd, Max BUPA Health Insurance Co Ltd., MAX Life Insurance Co Ltd. (India), and Antara Senior Living Ltd. (India), President of Pant Consulting Pte Ltd.

John Ramsay (1957, m)

First appointed: 2017. End of current term: 2021. Nationality: British. Audit Committee (Chair), Remuneration Committee (member). Last position held: Chief Financial Officer (CFO) and interim CEO of Syngenta AG. Supervisory directorships/other positions: Non-executive director of RHI Magnesita NV, non-executive director of G4S plc. and non-executive director of Croda International.

Managing Board



Geraldine Matchett (1972, f), Co-CEO

Position: Co-CEO & CFO since February 2020; member Managing Board since August 2014 and CFO since December 2014. End of current term: 2022. Nationality: British, French, Swiss. Supervisory directorships/other positions held: Non-executive Director of ABB; Board member of Catalyst Europe; Member of the HRH the Prince of Wales' A4S (Accounting 4 Sustainability) CFO Leadership Network; Board member of FCLTGlobal; Executive Committee Member of the World Business Council for Sustainable Development (WBCSD); Member of the Foundation Board of IMD Business School.
e-mail: geraldine.matchett@dsm.com

Dimitri de Vreeze (1967, m), Co-CEO

Position: Co-CEO & COO since February 2020; member Managing Board since September 2013. End of current term: 2021. Nationality: Dutch. Supervisory directorships/other positions held: Chairman Supervisory Board DSM Netherlands; Member Executive Committee and Board member of Cefic (European Chemical Industry Council) and Chair Sustainability Advisory Forum; Board member '*Fonds voor de topsport*' (NOC*NSF; Dutch Olympic Committee Fund for top sport); member Supervisory Board Sanquin; Chairman Young Captain Foundation.
e-mail: dimitri.vreeze-de@dsm.com

Statements of the Managing Board

The Managing Board is responsible for the design and operation of the internal risk management and control systems. In discharging this responsibility, the Managing Board has made a systematic assessment of the effectiveness of the design and operation of the internal control and risk management systems.

On the basis of this report and in accordance with best practice 1.4.3 of the Dutch Corporate Governance Code of December 2016, and Article 5:25c of the Financial Supervision Act, the aforementioned assessment and the current state of affairs, to the best of its knowledge and belief, the Managing Board confirms that:

- The internal risk management and control systems of the company provide reasonable assurance that financial reporting does not contain any material inaccuracies
- There have been no material failings in the effectiveness of the internal risk management and control systems of the company
- There are no material risks or uncertainties that could reasonably be expected to have a material adverse effect on the continuity of DSM's operations in the coming twelve months
- There is a reasonable expectation that DSM will be able to continue its operations and meet its liabilities for at least twelve months, therefore it is appropriate to adopt the going concern basis in preparing the financial reporting

It should be noted that the above does not imply that these systems and procedures provide absolute assurance as to the realization of operational and strategic business objectives, or that they can prevent all misstatements, inaccuracies, errors, fraud and non-compliances with legislation, rules and regulations. Nor can they provide certainty that we will achieve our objectives.

In view of all of the above, the Managing Board confirms that, to the best of its knowledge and belief, the financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the company, and that the management report includes a fair review of the position at the balance sheet date and the development and performance of the business during the financial year, together with a description of the principal risks and uncertainties that the company faces.

Heerlen, 1 March 2021

The Managing Board
Geraldine Matchett, Co-CEO
Dimitri de Vreeze, Co-CEO

Report by the Supervisory Board

Introduction by the Chair

Dear reader,

In all the years reported on by DSM since the company's first foundation, probably not many have presented our company, the executive team and the Supervisory Board with the challenges that we encountered in 2020. Looking back on the year, I am pleased that DSM faced this environment in a courageous, caring and collaborative spirit that showed what a truly innovative, agile and robust company we are.

A change of leadership is always a challenging moment in the life of any organization. With our long-standing CEO Feike Sijbesma stepping down on February 15, we entered a new phase in DSM's history – led by our Co-CEOs Geraldine Matchett and Dimitri de Vreeze. Carefully planned and well prepared for, this transition occurred smoothly, providing us with an innovative model of joint leadership based on a deep mutual understanding and respect. I am proud of the way Geraldine and Dimitri have taken up their new joint role. The Supervisory Board also appreciates the thorough way in which Feike did prepare and execute the transition.

Geraldine and Dimitri, along with the entire Executive Committee, found themselves confronted with unprecedented challenges because of the COVID-19 pandemic. They were not alone in this, however. Throughout the year, our employees across the globe demonstrated determination and initiative, maintaining safety standards, protecting supply chains and keeping our customers supplied in often very difficult circumstances. Our people showed what it means to work for a purpose-led, performance-driven company, contributing their time, know-how and resources to support their local communities.

Despite the difficulties created by the pandemic, we stuck to our values and our strategy, and continued to make progress in terms of People, Planet and Profit during 2020. We are becoming a more diverse, agile and resilient organization, and we took further strides in developing a business that does not only have sustainability as a core value but which also visibly propagates sustainability in the wider world. The special challenges of 2020 have shown that, with creative thinking and responsible management, this approach improves both the top and bottom line. We are showing what it means to do well by doing good.

The safety of our employees and contractors is always a key priority to the Supervisory Board and we spend ample time on it in our meetings. I am glad to report that in 2020, our Safety performance improved. We will continue to focus on safety as every incident is still one too many.

The year 2020 was also a milestone year for DSM in terms of progress on our growth strategy focused on Nutrition, Health and Sustainable Living. In order to strengthen our ability to deliver organic growth, we implemented changes in Nutrition and Materials to get our teams closer to customers and respond better and faster to their needs, while reducing internal complexity and cost. We enhanced our platform-based approach to innovation, ensuring a healthy pipeline of new products and solutions. Additionally we integrated three important acquisitions into DSM's Nutrition business – CSK, Glycom and the Erber Group businesses Biomin and Romer Labs that enhance our offering to customers. We extend a warm welcome to our new colleagues, and view with excitement the new capabilities and reach that have been added to our Nutrition business. In addition, we announced the divestment of Resins & Functional Materials and associated businesses to Covestro AG, which we expect to close in the first half of 2021. These businesses join a new home with a leading position in their sector, a track record of investment, and values closely aligned with our own, including sustainability and care for people.

The constraints of the pandemic forced us all to interact in new ways. It was excellent to see how successful DSM's first virtual investor event was, along with the first virtual Annual General Meeting. My colleagues and I on the Supervisory

Board were pleased that we were able to uphold the quality and effectiveness of our collaboration throughout the year, despite the fact that we were unable to hold physical meetings or enjoy our usual annual site visit. Like everyone else, we adapted to the situation, we learned from new experiences, and we supported each other.

I would like to thank our Co-CEOs and our Executive Committee for everything they gave to DSM in 2020, the many stakeholders who continue to place their trust in our company and all of DSM's employees: Together we delivered a performance of which we can all be proud.

Rob Routs, Chair of the Supervisory Board

Supervisory Board Report

This Report provides further information on the way the Supervisory Board performed its duties in 2020. These include supervising the policy pursued by the Managing Board, the Managing Board's performance of its managerial duties, and the general course of affairs within our company and its businesses, as well as assisting the Managing Board with advice, either upon request or proactively. Finally, these duties also include assessing the Managing Board's performance and ensuring that their remuneration is in line with that performance and that it provides the appropriate incentives. Since the inception of an Executive Committee, the Supervisory Board has also been responsible for ensuring that the checks and balances that are part of the two-tier governance system are still taken into account, paying specific attention to the dynamics between the Managing Board and the Executive Committee.

The responsibility of supervising the policy pursued by the Managing Board includes evaluating the way the Managing Board implements DSM's strategy for long-term value creation and promotes a culture aimed at creating value and in line with our multi stakeholder approach both the Managing Board and Supervisory Board have the responsibility for weighing up the interests of all stakeholders.. This is all described in the sections Strategy, People and Corporate governance and risk management.

Composition of the Supervisory Board

The composition of DSM's Supervisory Board is diverse in gender, nationality, background, knowledge and experience. The Board comprises five men and three women. Two members are Dutch, one American, one Dutch-American, one British, one Singaporean, one Australian, and one Belgian. The Board's current members are Rob Routs (Chair), Pauline van der Meer Mohr (Deputy Chair), Eileen Kennedy, Thomas Leysen, Erica Mann, Frits van Paasschen, Pradeep Pant and John Ramsay. For detailed information on their backgrounds, see the company website and Supervisory Board and Managing Board Royal DSM.

Following best practice 2.1.10 of the Dutch Corporate Governance Code, the Supervisory Board establishes that its members are able to act critically and independently of one another, the Managing Board and any particular interests involved. To safeguard this, the Supervisory Board is composed in such a way that all its members are independent in the meaning of best practice 2.1.8 of the Dutch Corporate Governance Code.

The targeted profile of the Supervisory Board is reflected in its regulations, which are published on the company website under 'Corporate Governance'. The Supervisory Board has four committees to cover key areas in greater detail: Audit, Nominations (to the Supervisory Board and Managing Board), Remuneration (of the Supervisory Board and Managing Board), and Sustainability. Information on these committees is given elsewhere in this section. The charters of the committees are published on the company website under 'Corporate Governance'.

Relationship and stakeholder management

In performing its duties, the Supervisory Board acts in accordance with the interests of the company and the business connected with it, taking into consideration the interests of the company's stakeholders. The Chair of the Supervisory Board is in regular close contact with the Co-CEOs, as is the Chair of the Audit Committee with the CFO.

Furthermore, the Supervisory Board regularly interacts with members of the Executive Committee who attend Supervisory Board meetings and the yearly site visit of the Supervisory Board.

The Supervisory Board interacts with our employees on various occasions and in various contexts. The Supervisory Board regularly receives information on relevant topics from senior leaders and experts in the company during committee meetings, full Supervisory Board meetings, and also as part of their ongoing professional education. An overview of the kind of topics discussed during the 2020 Board meetings, which also gave the Supervisory Board an opportunity to interact with the employees involved in them, is given below. Normally its annual site visit gives the Supervisory Board the opportunity to interact with employees at different levels, from the shop floor to senior leadership, thus collecting valuable information and insights from various sources across the company. As a result of COVID-19, the Supervisory Board was unable to make a physical site visit in 2020. Instead, an interactive virtual plant tour of the Veramaris facilities in Blair (Nebraska, USA) was given.

Direct, one-to-one contact between Supervisory Board members and Managing Board and Executive Committee members generally follows naturally from topics discussed in the meetings of the Supervisory Board. These discussions draw on the expertise of individual Supervisory Board members, whose advice is sought on a wide range of specialist topics as required. Supervisory Board members also have direct contact with other employees in the course of the aforementioned site visits and specifically arranged meetings.

In 2020, meetings were held virtually whenever practicable, while others (e.g., certain induction visits to DSM sites for new Supervisory Board members) had to be postponed.

Examples of the meetings and visits that could take place include Thomas Leysen's visit to DSM Nutritional Products in Kaiseraugst including a site visit to the DSM Nutritional Products Sisseln site (both Switzerland), and to DSM Protective Materials in Heerlen (Netherlands). Rob Routs and Frits van Paasschen reviewed DSM's digital strategy with the Chief Digital Officer. Rob Routs and Eileen Kennedy had an in-depth discussion on Personalized Nutrition with Co-CEO Geraldine Matchett and the Senior Vice President Corporate & Nutrition Strategy. Pradeep Pant, who is based in Singapore and has extensive knowledge of and experience with Asian markets, continued to be in regular contact with our senior management in that region.

The Supervisory Board takes an active interest in maintaining a good understanding of our stakeholders and their positions on various topics related to the company's areas of business. This includes the perceptions of our shareholders. The Supervisory Board is informed of the position of other DSM stakeholders by the Managing Board. In addition, the Supervisory Board collects such information through its own network.

DSM Supervisory Board: key data and attendance records

	Rob Routs (C)	Pauline van der Meer Mohr (DC)	Eileen Kennedy	Thomas Leysen	Erica Mann	Frits van Paasschen	Pradeep Pant	John Ramsay
Diversity								
Year of birth	1946	1960	1947	1960	1958	1961	1953	1957
Gender	Male	Female	Female	Male	Female	Male	Male	Male
Geography	Europe	Europe	North America	Europe	Oceania	Europe / North America	Asia	Europe
Tenure								
Initial appointment	2010	2011	2012	2020	2019	2017	2016	2017
Latest reappointment	2020	2019	2020	n.a.	n.a.	n.a.	2020	n.a.
End of current term	2022	2021	2022	2024	2023	2021	2024	2021
Reappointment possible?	N	Y	Y	Y	Y	Y	Y	Y
Attendance								
Committee memberships	NomCo (C) RemCo	RemCo (C) NomCo	SustCo (C) NomCo	AC	AC	AC	AC	AC (C) RemCo
Attendance SB meetings[1]	100%	100%	100%	100%	100%	100%	100%	100%
Attendance Committee meetings	NomCo 100% RemCo 100%	NomCo 100% RemCo 100%	NomCo 80%[2] SustCo 67%[2]	AC 100% NomCo 100%	AC 83%[3] SustCo 100%	AC 100% SustCo 100%	AC 100% SustCo 100%	AC 100% RemCo 100%

1 Attendance is reflected for the one physical Supervisory Board (SB) meeting and nine virtual meetings held in 2020. In addition to these meetings there were also four virtual Supervisory Board meetings in 2020 for which the decision-making had been mandated by the SB to the Chair of the Board and the Chair of the Audit Committee, who both attended these calls.

2 Eileen Kennedy missed the Nomination Committee and the Sustainability Committee on 10 February for personal reasons.

3 Erica Mann missed the Audit call of the third quarter due to the time of the call in her time zone.

DSM Supervisory Board: key competences

	Rob Routs (C)	Pauline van der Meer Mohr (DC)	Eileen Kennedy	Thomas Leysen	Erica Mann	Frits van Paasschen	Pradeep Pant	John Ramsay
Competences								
General Management	x	x	x	x	x	x	x	x
Finance/Accounting/Auditing	x			x				x
Strategy	x	x	x	x	x	x	x	x
Risk	x	x		x				x
Marketing & Sales				x	x	x	x	
Operations & Manufacturing	x			x	x			
R&D/Innovation/Technology	x		x	x				
Safety	x	x		x				
Sustainability & Environment	x	x	x	x		x		
Emerging Economies					x	x	x	x
People & Organization	x	x		x	x		x	
IT/Digital						x		
Governance/Compliance/Legal Affairs	x	x	x	x	x			x
Public Affairs		x		x	x			
DSM's businesses	x	x	x	x	x		x	

Supervision and advice

The Supervisory Board performs its duties of supervising and advising the Managing Board with respect both to **recurring standard agenda items** for Supervisory Board meetings and to specific topics that become relevant at any given point in time.

The most prominent regular agenda item is an update on **business performance**, financials, treasury and investor relations topics. As part of this agenda item, the Supervisory Board tracks the company's financial performance, approves the annual Finance and Capital Expenditure Plan, is updated on capital markets expectations and deliberates on any additional treasury topics as needed. In this COVID-19 year time was also spent on business continuity, as different scenarios and their capital and liquidity impact were modeled to be fully prepared for the economic impact of COVID-19. In 2020, the Supervisory Board also discussed and approved the usual share buy-back programs to cover commitments under share-based compensation plans and the stock dividend. In addition, the funding plan for the acquisition of the Erber Group was discussed and approved. Furthermore, restructuring programs were discussed and approved.

In line with our overall strategy, the Supervisory Board regularly discusses our **M&A strategy** and relevant developments within our sectors. The Supervisory Board was actively involved in the process of reviewing several potential M&A targets. This eventually led in 2020 to the expansion of our share in Zhejiang DSM Zhongken Biotechnology Co., Ltd. from 60% to 100%, and the acquisition of Glycom and the Erber Group, and finally the intended divestment of our Resins & Functional Materials and associated businesses. The Supervisory Board also discussed and approved a write down on our solar assets following the aforementioned divestment, as well as two impairments in DSM Bio-based Products & Services. One following the decision to mothball the second-generation bio-ethanol plant in Emmetsburg (Iowa, USA) ('Project Liberty') (in the second quarter) and one owing to an expected subdued market for biofuels (in the fourth quarter).

Strategy is a key topic on the Supervisory Board's agenda, and in 2020 the Board dedicated most of its meeting time to reviewing **DSM's strategy**. The outcome of these reviews was presented during our Investor Event in November 2020. This includes expanding our specialty activities in Nutrition. This will be done by adding a third dimension to our Nutrition business model, which is currently built on the axes of Global Products and Local Solutions. This third dimension is

Precision & Personalization, an evolving field that is powered by developments in biosciences and digital technologies. This growth strategy is accelerated by our recent acquisitions. It also includes transforming our innovation methodology from a project-based approach to a platform-based one. As part of these strategic reviews, the Supervisory Board was in particular updated on the strategies of our various businesses. Topics included a deep dive into the subject of sustainable animal farming; an innovation review that included an update on our large innovation projects such as Project Clean Cow, Veramaris®, and Avansya®; Digital+; and our People & Organization strategy.

The smooth running of the Supervisory Board continued as usual in 2020, despite the restrictions on mobility imposed by the COVID-19 pandemic. Here we show how also the DSM Supervisory Board met throughout 2020. Left-hand column, top to bottom: Rob Routs, Frits van Paasschen. Middle column: John Ramsay, Erica Mann, Eileen Kennedy. Right-hand column: Pauline van der Meer Mohr, Thomas Leysen, Pradeep Pant.

Site visits

Every year, the Supervisory Board visits **DSM sites** in a particular region. This fosters interaction with employees across different areas of the company and provides Supervisory Board members with opportunities for continuing education. This year's visit centered on Blair (Nebraska, USA) where our Avansya® and Veramaris® products are manufactured. Due to the COVID-19 related restrictions visiting in person was not possible. Instead a fully virtual site tour was organized in October 2020.

Supervisory Board meetings and performance evaluation

In 2020, the Supervisory Board held its five regular **meetings** and one regular call in the presence of the Managing Board and Executive Committee, as well as four additional meetings also in the presence of the Managing Board and Executive Committee members. All meetings but one took place virtually as a result of the COVID-19 restrictions. The additional meetings were needed partly because the time slots available for virtual meetings were shorter than they would have been for physical meetings, given the constraints imposed by the time-zone differences between the various locations in which the members of the Supervisory Board are based. The balance of the time usually allocated for meetings during the course of the year was dedicated to reviewing the company's strategy, among other topics. The additional meetings were also needed to discuss and approve possible acquisitions and the divestment of our Resins & Functional Materials and associated businesses, and to engage in the alternative site visit program. Information on attendance of Board and Committee meetings can be found in the table in this Supervisory Board Report.

The Supervisory Board also convenes in the absence of the Managing Board, which usually happens before each meeting.

An **evaluation** of the Supervisory Board is performed once every three years by an external advisor; this was the case in 2019. In the other two years, including 2020, the evaluation of the Supervisory Board is performed by means of a self-assessment consisting of a written survey, followed by in-depth, one-on-one interviews between the Chair and individual Supervisory Board members.

The overall **feedback from the evaluation** in 2020 was again positive. All topics (team composition, meetings, committees, people processes, agenda definition, etc.) received very high scores. Supervisory Board members appreciate the atmosphere in the Board, and the quality of discussions, which include constructive challenging where appropriate. All members feel heard, valued and trusted, and appreciate the distinctive strengths all the different members bring to the table. In 2020, the informal moments of personal interaction between Board members and with Managing Board and Executive Committee members, as well as other employees, were of course missed. In terms of follow-up and improvements, the Supervisory Board asked to spend even more time on innovation going forward and to increase the time allocated to post-investment reviews, analyzing the performance of all investments made as well as those it was decided not to make.

While the **Managing Board's performance** is (indirectly) also assessed as part of the evaluation, this happens throughout the year as part of the discussions on succession planning in the Nomination Committee. This applies particularly when the performance appraisals of Managing Board members are discussed, as well as their performance versus their individual targets in the Remuneration Committee. The Nomination and Remuneration Committees report back on these discussions to the Supervisory Board.

Committees

The Supervisory Board has **four committees** to cover key areas in greater detail: Nomination, Remuneration, Sustainability and Audit. These are described in more detail below.

Board nominations

The **Nomination Committee** comprises Rob Routs (Chair), Eileen Kennedy, Pauline van der Meer Mohr and Thomas Leysen. Geraldine Matchett, Dimitri de Vreeze and Cristina Monteiro, Executive Vice President Group People & Organization, were also involved in this Committee's discussions. The Committee met five times in 2020. The recommendations and minutes of all Nomination Committee meetings were shared with the entire Supervisory Board. This feedback included advice and recommendations regarding topics to be approved by the full Supervisory Board. The Supervisory Board also has access to all the meeting materials posted for the Nomination Committee meetings.

In 2020, discussions in this committee focused on **succession planning** for the Managing Board, the Executive Committee, and the Supervisory Board. With respect to the Executive Committee, the discussions focused on the portfolio changes for Philip Eykerman, who took on the responsibility for the Human Nutrition and Health business in the course of the year, and the succession of the Executive Vice President Group People & Organization.

As in other years, the Supervisory Board established that the composition of the Managing Board is and will stay diverse in nationality, gender, background, expertise and experience, and that it provides a good foundation to support all clusters and business groups in achieving their targets and thus contributing to the company strategy. For detailed background information on the Managing Board members, see the company website under Corporate Governance and in the Managing Board section of this Report.

Taking into account the Supervisory Board profile as laid down in the Supervisory Board regulations, the Nomination Committee continued discussions on the overall composition of the Supervisory Board and discussed **succession planning** for the Supervisory Board. At the 2020 Annual General Meeting of Shareholders, Thomas Leysen was appointed to the Supervisory Board. Furthermore, Rob Routs, Eileen Kennedy and Pradeep Pant were reappointed. In view of Pauline van der Meer Mohr stepping down at the 2021 Annual General Meeting of Shareholders, the Nomination Committee looked for a successor with a similar profile. The Nomination Committee eventually proposed a new candidate for appointment to the Supervisory Board, Carla Mahieu, whose profile is closely comparable with that of Pauline van der Meer Mohr.

Board remuneration

The **Remuneration Committee** had five meetings in 2020. Pauline van der Meer Mohr (Chair), Rob Routs, John Ramsay and Frits van Paasschen are members of this committee. Recommendations and minutes of the Remuneration Committee meetings were shared with the full Supervisory Board and were used to determine the final remuneration of the members of the Managing Board. The Supervisory Board also has access to all the meeting materials provided for the Remuneration Committee meetings. For more information on the remuneration policy, see the company website. For the implementation of that policy in 2020, see the Remuneration report 2020.

Discussions focused on the **performance** and the related **remuneration** of the members of the Managing Board, in respect of both company and individual performance. In 2020, time was spent on remuneration topics related to the Short-Term Incentive (STI) and Long-Term Incentive (LTI) scorecard. Attention was given both to the setting of targets for 2020 and to first estimates of performance against those targets, gender pay gap, equal pay, and next steps to be taken in the Remuneration Report in terms of disclosures. The performance and remuneration of the Executive Committee members were also shared with the Remuneration Committee. Geraldine Matchett, Dimitri de Vreeze and Cristina Monteiro were also partly involved in these discussions.

Sustainability

The **Sustainability Committee** prepares the Supervisory Board's discussions on sustainability topics. The Sustainability Committee met three times in 2020. This Committee comprises Eileen Kennedy (Chair), Pradeep Pant, and Erica Mann. The Chair of the Supervisory Board has a standing invitation and participated in all meetings. The recommendations and minutes of these meetings were shared and discussed with the entire Supervisory Board during its meetings with the Managing Board. The Supervisory Board has access to all the meeting materials provided for the Sustainability Committee meetings. The feedback from the Committee to the full Board included advice and recommendations regarding topics to be approved by the Supervisory Board, in particular the sustainability reporting in this Report. Taking into consideration the draft Assurance report of the independent auditor on the Sustainability Information by KPMG of this Report, the full Supervisory Board approved the reporting against these topics on 1 March 2021. The assurance report was finalized by KPMG after the approval of the Supervisory Board. The Sustainability Information complies with the Standards of the Global Reporting Initiative and our internal reporting criteria, which are included in this Report, and is also aligned with the international Integrated Reporting Council <IR> Framework where possible.

During the year, recurring topics were the **company's performance** against its People and Planet aspirations, with a focus on safety, emissions reduction, Brighter Living Solutions, and Inclusion & Diversity. Through these discussions, the Sustainability Committee followed up on the progress made with the implementation of the sustainability and safety aspirations set as part of the company's strategy. Deep dives were made into several topics. One was our greenhouse gas roadmap, both scope 1 & 2 as well as scope 3 emissions. In terms of Inclusion & Diversity, the Committee discussed a new approach and the company's long-term strategy. In light of our strategy the Committee also made a deep dive into alternative proteins with a team from DSM Food Specialties that is also involved in Olatein, our joint venture with Avril for canola-based protein.

Financials and auditing

The activities of the Supervisory Board in the area of financials and auditing are prepared by the **Audit Committee**. The Audit Committee met six times in 2020. John Ramsay (Chair), Pradeep Pant, Frits van Paasschen, Erica Mann and Thomas Leysen are members of the Audit Committee. All Supervisory Board members have a standing invitation to attend Audit Committee meetings. In 2020, most of them used this standing invitation for the two conference calls in which the financial developments and interim results for the first and third quarter were discussed, as these are not followed by a full Supervisory Board meeting. The Chair of the Supervisory Board participated in all meetings and calls. The highlights and the minutes of all Audit Committee meetings were shared with the full Supervisory Board. This feedback included advice and recommendations regarding topics to be approved by the full Supervisory Board. In 2020, these included the approval of the 2021 COA Audit plan, the proposed reappointment of the external auditor (approved by the 2020 Annual General Meeting of Shareholders), and the proposed funding of the acquisition of the Erber Group. All Supervisory Board members have access to all the meeting materials posted for the Audit Committee meetings.

Our **external auditor KPMG**, Geraldine Matchett in her capacity as CFO, and the Senior Vice President Group Controller participated in all the meetings of the Audit Committee. So did Dimitri de Vreeze in his capacity as Co-CEO, along with the managers responsible for internal audit, risk management and compliance, with the exception of the two meetings in which the financial developments and interim results for the first and third quarter were discussed. After every meeting, with the exception of the two conference calls in which the financial developments and interim results for the first and third quarter are discussed, the Audit Committee meets with the external auditor without the Managing Board being present.

The Committee had in-depth discussions on the **company's financials**; the Finance plan; the Capital Expenditure plan; dividend proposals; the financial statements and accounting policy changes. The discussions on internal risk management and control systems included the internal control framework, compliance with recommendations and observations made by internal and external auditors, and the role and functioning of COA. They also included the endorsement of COA's proposed audit plan for 2021, which was subsequently approved by the full Board. As part of the Corporate Risk Assessment, the company's main risks and their mitigation were discussed. The Committee also discussed and evaluated cases submitted under the company whistleblower policy (DSM Alert), fraud cases, on-going litigation, and privacy compliance. Another recurring topic is our cybersecurity resilience, about which the Audit Committee is informed through a dashboard, as well as information on running cybersecurity programs and cybersecurity governance. A deep dive on Group Business Services and IT strategy were specific topics dealt with in 2020.

Discussions were held with KPMG about the audit plan, management letter, audit report and financial statements for 2020, including managerial judgments and key accounting estimates. In its management letter, KPMG shared the outcome of its evaluation of the company's procedures and system of internal controls to the extent necessary within the scope of the audit of the financial statements. The observations of KPMG were presented along the pillars that support our in-control statement and focused specifically on the Internal Control Framework pillar as this is also where DSM had set out on an improvement journey several years ago (for the Statements of the Managing Board, and for a visualization of our control environment see Corporate governance). Given the increased maturity level of our internal Control Framework we have set further ambitions for the coming years. In its management letter KPMG identified several opportunities in making our framework more effective and efficient.

Finally, in 2020, the Audit Committee formally evaluated the **external auditor**, and discussed the reappointment of KPMG. The proposal to reappoint KPMG is based on the Audit Committee's own assessment of KPMG, on discussions with KPMG in the absence of management, and on the outcome of an evaluation among DSM executives. The Audit Committee conducts a more in-depth evaluation once every three years; in the two other years, a lighter evaluation is performed. For 2020, a more in-depth evaluation was performed, also in view of the change in lead audit partner for that reporting year. The auditor evaluations in prior years were positive and the outcome of the 2020 evaluation was positive as well.

Financial statements 2020

The Report by the Managing Board and the financial statements for 2020 were submitted by the Managing Board to the Supervisory Board, in accordance with the provisions of Article 30 of the Articles of Association, and were subsequently **approved** by the Supervisory Board on 1 March 2021. The financial statements were audited by KPMG, who issued an **unqualified opinion** (see the Independent auditor's report). The Supervisory Board established that the external auditor was independent of DSM.

The Supervisory Board will submit the 2020 financial statements to the **2021 Annual General Meeting** of Shareholders, and will propose that the shareholders adopt them and release the Managing Board from all liability in respect of its managerial activities and release the Supervisory Board from all liability in respect of its supervision of the Managing Board. The profit appropriation as proposed by the Managing Board and approved by the Supervisory Board is presented in the Profit section of this Report.

Remuneration report 2020

Introduction by the Chair of the Remuneration Committee

On 15 February 2020, our Co-CEOs took over the leadership of the company and were almost immediately confronted with one of the biggest challenges in recent history: the COVID-19 pandemic. Market conditions changed considerably and business priorities had to be adapted to reflect the new situation. The immediate priority was to safeguard the safety, health and well-being of our employees at all times and to secure, wherever possible, deliveries to our customers by keeping our facilities up and running.

Our businesses were impacted by the pandemic, with Nutrition overall performing well in this environment and Materials being significantly affected. Actions were taken in a timely manner to protect profitability and cash flow generation while we continued to execute on our long-term strategy. During the year, we completed two acquisitions within Nutrition (Glycom and the Erber Group businesses), and announced the divestment of our Resins & Functional Materials businesses to Covestro AG. During the same period, we also completed two global programs aimed at streamlining our operations and at generating stronger growth. In the second half of the year, we saw Nutrition continuing to perform well, although impacted somewhat by foreign exchange headwinds, and we saw a more positive pick-up of momentum for Materials as of September.

DSM is recognized as a purpose-led company, creating long-term value for all its stakeholders and society at large across the three dimensions of People, Planet and Profit. Our scientific expertise and innovation capabilities help us to find answers to some of the world's biggest challenges and to grow our business at the same time. In view of this and related to the COVID-19 pandemic, DSM has focused on the safety, health and well-being of our workforce whilst safeguarding business continuity.

Throughout the pandemic, DSM chose not to make use of government support, acknowledging that the company was not in need of such support. In addition, we supported various initiatives all over the globe to fight the pandemic, for example, by providing manufacturing capacity to produce disinfectants for use in hospitals and expediting the establishment of a joint venture to produce much-needed face masks.

In line with the company’s long-standing policy to deliver a stable, preferably rising, dividend, DSM will propose at the 2021 AGM a stable dividend following the step-up in the dividend paid in 2020, and despite the impact of the pandemic on the financial performance of the Materials businesses.

Besides various initiatives taken to safeguard our employees’ safety, health and well-being, measures were also taken to support employees who faced additional costs because of a lockdown (for example, commuting costs in locations where public transport was suspended during lockdown). All employees and their families were offered the much-needed vitamins helping to boost their immune systems.

From a reward perspective, it is to be noted that agreed terms and conditions for our employees were maintained in 2020. DSM processed the regular annual cycles, meaning that agreed CLA increases as well as individual merit increases based on individual performance were processed without any reservations, while incentive schemes were delivered in accordance with the achievement of predefined targets established early in 2020, before the start of the COVID-19 pandemic. The number of lay-offs directly related to the COVID-19 pandemic were very limited.

DSM’s Remuneration policy for the Managing Board is fully aligned with the deployment of the company’s strategic objectives. The design of our short- and long-term incentive plans emphasizes the importance of building long-term growth opportunities in the domains of Health, Nutrition and Sustainable Living. Targets on energy efficiency and greenhouse gas emission reduction, building our portfolio of Brighter Living Solutions, underpin our commitment to sustainability, while ensuring financial performance in line with our key strategic goals (Adjusted EBITDA and Adjusted Net Operating Free Cash Flow) and safeguarding employee safety and engagement.

In addition DSM continued to deliver improvements in customer-centricity, large innovation projects, cost control and operational excellence, resulting in sound results, reflected in the remuneration as presented in this report.

The Supervisory Board has taken a balanced approach with regard to the remuneration of the Managing Board. In 2020, due to the high uncertainty prevalent at the start of the year, no base salary increase was applied for the Managing Board and the Executive Committee. In this respect, it should also be noted that our Co-CEOs' remuneration was positioned below the level of the previous CEO. After careful consideration, the goals and targets set for the 2020 incentive plans that had been set prior the global pandemic were not adjusted in view of the pandemic's adverse effects. Focus was kept on finding ways to overcome these challenges and continue to progress with the deployment of our purpose-led, performance-driven strategy.

This Remuneration report provides a summary of the remuneration policy for the Managing Board Koninklijke DSM N.V. and the Supervisory Board Koninklijke DSM N.V. respectively, as well as an overview of the remuneration of the members of the Managing Board and the Supervisory Board in the financial year 2020. The full, legally superseding remuneration policy as approved by the AGM is published on the company website. This report is prepared in accordance with the relevant parts of Section 135 Book 2 of the Dutch Civil Code.

Pauline van der Meer Mohr
Chair Remuneration Committee

Remuneration of the Managing Board Koninklijke DSM N.V. 2020

Summary of the remuneration policy Managing Board Koninklijke DSM N.V.

The remuneration policy of the Managing Board Koninklijke DSM N.V. is designed to attract and retain qualified leaders who can shape our purpose-led, performance-driven strategy, engage our people and other stakeholders, and ultimately achieve results – putting customers first and delivering on our promises. The policy provides clear focus: improving company performance and enhancing purpose-led, long-term value creation across multiple dimensions (People: individual and societal, Planet: ecological and sustainability and Profit: economic and financial) while recognizing the interests of all our stakeholders (especially our customers, employees, shareholders, as well as society at large).

Remuneration is linked to company and individual performance. Based on the company's short- and long-term strategic objectives as well as our business drivers, results are measured on the basis of specified targets, balancing short- and long-term outcomes, serving the interests of all our stakeholders. In order to be competitive and to ensure alignment internally, Total Direct Remuneration offered by DSM approaches – from below – the median of a predefined peer group. Reward levels are benchmarked against the Dutch/European (no US companies) labor market peer group, while the design of various reward components is reviewed against the broader perspective of best market practices.

Labor market peer group

European industry peers:	Dutch AEX-listed peers:
- Clariant	- Ahold Delhaize
- Covestro	- AkzoNobel
- Evonik Industries	- ASML
- Givaudan	- Heineken
- Johnson Matthey	- KPN
- LANXESS	- Philips
- Lonza	- Randstad
- Solvay	- Wolters Kluwer

The full version of the remuneration policy of the Managing Board Koninklijke DSM N.V., as approved by the 2019 AGM, is available on the company website. The following table specifies the elements of the remuneration policy, describing their purpose, design and link to our company strategy as well as their potential value.

Purpose	Design and link to strategy	Value
Goal The goal of DSM's remuneration policy for the Managing Board Koninklijke DSM N.V. is to offer an on-target total remuneration package approaching – from below – the median of the labor market peer group.		
Total Direct Compensation Is the basis for benchmark efforts, i.e., the reference to the labor market peer group.	Includes base salary and variable income. Variable income concerns the performance-related Short-Term Incentive (STI) and the STI deferral & matching plan, as well as the Long-Term Incentive plan (LTI). In addition, Managing Board members are entitled to certain benefits.	Value of each respective item is included hereafter.
Base salary Basic pay for doing the job.	Aims to provide a fair and competitive basis for the total pay level in order to attract and retain qualified leaders. Annual review based on the market movement for executives based in the Netherlands and peer companies. In-depth benchmark every three years.	Base salaries at DSM approach – from below – the median of the labor market peer group.
Short-Term Incentive (STI) Incentive aligning short-term business objectives and business drivers with strategic company objectives. Driving pay for performance.	The Supervisory Board sets goals and targets for the respective performance year and determines the extent to which these have been achieved. By ensuring that strategic objectives are properly reflected in stretching yet achievable targets, the realization of strategic business objectives is addressed. Half of the at-target STI is linked to financial objectives; the other half is tied to sustainability aspirations and individual goals.	On-target performance: 50% of annual base salary. Maximum opportunity capped at 100%. Threshold: no STI pay-out in case the target for Adjusted EBITDA is not achieved to the level of at least 75%.
STI deferral & matching Ensures that longer-term considerations are sufficiently taken into account in pursuing short-term objectives.	Conversion of STI into shares, with a 1:1 company match delivered in Performance Share Units (PSUs). The PSUs vest upon the realization of predefined goals (same as LTI program), observing a three-year vesting period. By linking the vesting of the PSUs to the targets of the LTI program, it is ensured that decisions regarding short-term results are aligned with long-term value creation.	Mandatory conversion: 25% of STI achieved; voluntary conversion: 0–25%, with incremental steps of 5%. Maximum number of matching PSUs to vest is equal to number of PSUs granted.
Long-Term Incentive (LTI) Focus on long-term value creation. Designed to ensure that decisions made are in the long-term interests of all stakeholders and to ensure that interests of the Managing Board and the company stakeholders are aligned.	PSUs are awarded every year, to be converted into shares upon realization of predefined targets, observing a three-year vesting period. A five-year holding period (starting at grant date) applies. Performance goals are based on company strategy, driving long-term value creation. Half of the target LTI is linked to financial goals; the other half is linked to sustainability aspirations. Performance is measured over three financial years, starting with the year of grant.	Based on face value, the at-target grant equals 100% of base salary; the number of PSUs granted equals the maximum to vest (i.e., 150% of base salary). Therefore, the maximum vesting opportunity is 100% of the number of PSUs granted.

Purpose	Design and link to strategy	Value
Shareholding requirement Aligning reward to the interests of stakeholders and emphasizing confidence in performance and strategy.	Managing Board members are expected to build up a shareholding in the company; the minimum shareholding requirement must be accrued in four years. Considered are shares privately purchased and vested shares granted under DSM share-based compensation plans.	The minimum share-holding requirement is 300% of annual base salary for both Co-CEOs and 200% for other Managing Board members.
Pension and other benefits Post-retirement remuneration contributing to the competitiveness of the overall package. Together with other benefits, creates alignment with market practice.	Mandatory enrollment in basic pension plan as applicable to all DSM employees in the Netherlands (Collective Defined Contribution). In addition, a company-paid contribution to allow participation in the so-called Net Pension Plan under conditions as applicable to Netherlands-based employees (Individual Defined Contribution). Other benefits include sick pay (aligned with Netherlands-based employees) and a company car.	Pension scheme aligned with plans in place for employees in the Netherlands. Other benefits aligned with market practice.
Goal-setting Goal-setting is key to driving pay for performance aligned with Company strategy and ensuring that decisions made and results delivered are aligned with the interests of DSM's stakeholders.	The Supervisory Board sets goals, their respective weight and targets (i.e., metric) for the respective performance year under the STI and LTI scheme, considering: - Company strategy - Focus on long-term value creation - Historical performance, business outlook, and circumstances and priorities - Stakeholder expectations - At target level, there is a 50:50 split between financial goals and sustainability/individual goals.	Goals must be stretching yet achievable.

The company website contains an overview of the main terms and conditions of employment of both Co-CEOs.

Total remuneration of the Managing Board 2020

Introduction

Actual remuneration for 2020 is fully aligned with the remuneration policy, which complies with EU requirements and Dutch legislation.

Feike Sijbesma handed over his responsibilities as CEO and Chairman of the Managing Board / Executive Committee Koninklijke DSM N.V. and as member of the Managing Board, to his successors, Geraldine Matchett and Dimitri de Vreeze, on 15 February 2020. In view of a proper handover to the Co-CEOs appointed with effect from that date, and also in order to finish certain projects, Feike Sijbesma remained employed until 1 May 2020, observing the terms and conditions of the employment agreement. As a result of this leadership transition, the Managing Board of DSM went down from three to two members, as both Geraldine Matchett and Dimitri de Vreeze have been members of the Managing Board in prior years.

This Remuneration report provides an overview of the 2020 remuneration of the Co-CEOs, Geraldine Matchett and Dimitri de Vreeze. Note that their remuneration delivered prior to 15 February 2020 is based on the terms and conditions applicable to Managing Board members. Feike Sijbesma's remuneration in 2020 is included in a separate paragraph.

Base salary
Upon their appointment, the annual base salary of the Co-CEOs was set at €925,000, below the base salary of their predecessor of €960,000. While the policy allows an annual review of base salaries, the Supervisory Board refrained from an adjustment in 2020 due to the uncertainties associated with the development of the COVID-19 pandemic at that time. Note that for our global workforce, salary adjustments have been implemented, following our policies and practices.

Fixed annual base salary

in €	15 February 2020	1 July 2019
Geraldine Matchett	925,000	637,500
Dimitri de Vreeze	925,000	637,500

Short-Term Incentive (STI)
This report includes the STI achievement for 2020, payable in April 2021, and based on base salary paid in 2020. Targets were set ahead of the STI cycle, in accordance with the remuneration policy and budgeted results for the current year, ensuring that achievement would be challenging. A scenario analysis was conducted prior to final approval of the targets by the Supervisory Board. The targets for the 2020 scheme were set prior the global pandemic and have not been adjusted in view of the pandemic’s adverse effects. Focus was kept on finding ways to overcome these challenges and to continue the pursuit of DSM’s strategic objectives.

Definitions of goals set for 2020 STI (total at-target weight, 50% of annual base salary):

- Adjusted EBITDA (weighting 12.5%): sum of the operating profit plus depreciation and amortization, adjusted for material items of profit/loss following acquisitions/divestments, restructurings and other circumstances deemed necessary
- Adjusted net operating free cash flow (10%): cash flow from operating activities, corrected for the cash flow of the APM adjustments, minus the cash flow of Capital expenditures and drawing rights
- Net sales growth (2.5%): net organic sales growth
- Brighter Living Solutions (5%): products and services that, considering the whole product life cycle, offer an environmental benefit (ECO+) and/or social benefit (People+) compared to mainstream reference solutions. DSM uses a standard approach to measure the impact of portfolio changes (for ECO+ the Eco Life Cycle Assessment, using the WBCSD Chemical sector approach, whereas People+ qualifications are made using DSM's People LCA method)
- Safety (5%): based on Frequency Index for recordable injuries
- Employee Engagement (5%): based on the High-Performance Norm in industry
- Individual goals (10%): in 2020 the Managing Board / Executive Committee shared two team targets

The company does not disclose the exact actual targets, as these qualify as commercially sensitive information, though the targets set are fully in line with the published strategic, financial and sustainability goals of the company. The overall average achievement of the Managing Board members for performance year 2020 amounts to 61.3% (2019: 54%) of annual base salary. KPMG performs procedures over the realization of financial targets and the validation process of non-financial targets.

Within DSM’s STI scheme, pay-out brackets are defined, taking into account the nature of the goal. Depending on the goal, the number of brackets varies from 5 to 9. The lowest bracket represents a target realization of 0%, the highest of 200% of the at target weighting of the respective goal. Goals, targets and pay-out schedules have been defined at the beginning of the year and have not been adjusted in view of the COVID-19 pandemic.

The following table provides an overview of the realization of the 2020 STI targets.

	Weight in % of base salary	To be achieved in % of target defined			Performance bracket achieved	Pay-out in % of base salary
		Minimum	Target	Maximum		
Adjusted EBITDA	12.5%	96.0%	100.0%	103.0%	0.0%	0.0%
Adjusted net operating free cash flow	10.0%	87.5%	100.0%	109.0%	200.0%	20.0%
Net sales growth	2.5%	50.0%	100.0%	150.0%	0.0%	0.0%
Brighter Living Solutions	5.0%	92.0%	100.0%	110.0%	100.0%	5.0%
Safety	5.0%	100.0%	100.0%	110.0%	200.0%	10.0%
Employee Engagement	5.0%	94.0%	100.0%	106.0%	125.0%	6.3%
Individual goals	10.0%	0.0%	100.0%	200.0%	200.0%	20.0%

DSM's businesses were impacted by the circumstances that characterized 2020. Overall, Nutrition performed well, whereas Materials was to a considerable degree impacted by the pandemic, though picking up momentum as of September. The resulting Adjusted EBITDA was below the threshold (defined as 96% of targeted Adjusted EBITDA) and therefore the target does not deliver a pay-out. This is also true for the target regarding the Net sales growth. A strong focus on cash management resulted in a maximum achievement of the Adjusted net operating free cash flow target. The Brighter Living Solutions target was achieved. DSM demonstrated a very strong Safety performance resulting in maximum achievement of the respective target. Employee Engagement went up, resulting in an overachievement of the target, a confirmation of our focus on safety, health and well-being of our employees.

The combined realization resulted in a 2020 STI pay-out as included in the overview below.

Short-Term Incentive

in €	**2020**	2019
Geraldine Matchett	545,249	326,970
Dimitri de Vreeze	545,249	342,720

Short-Term Incentive deferral & matching (STI)

In addition to the mandatory deferral (25% of STI achieved), the Managing Board members decided to convert an additional 25% (maximum possible) of the STI paid in 2020 into shares. This means that the Co-CEOs converted 50% of their STI into this long-term incentive, demonstrating their trust in the company strategy and their focus on the long term. A 1:1 grant of PSUs was implemented, as included in the following table. The 2020 grant was based on the STI achieved over 2019 and therefore on the 2019 terms and conditions as member of the Managing Board.

Grant of PSUs under the short-term deferral & matching scheme

Number of PSUs	2020 grant (vesting 2023)	2019 grant (vesting 2022)
Geraldine Matchett	1,558	2,552
Dimitri de Vreeze	1,632	2,474

Long-Term Incentive (LTI)

2020 and 2021 grant

In 2020, 12,500 Performance Shares Units (PSUs) were granted to each of the Co-CEOs (2019: 12,500). The grant is based on the annual base salary applicable on the grant date and the average share price in January of the year of grant. The 2021 grant equals 10,000 PSUs for each Co-CEO. Any grant equals the maximum number of PSUs that may vest. The 2020 and 2021 grants are based on the terms and conditions as Co-CEO, whereas the 2019 grant was based on the 2019 remuneration as member of the Managing Board. The fact that nevertheless the number of PSUs granted in 2020 and 2021 is equal or lower compared to the 2019 grant is driven by the share price appreciation.

Goal-setting and vesting scheme

Targets were set ahead of the LTI cycle, in accordance with the remuneration policy, ensuring that achievement of threshold, target or maximum vesting is challenging. A scenario analysis was conducted.

Definition of goals set for LTI grants:

- Total Shareholder Return — TSR (weighting 25%): sum of capital gain and dividends paid, representing the total return to shareholders; the relative ranking (within the peer group) reflects the market perception of overall performance relative to our peers
- Return on Capital Employed — ROCE (25%): operating profit as percentage of weighted average capital employed
- Energy Efficiency Improvement — EEI (25%): the reduction of the amount of energy used per unit product (known as energy efficiency) on a three-year rolling average basis
- Greenhouse Gas Emissions — GHGE (25%): as of the 2019 grant: absolute reduction of greenhouse gas emissions in kilotons over performance; the target up to and including the 2018 grant, is based on the reduction of greenhouse gas emissions per unit of product

Vesting 2017 grant

The performance period of the PSUs granted in 2017 was completed by year-end 2019: the actual vesting was on 31 March 2020. This concerns the PSUs granted under the Long-Term Incentive plan as well as the PSUs granted under the STI deferral & matching plan. The following vesting schemes applied.

	TSR[1]	ROCE		EEI		GHGE Efficiency improvement	
Rank	% of PSUs granted that vest[2]	ROCE ultimo performance period	% of PSUs granted that vest[2]	EEI% (over a 3-year period)	% of PSUs granted that vest[2]	GHGE Efficiency improvement % (over a 3-year period)	% of PSUs granted that vest[2]
1	100	≥14.0	100	≥4.00	100	≥8.75	100
2	97	13.5 - <14.0	83	3.25 - <4.00	83	8.25 - <8.75	83
3	93	12.5 - <13.5	67	2.75 - <3.25	67	7.75 - <8.25	67
4	87	12.0 - <12.5	50	2.50 - <2.75	50	7.25 - <7.75	50
5	80	11.5 - <12.0	33	2.25 - <2.50	33	6.75 - <7.25	33
6	73	<11.5	-	2.00 - <2.25	17	6.25 - <6.75	17
7	67			<2.00	-	<6.25	-
8	50						
9	33						
10–15	-						

1 Peer group 2017 grant includes AkzoNobel, Arkema, BASF, Chr. Hanssen, Clariant, Croda International, DuPont/IFF, Evonik, Givaudan, Kerry, LANXESS, Lonza, Novozymes, Solvay.

2 Any PSU grant concerns the maximum number that may vest, 100% vesting included in this table means that the target has been achieve to the maximum level.

A strong share price appreciation resulted in the second rank on the relative Total Shareholder Return target. The ROCE was within the bracket set around the target and therefore resulted in 67% of the grant related to this target to vest (the grant consists of the maximum number that may vest). Both sustainability goals have been outperformed, resulting in a maximum contribution to the overall vesting result, demonstrating DSM's commitment to Sustainability as a business driver. The table hereafter provides an overview of the number of PSUs granted in 2017 that vested (i.e. converted to unconditional shares) in 2020. In total 90.8% of the PSUs granted in 2017 did vest (in 2019 100% of the PSU's granted in 2016 did vest). Since the number of PSUs granted equals the maximum number to vest, the vesting equals 136.25% of the targeted grant.

PSUs granted in 2017 vested in 2020

Numbers of PSUs vested[1]	LTI	STI deferral & matching scheme
Geraldine Matchett	14,074	3,592
Dimitri de Vreeze	14,074	3,592

1 At vesting, a sell-to-cover applied: out of the vested shares, a number of shares are sold at vesting date to cover taxes due.

Pension and other benefits

Participation in the basic pension plan provided by the Dutch pension fund (*Stichting Pensioenfonds DSM Nederland* – PDN) to all DSM employees in the Netherlands is mandatory for the Managing Board. Regarding pensionable salary not covered by the basic pension plan, a company-paid pension contribution as determined by the Supervisory Board applies. This contribution can be used by Managing Board members to participate in the so-called Net Pension Plan under conditions applicable to all participating DSM employees. The company provides accident insurance cover, a company car, and a fixed representation allowance in line with market practice.

Total remuneration

Actual remuneration for 2020 is fully aligned with the remuneration policy. An in-depth benchmark conducted in preparation of the latest review of the Remuneration Policy Managing Board Koninklijke DSM N.V. demonstrated that DSM lagged behind the median of the labor market peer group, also considering the pay-out scenarios of the incentive schemes. A further, more recent review, shows that the current total remuneration of DSM's Co-CEOs is the lowest within our (Dutch/European) peer group. The difference would become even bigger if the benchmark comparison were to be made with a global peer group (i.e., including US-based peers).

The following table provides an overview of the total remuneration expense for the company in relation to the Managing Board in accordance with IFRS rules (these costs are not necessarily equal to compensation paid or the cash out for DSM).

Total remuneration expense for the Managing Board in accordance with IFRS definitions

x € thousand	Fixed		Variable compensation				Fixed		Fixed		Total		Proportion fixed / variable remuneration	
	Base salary / fees		Short-term incentive		Share-based compensation[1]		Pension expenditure		Other items[2]					
	2020	2019	**2020[3]**	2019[3]	**2020**	2019	**2020**	2019	**2020**	2019	**2020**	2019	**2020**	2019
Geraldine Matchett	889	630	545	327	987	1,030	148	109	26	86	**2,595**	2,182	41:59	38:62
Dimitri de Vreeze	889	630	545	343	986	1,029	172	126	47	47	**2,639**	2,175	42:58	37:63
Total	1,778	1,260	1,090	670	1,973	2,059	320	235	73	133	**5,234**	4,357	41:59	37:63

1 Share-based compensation represents the expense in respect of DSM of Performance Share Units (PSUs) awarded. These costs are recognized over the vesting period and therefore cover several years. Against the opening price at vesting date (i.e., 31 March 2020), the 2020 vesting (the Co-CEOs together) represented the value of €3.7 million, subject to a sell to cover.

2 Fringe benefits, such as company car and allowances.

3 Share-based compensation for 2020 concerns the grants in 2017 (partial), 2018, 2019 and 2020 (partial), share-based compensation for 2019 concerns the grants in 2016 (partial), 2017, 2018 and 2019 (partial).

Related to their appointment as Co-CEO, total remuneration expenses for each of the Co-CEOs did go up, since base salary was adjusted as per 15 February 2020. As of this date, the adjusted base salary was also considered for the Short-Term Incentive over 2020, as well as the employer contribution to the pension plan. As an overall result in the proportion fixed versus variable, the fixed part of the remuneration did go up slightly.

Remuneration former Managing Board member

As part of a planned succession process, Feike Sijbesma ceased to be CEO and member of the Managing Board with effect from 15 February 2020. In order to ensure a proper handover, he remained employed until 1 May 2020, honoring the agreed terms and conditions of employment until this date. The terms and conditions of Feike Sijbesma leaving are in line with DSM policies and practices. Feike Sijbesma did not receive any severance payment and/or other compensation related to his departure. Details reported here for Feike Sijbesma concern the full calendar year 2020.

From 1 January until 1 May 2020, Feike Sijbesma received the agreed base salary of €320,000 (2019: €951,000), while the expenditures for his participation in the pension scheme and other items amount to €83,000 and €103,000 respectively (for 2019, the respective amounts were €234,000 and €59,000). Over 2020, Feike Sijbesma did not receive a Short-Term Incentive (the STI achievement over 2019 amounted to €541,000), nor was he eligible for a Long-Term Incentive grant.

The 29,333 Performance Units (PSUs) granted in 2017 and outstanding at year-end 2019 (share price at grant: €63.65) vested on 31 March 2020, observing the realization of predefined goals. Upon vesting, this resulted in the delivery of 27,171 shares (2,162 were forfeited). The 2020 remuneration expenses related to the vesting of and to the outstanding performance share units during the period of employment in 2020, amounted to €816,516 (compared to €1.563 million in 2019). Considering the plan rules and Feike Sijbesma's (extraordinary) contributions, the Supervisory Board has determined – in line with DSM policies – that PSUs granted in 2018 and 2019 to Feike Sijbesma under the 'Royal DSM N.V. Restricted Share Plan, regulations applicable to the Managing Board', as well as the matching PSUs related to the deferral of STI concerning the performance years 2018 and beyond, will vest in 2020 due to Feike Sijbesma's departure. This involves the following number of vested PSUs: (i) for 2018, 21,264 (share price at grant date: €80.04); (ii) for 2019, 22,372 (€97.74); (iii) for 2020, 2,578 (€105.00). In total this amounts to 46,214 shares, resulting in a remuneration expense of €2.911 million, covering the vesting of PSUs granted (in 2018 and beyond) during active employment to vest in 2020. The total 2020 remuneration expense related to vesting of equity-based compensation amounts to €3.727 million. Feike Sijbesma will remain tied to post-employment holding periods of these shares of 2 – 5 years.

The total remuneration expense concerning Feike Sijbesma over the term of employment in 2020 amounted to €1.322 million (compared to €3.348 million in 2019). Considering the term of employment in 2020 and the vesting in 2020 of PSUs already granted during active employment (i.e. from 2018 and beyond), the total Remuneration expenses over 2020 amount to €4.233 million (compared to €3.348 million in 2019).

The vesting of long-term incentives granted during employment in combination with Feike Sijbesma leaving DSM resulted in a tax expense for the company based on Article 32bb of the Dutch Wage Tax Act (1964) in the amount of €2.629 million. This is not a renumeration component paid to Feike Sijbesma but a tax levy in line with Dutch tax legislation. It is emphasized that this expense is purely based on the observance of previously agreed terms and conditions of employment in line with the remuneration policy as approved by the AGM and are not related to any severance incentives or payments related to the fact that Feike Sijbesma ceased to be a member of the Managing Board or to the termination of his employment[33]. This is a tax expense to the company regarding remuneration items already granted in the past and now vesting and not a remuneration component paid to Feike Sijbesma.

Equity-based compensation

Main characteristics

The main conditions of the share-based compensation are:

-	Vehicle	Performance Share Units (PSUs), converted to shares at vesting
-	Grant date	Last trading day in March
-	Vesting period	Three years, starting at grant date
-	Vesting conditions	Realization predefined performance goals and in service at vesting date
-	Performance period	Three performance years, starting 1 January year of grant
-	Holding period	Five years, starting at grant date
-	Lock-up period	Blocking period chosen by incumbent, may result in tax discount

1 Including the tax expense for DSM, total 2020 expenses charged in accordance with the Dutch Civil Code to the Company's Income statement, amounted to €6.862 million, these expenses are not equal to compensation paid or the cash out for DSM.

Outstanding Performance Share Units

The table below provides an overview of outstanding PSUs (granted under the LTI and STI deferral & matching scheme respectively).

Outstanding PSUs

	Year of issue	Outstanding at 31 Dec. 2019	In 2020 Granted	In 2020 Vested	In 2020 Forfeited / expired	Outstanding at 31 Dec. 2020	Share price at date of grant (€)
Geraldine Matchett	2017	19,092	-	(17,666)	(1,426)	-	63.65
	2018	13,800	-	-	-	13,800	80.04
	2019	15,052	-	-	-	15,052	97.74
	2020	-	14,058	-	-	14,058	105.00
	Total	**47,944**	**14,058**	**(17,666)**	**(1,426)**	**42,910**	
			Retained shares originated from PSUs			44,990	
Dimitri de Vreeze	2017	19,092	-	(17,666)	(1,426)	-	63.65
	2018	13,800	-	-	-	13,800	80.04
	2019	14,974	-	-	-	14,974	97.74
	2020	-	14,132	-	-	14,132	105.00
	Total	**47,866**	**14,132**	**(17,666)**	**(1,426)**	**42,906**	
			Retained shares originated from PSUs			36,927	

The table below provides an overview of stock options held by Dimitri de Vreeze (these stock options were granted prior to his first appointment as a Managing Board member). During 2020, he exercised 18,000 stock options; the shares obtained were sold for an average share price of €122.02. Geraldine Matchett does not hold stock options.

Outstanding stock options

	Year of issue	Outstanding at 31 Dec. 2019	In 2020 Exercised	In 2020 Forfeited / expired	Outstanding at 31 Dec. 2020	Average share price at exercise (€)	Exercise price (€)	Expiry date
Dimitri de Vreeze	2012	12,000	(12,000)	-	-	114.20	40.90	15 May 2020
	2013	12,000	(6,000)	-	6,000	137.67	48.91	7 May 2021
	Total	**24,000**	**(18,000)**	**-**	**6,000**			
Of which vested		24,000			6,000			

For employee information, as required by section 383d Book 2 of the Dutch Civil Code, reference is made to Note 27, Share-based compensation. On 31 December 2020, 2,460,656 (2019: 3,020,830) of the total number of treasury shares outstanding were held for servicing equity-based remuneration plans.

Shareholding obligation

In addition to the performance shares held on the basis of vested grants under the DSM Stock Incentive Plan, the Co-CEOs have invested in DSM shares. These shares were bought through private transactions with private funds (including shares purchased through STI deferral). The table provides an overview of the number of shares held at year-end.

Managing Board holdings of DSM shares

	31 December 2020			31 December 2019		
	Ordinary shares purchased with private money	Holdings from vested PSUs	Total	Ordinary shares purchased with private money	Holdings from vested PSUs	Total
Geraldine Matchett	14,886	44,990	59,876	13,328	33,631	46,959
Dimitri de Vreeze	23,989	36,927	60,916	22,357	27,587	49,944
Total holdings	**38,875**	**81,917**	**120,792**	**35,685**	**61,218**	**96,903**

The Co-CEOs significantly exceed the shareholding obligation (300% of base salary).

Company performance versus remuneration over time

Five-year review of company performance and Managing Board remuneration

The following table provides an overview of the development of the remuneration of the members of the Managing Board over the past five years, the development of company performance, and the average remuneration of other employees (excluding the Managing Board members). Total remuneration for Managing Board members consists of the remuneration expenses calculated in accordance with IFRS as included in the annual reports of the relevant years. The table provides an overview of company performance based on Adjusted EBITDA, share price (year average) and the reduction of greenhouse gas emissions.

Typically, the share of total remuneration that is at risk varies for different employee segments and geographies, due to the impact of incentive schemes. While the percentage of variable pay as a percentage of total remuneration is highest for the Co-CEOs (at target 150%), it may be limited or nil for other employee segments or in certain countries (also as a result of CLA negotiations). Based on performance, the results of the respective incentive schemes (and therefore the impact on total remuneration) varies over time. The average remuneration of all other employees (excluding the Managing Board) is influenced not only by factors such as differences in the pay mix, or changes in exchange rates, but also by factors related to the composition of the employee population such as the impact of acquisitions and divestments, restructuring, and in- and outflow of personnel.

5-year overview of the year-on year-change of remuneration and company performance

		2016	2017	2018	2019	2020	Average[1]
Managing Board remuneration							
Geraldine Matchett	Base salary	3.5%	1.4%	2.7%	2.6%	41.1%	10.3%
	Total remuneration	27.3%	12.0%	22.3%	-3.8%	18.9%	15.3%
Dimitri de Vreeze	Base salary	3.5%	1.4%	2.7%	2.6%	41.1%	10.3%
	Total remuneration	15.5%	3.9%	25.1%	-0.6%	21.3%	13.0%
Company performance							
Adjusted EBITDA[2]		17.4%	14.5%	6.0%	9.9%	-2.0%	9.2%
Year-average share price		9.1%	24.4%	25.8%	23.1%	19.6%	20.4%
Greenhouse gas emission improvement		4.2%	4.1%	9.3%	12.7%	8.5%	7.8%
Average employee remuneration							
Base salary employees Netherlands		4.2%	4.3%	3.3%	3.4%	4.3%	3.9%
Average remuneration employees global		4.2%	0.9%	-1.6%	-0.2%	-0.2%	0.6%

1 Average calculated over the years for which a change on year-on-year basis is provided.

2 Based on DSM figures: five-year summary.

DSM's performance in terms of EBITDA, share price increase and Greenhouse gas emissions improvement has been outstanding over the past five years. This has also become visible in the development of dividend payments. The Managing Board's total remuneration expenses obviously changed in 2020, due to the CEO change. Base salary of Geraldine Matchett and Dimitri de Vreeze has been adjusted as of 15 February 2020, reflecting their new position; also impacting the 2020 Short-term incentive as well as contributions to the pension plan. The leadership transition also resulted in the number of Managing Board members going down from three to two. Taking this into account, the Managing Board's total remuneration expenses developed in line with the performance of the company, whilst the year-on-year change in base salary remains below the year-on-year change of average base salaries of employees in the Netherlands. Total remuneration expenses of the members of the Managing Board clearly demonstrate the fluctuations in the Short-Term incentive achieved and the expense related to equity-based compensation. Due to the fact that for employees globally a lesser portion of total remuneration is variable, the year-to-year change of the average remuneration of our employees globally (which includes all employee costs as included in Note 5 of the Consolidated Financial Statements) shows less fluctuations. The flattening of the change is to a large extent caused by merger & acquisition activities and restructuring of our operations, while the adjustments of exchange rates also had an impact. In addition, the year-on-year change of the average base salary in the Netherlands, as well as average employee cost globally, are influenced by the fact that the composition of the underlying employee population changes from year to year as a consequence of factors including retirements, new hires, restructurings, and merger & acquisition activities.

Pay ratio

Considering the Dutch Corporate Governance Code, the pay ratio is calculated per 31 December 2020 and is based on the average remuneration expense reported for each Co-CEO and the total employee cost. Since companies set their own definition in this respect, intercompany comparisons must be made with caution. The pay ratio will differ year-on-year, since the variable pay (as a percentage of annual base salary) will differ from year to year based on company results. Given that their pay is to a larger extent at risk, such fluctuations have a higher impact at Managing Board or Executive level, compared to the average variable pay of the employee group (limited or no variable pay component). The ratio will furthermore be influenced by differences in pay structures between regions, acquisitions/divestments and foreign exchange rates.

Due to the CEO change, the pay ratio dropped in 2020, since the remuneration package was set lower compared to the outgoing CEO, whilst equity-based compensation includes series granted in their previous role. The pay ratio calculated versus the Dutch employee remuneration average was for both Co-CEOs 19:1 (2019: 25:1), based on a total cost of €537 million in the Netherlands (which includes the remuneration of the Managing Board and has been deducted in the ratio calculation) and a headcount in the Netherlands of 3,858 as at 31 December 2020. The ratio of total remuneration, including annual base salary, STI, LTI and other benefits such as pension (as reported in this Remuneration report) versus the average remuneration of total employees globally is 33:1 (2019: 41:1) for each of the Co-CEOs.

Underlying data for the pay ratio calculation can be retrieved from the table DSM's remuneration expense for the Managing Board (including table notes) in the section Total remuneration of this Remuneration report, as well as from the table Geographical information in Note 4, Segment information, and from the table Employee benefit costs in Note 5, Net sales and costs (continuing operations) to the consolidated financial statements. Data for the Netherlands are explicitly mentioned as they are not directly retrievable.

Retrospect and outlook

Whereas the Managing Board Koninklijke DSM N.V. before the CEO transfer had three members, the board now consists of two Co-CEOs. Therefore the overall remuneration expenses in 2020 dropped compared to 2019. Further to this, the following considerations should be mentioned:

- Base salary of the incoming Co-CEOs has been positioned below base salary of the outgoing CEO
- Until 15 February 2020, base salary of the Co-CEOs was at the level set for members of the Managing Board (i.e., below CEO level)
- The 2020 STI for the Co-CEOs is based on the actual base salaries paid in 2020
- In 2020, the share units granted to the Co-CEOs in 2017 vested; note that the number of share units granted in 2017 was based on the base salaries applicable as a Managing Board member – this effect will also occur in 2021 and 2022

Following the strategic update provided in 2020, the Supervisory Board has decided that the goals underlying the Short- and Long-Term Incentive schemes will not be adjusted for 2021.

Early 2021, a quick scan was conducted, benchmarking the position of DSM within the labor market peer group as defined within the Remuneration Policy Managing Board Koninklijke DSM N.V. The scan (benchmark) showed that DSM dropped to the lowest position in the peer group as far as targeted total Direct Compensation (Annual Base Salary plus targeted Short-Term Incentive plus targeted Long-Term Incentive) is concerned and is far from approaching the median from below as set out in the remuneration policy. The Supervisory Board has therefore decided as a first step to close the gap to adjust annual base salary of the Co-CEOs to €1,003,625 as per 15 February 2021. This adjustment reflects a step-up towards the base salary of the outgoing CEO and in addition considers the market movement of the peer group and the employees based in the Netherlands. After this adjustment and compared to the quick scan mentioned, the Co-CEOs base salary moves towards the 25th percentile of the labor market peer group whereas target Total Direct Compensation still remains below the 25th percentile.

Although DSM in general has an attractive proposition to attract talent, DSM faces more and more difficulties in attracting and retaining senior leaders (one or two reporting levels below the Executive Committee). This is due to the fact that the remuneration of the Managing Board sets a ceiling especially with regard to Short- and Long-Term Incentives. Together with the fact that the Managing Board's targeted Total Direct Remuneration positions below the 25th percentile of the labor market peer group, this calls for action. On the one hand to further align actual remuneration of the Managing Board with the policy confirmed by the AGM, and on the other hand enabling DSM to submit compelling and competitive remuneration propositions to attract and retain senior talents that help building DSM's future success. Hence, in 2021 we plan to begin to explore ways to address such gaps, in order to ensure our remuneration approach and policy continue to support our business ambitions and future goals.

Remuneration of the Supervisory Board Koninklijke DSM N.V. 2020

Summary of the Remuneration policy Supervisory Board Koninklijke DSM N.V.

The remuneration policy is designed to engage qualified leaders with the right balance of personal skills, competences and experience required to oversee the execution of the company's strategy, its performance and its creation of long-term value, recognizing the interests of all stakeholders. In line with the Dutch Corporate Governance Code, the remuneration is not linked to company and individual performance. As a reference, the remuneration of the Supervisory Board is benchmarked to market practice, predominantly against AEX companies, given the company's country of domicile. The total fixed remuneration should approach the median of the reference market. The full version of the remuneration policy for the Supervisory Board Koninklijke DSM N.V. as approved by the 2019 AGM is available on the company website.

The table below summarizes the key elements of the remuneration policy, describing purpose, design and (potential) value.

Purpose	Design	Value
Fixed fee Basic pay for doing the job	Reward Supervisory Board members and incentivize them to utilize their skills and competences to the maximum extent possible in executing their tasks. The reward reflects the nature of responsibilities, the time spent, and aims to provide a fair and competitive pay level to engage qualified leaders. Review: in principle, every three years, based on in-depth benchmarking.	Approaching the median of the market reference (predominantly AEX companies). Position and annual fee: - Chair €105,000 - Deputy Chair €75,000 - Member €70,000 - Chair Audit Committee €18,500 - Member Audit Committee €12,000 - Chair other Committees €14,000 - Member other Committees €8,500
Intercontinental travel fee	Fixed amount representing time commitment related to intercontinental travel.	€5,000 for each time it is required to travel outside the continent of residence.
Expenses	Expenses incurred in fulfilling duties are reimbursed. To be paid upon submission of a statement of expenses, partially covered by a fixed allowance.	Depending on level of expenses. Fixed per annum: €1,250.
Shareholding requirement	In line with Dutch Corporate Governance Code, no mandatory shareholding requirement. Supervisory Board members are encouraged to invest in privately owned DSM shares.	Not applicable.
Benefits and loans	Supervisory Board members are not entitled to participate in any benefits program offered to employees. Loans will not be provided.	Not applicable.

Total remuneration 2020

Committee overview

The Supervisory Board members are assigned to the various committees.

Committee overview	Audit	Nomination	Remuneration	Sustainability
Rob Routs, Chair		Chair	Member	
Pauline van der Meer Mohr, Deputy Chair		Member	Chair	
Victoria Haynes, until 8 May 2020	Member		Member	
Eileen Kennedy		Member		Chair
Thomas Leysen, as of 8 May 2020	Member	Member		
Erica Mann	Member			Member
Frits van Paasschen	Member		Member	
Pradeep Pant	Member			Member
John Ramsay	Chair		Member	

Total Remuneration

The table provides an overview of total remuneration provided in 2020.

Remuneration of Supervisory Board Members

in €	Fixed						Total remuneration		Portion fixed/variable compensation	
	Annual fee		Committee fee		Other costs[1]					
	2020	2019	**2020**	2019	**2020**	2019	**2020**	2019	**2020**	2019
Rob Routs, Chair	105,000	96,667	22,500	20,208	1,250	6,250	128,750	123,125	100:0	100:0
Pauline van der Meer Mohr, Dep. Chair	75,000	68,750	22,500	20,208	1,250	6,250	98,750	95,208	100:0	100:0
Victoria Haynes, Member until 8 May 2020	29,167	65,833	8,542	19,042	521	24,250	38,229	109,125	100:0	100:0
Eileen Kennedy, Member	70,000	65,833	22,500	20,209	6,250	24,250	98,750	110,292	100:0	100:0
Thomas Leysen, Member as of 8 May 2020	40,833	-	11,958	-	729	-	53,521	-	100:0	100:0
Erica Mann, Member as of 8 May 2019	70,000	40,833	20,500	11,958	6,250	14,730	96,750	67,521	100:0	100:0
Frits van Paasschen, Member	70,000	65,833	20,500	19,042	6,250	29,250	96,750	114,125	100:0	100:0
Pradeep Pant, Member	70,000	65,833	20,500	19,042	6,250	24,250	96,750	109,125	100:0	100:0
John Ramsay, Member	70,000	65,833	27,000	24,917	1,250	6,250	98,250	97,000	100:0	100:0
Total	600,000	535,415	176,500	154,626	30,000	135,480	806,500	825,521	100:0	100:0

1 Involves International travel fee, expenses allowance and expenses exceeding expenses allowance.

In line with the remuneration policy, variable compensation does not apply, and Supervisory Board members do not participate in any pension scheme. No extraordinary items apply. The total annual fees increased due to the fact that 2020 was the first full year in which the fees as established in the revised 2019 policy came into effect. The total outlay in 2020 was slightly lower than in 2019. This was attributable to the fact that the number of payments related to the intercontinental travel fee were limited as a result of the restrictions on travel owing to the COVID-19 pandemic.

Benefits and loans

Members of the Supervisory Board are not eligible for any benefit programs offered by the company (or any beneficiary) to its employees; nor are any loans provided.

Equity-based compensation

As confirmed in the remuneration policy, Supervisory Board members do not receive any equity-based compensation. They are, however, encouraged to hold privately owned shares in DSM. At year-end 2020, Pauline van der Meer Mohr held 1,529 shares (2019: 1,529); John Ramsay held 1,057 shares (2019: 1,057); and Thomas Leysen held 5,035 shares. No other member of the Supervisory Board held shares in the company during 2020.

Remuneration over time

The table provides an overview of the total remuneration of the Supervisory Board members over a five-year period. A comparison of the development of total remuneration compared to company performance is not provided, as the Supervisory Board's total remuneration is not linked to company performance (Dutch Corporate Governance Code and remuneration policy of the Supervisory Board Koninklijke DSM N.V.).

5-year overview of the year-on-year change of the Supervisory Board remuneration

	2016	2017	2018	2019	2020	5-years average[1]
Rob Routs, Chair	15.5%	10.9%	0.0%	14.8%	4.6%	9.1%
Pauline van der Meer Mohr, Dep. Chair	14.9%	10.2%	0.0%	15.8%	3.7%	8.9%
Victoria Haynes, Member until 8 May 2020	10.5%	7.6%	0.0%	15.8%		
Eileen Kennedy, Member	26.5%	0.4%	-4.2%	22.2%	-10.5%	6.9%
Thomas Leysen, Member as of 8 May 2020						
Erica Mann, Member as of 8 May 2019						
Frits van Paasschen, Member as of 3 May 2017				11.6%	-15.2%	
Pradeep Pant, Member as of 29 April 2016			-3.9%	11.1%	-11.3%	
John Ramsay, Member as of 3 May 2017				17.6%	0.0%	

1 Average calculated over the years for which a change on year-on-year basis is provided (such year-on-year changes are only calculated for years in which the respective Supervisory Board member was engaged during the whole year).

Closing remarks and shareholder vote

The 2019 AGM approved the remuneration policy for the Supervisory Board Koninklijke DSM N.V. (98.45% in favor) as well as the remuneration policy for the Managing Board Koninklijke DSM N.V. (97.48% in favor).

The total remuneration delivered in 2020 is aligned with the respective remuneration policies: no deviations or derogations applied. As in 2019, no revision or claw-back of any incentives occurred in 2020.

The remuneration for the financial year 2020, as described in this report, is subject to an advisory vote at the 2021 AGM. Questions raised in the 2020 AGM regarding remuneration items were addressed in the respective meeting and reference is made to the Q&A document and minutes of that meeting, posted on the company website. As a result, there were no specifics raised that needed to be addressed in this Remuneration report.

Heerlen, 1 March 2021

The Supervisory Board
Rob Routs, Chair
Pauline van der Meer Mohr, Deputy Chair
Eileen Kennedy
Thomas Leysen
Erica Mann
Frits van Paasschen
Pradeep Pant
John Ramsay

Information on the DSM share

Shares and listings

Ordinary shares in Koninklijke DSM N.V. are listed on the **Euronext stock exchange** in Amsterdam (Netherlands) (Stock code 00982, ISIN code NL0000009827). **Options** on ordinary DSM shares are traded on the **European Option Exchange** in Amsterdam (Euronext.liffe). In the US, a sponsored unlisted American Depositary Receipts (ADR) program is offered by Deutsche Bank Trust Co. Americas (DR ISIN US7802491081), with four ADRs representing the value of one ordinary DSM share.

Besides the ordinary shares, 44.04 million **cumulative preference shares A** (cumprefs A) are in issue, which are not listed on the stock exchange; these have been placed with institutional investors. The cumprefs A have the same voting rights as ordinary shares, as their nominal value of €1.50 per share is equal to the nominal value of the ordinary shares.

The **dividend percentage** of the cumprefs A is based upon the dividend yield of the ordinary shares (dividend as a percentage of the average share price). This percentage may be increased or decreased by a mark-up or discount of no more than one hundred (100) basis points, to be determined by the Managing Board in consultation with the Supervisory Board. The basis of computation of the dividend on the Preference Shares is €5.2942.

Transfer of the cumprefs A requires the approval of the Managing Board, unless the shareholder is obliged by law to transfer his shares to a previous shareholder.

The average number of **ordinary shares outstanding** in 2020 was 171,535,921. All shares in issue are fully paid. On 31 December 2020, the company had 172,219,339 ordinary shares outstanding.

Issue of shares

The **issue of shares** takes place by a decision of the Managing Board. The decision is subject to the approval of the Supervisory Board. The scope of this power of the Managing Board shall be determined by a resolution of the General Meeting of Shareholders and shall relate to at most all unissued shares of the authorized capital, as applicable now or at any time in the future. In the Annual General Meeting of Shareholders of 8 May 2020 this power was extended up to and including 8 November 2021, on the understanding that this authorization of the Managing Board is limited to a number of ordinary shares with a nominal value amounting to 10% of the issued capital at the time of issue, and to an additional 10% of the issued capital at the time of issue in connection with a rights issue. The issue price will be determined by the Managing Board and shall as much as possible be calculated on the basis of the trading prices of ordinary shares on the Euronext Amsterdam Stock Exchange.

Distribution of shares

Under the Dutch Financial Markets Supervision Act, **shareholdings of 3% or more** in any Dutch company must be disclosed to the Netherlands Authority for the Financial Markets (AFM). According to the register kept by the AFM, the following shareholders had disclosed that they have a direct or indirect (potential) interest between 3% and 10% in DSM's total share capital on 31 December 2020:

- Artisan Investments GP LLC
- ASR Nederland N.V.
- BlackRock, Inc.
- Capital Research and Management Company and EuroPacific Growth Fund
- NN Group N.V.
- Rabo Participaties B.V.

Repurchase of own shares

The company may acquire **paid-up own shares** by virtue of a decision of the Managing Board, provided that the par value of the acquired shares in its capital amounts to no more than one tenth of the issued capital. Such a decision is subject to the approval of the Supervisory Board. In the Annual General Meeting of Shareholders of 8 May 2020, the Managing Board was authorized to acquire own shares for a period of 18 months from said date (i.e., up to and including 8 November 2021), up to a maximum of 10% of the issued capital, provided that the company will hold no more shares in stock than at maximum 10% of the issued capital.

In 2019, DSM announced a **share buyback program** with an aggregate market value of **€1 billion** starting in the second quarter of 2019, with the intention to reduce its issued capital. This program was in addition to the usual repurchase programs which DSM executes from time to time to cover commitments under share-based compensation plans and the stock dividend.

Execution of this €1 billion share buy-back program commenced on 1 April 2019. Under this program, DSM repurchased 5,362,936 of its own shares for a consideration of €600 million in 2019. In 2020, DSM repurchased another 1,276,035 million shares for a consideration of €145 million, bringing the total number of shares repurchased to 6,638,971 for a total consideration of €746 million. In June 2020, DSM announced that given the COVID-19 environment and given the acquisition of Erber Group, it has decided to cancel the remainder of its €1 billion share buy-back program.

Besides the share buy-back program with the intention to reduce its issued capital, in 2020 DSM executed the **repurchase** of 1,600,000 of its own shares for a total consideration of €165 million for the purpose of covering the company's commitments under existing share-based compensation plans and shares for stock dividend. This program included share-based compensation plans (900,000 shares) and stock dividend as part of the final dividend 2019 and interim dividend 2020 (700,000 shares).

In total in 2020, DSM **repurchased 2,876,035** of its own shares for a combined consideration of **€309 million**.

Development of the number of ordinary DSM shares

	2020			2019
	Issued	Repurchased	Outstanding	Outstanding
Balance at 1 January	181,425,000	8,976,245	172,448,755	175,650,575
Changes:				
Reissue of shares in connection with share-based payment plans	-	(1,460,174)	1,460,174	3,395,405
Repurchase of shares	-	2,876,035	(2,876,035)	(7,962,936)
Dividend in the form of ordinary shares	-	(1,186,445)	1,186,445	1,365,711
Balance at 31 December	181,425,000	9,205,661	172,219,339	172,448,755
DSM share prices on Euronext Amsterdam (€ per ordinary share):				
- Highest closing price			148.55	117.90
- Lowest closing price			87.52	69.54
- At 31 December			140.80	116.10
Market capitalization at 31 December (€ million)[1]			25,545	21,063

1 Source: Bloomberg.

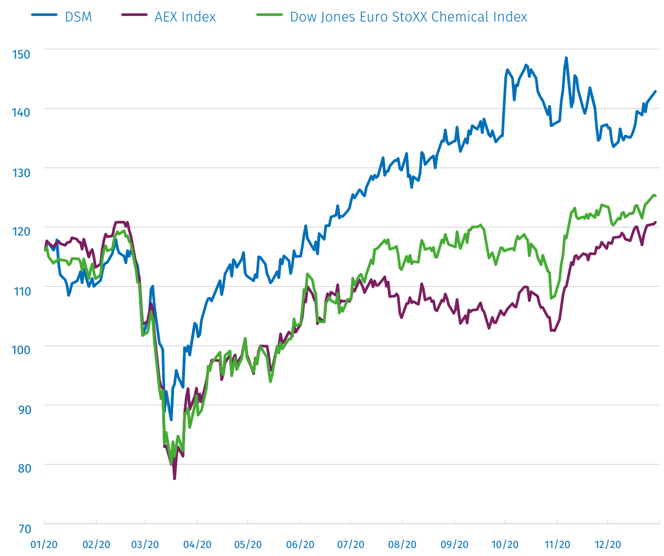
Geographical spread of DSM shares outstanding

in % (excl. cumprefs A)	2020	2019
North America	39	39
United Kingdom	16	17
Netherlands	10	12
France	12	11
Germany	4	4
Switzerland	5	4
Nordic	6	5
Asia Pacific	4	4
Other countries	4	4

DSM Share price development versus AEX and Dow Jones Euro StoXX Chemical Index

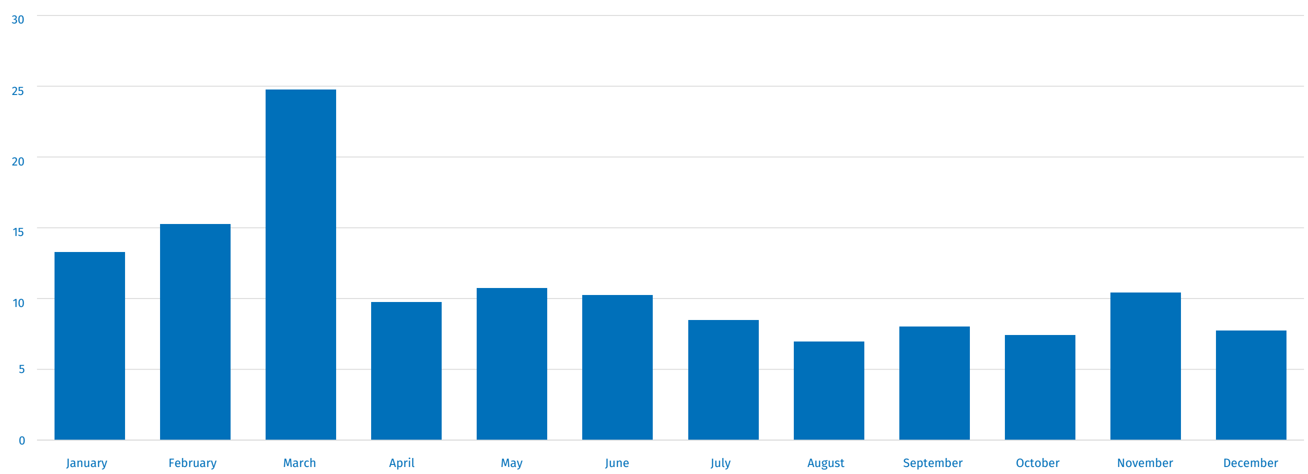
rebased versus DSM share price

in €



Trading volume ordinary DSM shares 2020

x million shares as reported by Euronext Amsterdam



Article 10 of Directive 2004/25

With regard to the information referred to in the Resolution of article 10 of the EC Directive pertaining to a takeover bid which is required to be provided according to Dutch law, the following can be reported:

- Information on major shareholdings can be found above (Distribution of shares)
- There are no special statutory rights attached to the shares of the company
- There are no restrictions on the voting rights of the company’s shares. When convening a General Meeting of Shareholders, the Managing Board is entitled to determine a registration date in accordance with the relevant provisions of the Dutch Civil Code
- The applicable provisions regarding the appointment and dismissal of members of the Managing Board and the Supervisory Board and amendments to the Articles of Association can be found in the section Corporate governance and risk management
- The powers of the Managing Board regarding the issue and repurchase of shares in the company can be found in the sections Issue of shares and Repurchase of own shares above
- Other information can be found in the 'Notes to the consolidated financial statements' (16 Equity, 19 Borrowings, 27 Share-based compensation)

Dividend on ordinary shares

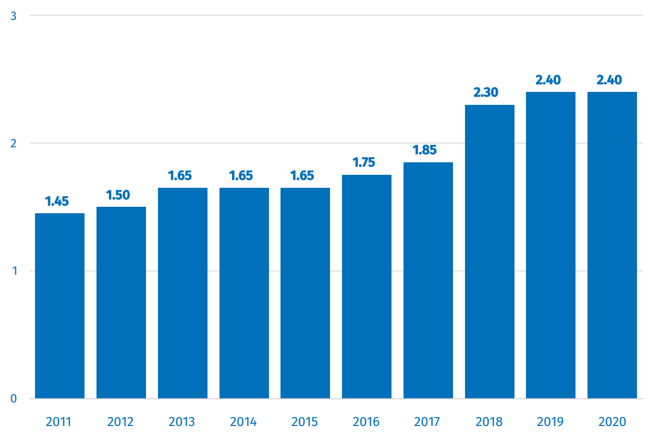
DSM's dividend policy is to provide a stable and preferably rising dividend. DSM proposes to keep the total dividend on ordinary shares unchanged at €2.40 per ordinary share for 2020.

This will be proposed to the Annual General Meeting of Shareholders to be held on 6 May 2021. An interim dividend of €0.80 per ordinary share having been paid in August 2020, the final dividend would then amount to €1.60 per ordinary share.

The dividend will be payable in cash or in the form of ordinary shares at the option of the shareholder, with a maximum of 40% of the dividend amount available for stock dividend. If more than 40% of the total dividend is requested by the shareholders to be paid out in shares, those shareholders who have chosen to receive their dividend in shares will receive their stock dividend on a pro-rata basis, the remainder being paid out in cash. Dividend in cash will be paid after deduction of 15% Dutch dividend withholding tax. The ex-dividend date is 10 May 2021.

Dividend per ordinary DSM share in €

2020 dividend is subject to approval by Annual General Meeting of Shareholders



Dividend on Cumulative Preference Shares A

The **cumulative preference shares A** are, in accordance with article 32, section 3, of the Articles of Association, entitled to a dividend for the financial year 2020 which is equivalent to the dividend yield of the ordinary shares over 2020, which will be — if the dividend proposal on ordinary shares will be adopted by the AGM on 6 May 2021 — about 1.94%. This percentage may be increased or decreased by a mark-up or discount of no more than one hundred (100) basis points, to be determined by the Managing Board in consultation with the Supervisory Board.

The Managing Board in consultation with the Supervisory Board has decided to use the maximum mark-up within their discretionary option (100 basis points) and to set the **dividend percentage** on the Cumulative Preference Shares A at 2.94% (2019: 3.26%).

As the basis for the computation of the dividend on the Preference Shares A amounts to €5.2942 per share, the **total dividend** for 2020 equals to €**0.1556 per share**.

An **interim dividend** of €0.06 per Cumulative Preference Share A having been paid in August 2020, the final dividend thus amounts to €0.0956 per Cumulative Preference Share A.

Bearer shares

On 27 April 2006, all **bearer shares** (*'aandelen aan toonder'*) in DSM's issued share capital were converted into **registered shares** (*'aandelen op naam'*) (pursuant to an amendment of the Articles of Association made at the time). In order to exercise the rights vested in the shares, holders of former bearer shares were required to hand in their bearer share certificates (*'aandeelbewijzen'*) to DSM.

Pursuant to an amendment of Section 2:82 of the Dutch Civil Code (DCC) in 2019, DSM shareholders who still have not handed in their **bearer share certificates** will lose any entitlement to exchange their bearer share certificates for a replacement share as per 2 January 2026.

In accordance with Section 2:391(2) DCC, DSM hereby gives notice of the following:

(i) A shareholder may not exercise the rights vested in a share until after he/she has handed in his/her bearer share certificates to DSM.

(ii) A bearer share certificate which was not handed in to DSM on or before 31 December 2020 has become void and the share represented by the bearer share certificate have been acquired by DSM for no consideration, irrespective of whether DSM's Articles of Association allow the acquisition of its own shares. Section 2:98a (3) DCC does not apply to this acquisition. DSM shall be registered as the shareholder thereof in DSM's shareholders register. DSM shall hold the shares until the end of the period mentioned in (iii) below.

(iii) A shareholder who hands in a bearer share certificate to DSM no later than five years after the acquisition mentioned in (ii) above, therefore no later than 1 January 2026, is entitled to receive from DSM a replacement registered share provided that this share is registered in DSM's shareholders register in the name of a central securities depository, and DSM will instruct the shareholder's bank to credit the share in a securities account in the name of holder of the bearer share certificate.

The procedure described above follows from Section 2:82(3) up to and including (9) DCC, whose provisions apply.

Sustainability statements

Sustainability statements – People

	2020	2019	2018	2017	2016
Workforce[1 2]	23,127	22,174	20,977	21,054	20,786
Female:male ratio	29:71	28:72	28:72	27:73	27:73
% by age category					
<26 years[3]	5	5	5	6	6
26–35 years	26	26	25	26	25
36–45 years	29	29	30	28	28
46–55 years	25	25	26	25	27
>55	15	15	14	15	14
% under-represented nationalities					
Executives	30	31	31	-	-
Management	42	44	43	-	-
Other	58	59	59	-	-
% female					
Executives	21	20	19	17	15
Management	30	29	28	27	26
Other	29	28	28	28	29
% executive hires					
Under-represented nationalities	65	55	61	-	-
Female	26	32	61	43	13
% new hires by region					
Netherlands	11	11	13	11	5
Rest of Europe	25	24	22	26	23
North America	19	22	25	20	27
China	15	18	16	16	20
Rest of Asia–Pacific	11	12	9	11	8
Rest of the world	19	13	15	15	17
Total number new hires (excluding acquisitions)	1,729	2,372	3,005	2,203	1,730
Acquisitions	1,539	1,161	80	247	46
Outflow of employees					
Voluntary resignations	1,052	1,118	1,098	766	585
Total outflow (excluding divestments)	2,336	2,352	2,868	1,943	1,729
Divestments		-	357	42	57
Voluntary resignations (% total workforce)	4.8	5.4	5.3	4.1	2.8
Total turnover (% total workforce)	10.6	11.2	13.9	10.2	8.3
Development training in hours per employee	6	8.1	6[4]		
Net sales per employee (x €1,000)	414[5]	421	429[6]	420	386
Safety					
Frequency Index of Recordable Injuries (per 100 DSM employees and contractor employees)	0.24	0.28	0.33	0.36	0.33

1 All data presented in the Sustainability Statements are subject to the non-financial reporting policy.

2 For the indexes based on age, nationalities, gender, inflow and outflow, the companies that are not integrated into the HR systems (approximately 5% of the total workforce) are not taken into account.

3 We do not employ people younger than 15 under DSM contract. We require our suppliers to not use forced labor or child labor according to our Supplier Code of Conduct.

4 In 2018, development training hours per employee were measured using a new standard with stricter definitions. Figures of previous years cannot be recalculated according to the new definitions, which means there are no relevant figures available for previous years.

5 Net sales per employee is for total DSM (= continuing and discontinued operations).

6 Excluding the temporary vitamin effect in 2018, see Profit in Integrated Annual Report 2019.

Sustainability statements – Brighter Living Solutions

	2020	2019	2018	2017	2016
Brighter Living Solutions sales as % of net sales[1]	63[2]	63	62[3]	62	63

1 All data presented in the Sustainability Statements are subject to the non-financial reporting policy.

2 For a small percentage of sales (less than 0.6% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.

3 Excluding the temporary vitamin effect in 2018, see Profit in Integrated Annual Report 2019.

Sustainability statements – Planet

	2020	2019	2018	2017	2016
Energy and greenhouse gas[1]					
Primary energy use (in PJ)	21.5	21.2	20.8	23.6	22.6
Energy efficiency improvement (year-on-year)	5.7	2.3	1.4	0.7	2.0
Greenhouse gas emissions scope 1 + 2, market-based (in CO_2 equivalents x million tons)	1.24	1.17	1.23	1.50	1.50[2]
Greenhouse gas emissions scope 1 + 2, location-based (in CO_2 equivalents x million tons)	1.43	1.38	1.38	1.57	1.50
Total biogenic CO_2 emissions from combustion of biofuels (x million tons)	0.046[3]	-	-	-	-
Electricity purchased from renewable resources (%)	60	50	41	21	8
Total purchased renewable electricity (GWh)	748	632	446	229	79
Emissions to air					
Volatile Organic Compounds (x 1,000 tons)	3.5	2.7	4.9	6.6	8.9
Nitrogen oxide (NO_x) (x 1,000 tons)	0.3	0.4	0.5	0.7	0.8
Sulfur dioxide (SO_2) (x 1,000 tons)	0.02	0.06	0.09	0.28	0.33
Discharges to water and landfill					
Chemical Oxygen Demand discharges to surface waters (x 1,000 tons)	2.0	2.1	2.2	2.5	2.4
Waste recycled (in %)	85	86	83	84	83
(Landfilling) Non-hazardous waste (x 1,000 tons)	17	15	18	16	18
Total process-related waste (x 1,000 tons)	205	192[4]	177	-	-
Water					
Total water withdrawal (x million m^3)	108	111	114	114	104
Water withdrawal for non-once-through cooling (x million m^3)	24	23	22	23	22
Raw materials					
Renewable raw materials (in %)	15.2	14.7	14.3	15.4	16.5
Biodiversity					
Sites in or adjacent to protected areas (in %)	27	25[5]	-	-	-
Fines (in €)	26,000	115,100	23,500	128,400	27,900
Non-monetary sanctions	18	2	6	4	2
Environmental incidents	79	60	71	101	109
Environmental complaints	51	58	53	35	21

1 All data presented in the Sustainability Statements are subject to the non-financial reporting policy.

2 The baseline emissions for our Science Based Targets (year: 2016) were recalculated to 1.65 due to the inclusion of eight acquired sites in the reporting scope.

3 The total biogenic CO_2 emissions from combustion of biofuels is available as of 2020.

4 The 2019 non-hazardous waste has been restated due to a correction in the calculations at one location.

5 In 2019, Sites in or adjacent to protected areas was measured against a stricter definition. The figures of previous years could not be recalculated against the stricter definition, which means there are no relevant figures available for previous years.

Stakeholder engagement

In the following pages, we present some examples of how we engage with external stakeholders, including the partners in our value chain. For an overview of all our stakeholders, see Stakeholders. For information on how we engage with our employees, see People.

Customers

Implementing our strategy throughout our businesses where we enable, innovate and advocate on the three domains — Nutrition & Health, Climate & Energy, and Resources & Circularity — has allowed us to strengthen our relationship with our customers and increase our impact on the total eco-system. Our customers are key stakeholders, and the COVID-19 pandemic in 2020 strengthened our relationship and intimacy with them.

Customer loyalty and satisfaction

Customer loyalty and satisfaction starts with understanding our customers, their needs and their journey when interacting with us. In our daily connections with our customers, the year gave us the opportunity to strengthen our relationships through the disruptions caused by COVID-19. Intrinsic needs substantially changed through 2020, especially using more digital means, enhanced with human care and collaboration. The care for and collaboration with our customers has made tremendous steps in our culture and technology capabilities, where customer loyalty and satisfaction are measured through the Net Promoter Score (NPS) methodology (both relational and transactional) — the voice of the customer. This enables us to continuously improve our product and service offering towards our customers.

Our customers clearly indicated a need for virtual collaboration and modern ways of doing business in fulfillment and innovation. Several steps were made to satisfy this need regarding Customer Experience offerings and technologies.

Our Net Promotor Score continues to improve

In 2020, our NPS improved to 50 (2019: 41) as a result of the strong collaboration and strengthened relationships throughout the year. With this improvement, we have seen an increase of our overall NPS score for five consecutive years (2016: 38). Additionally, several business groups have implemented an automated survey process to continuously measure customer satisfaction during specific interactions throughout the year. This provides instant performance feedback and new customer insights. Results are taken up in cross-functional meetings to drive the immediate optimization of processes and frontline staff interaction. Learnings from these initiatives are currently being applied to other business groups and will help us to further improve the overall customer experience with DSM.

Customer Led Innovation and lead generation

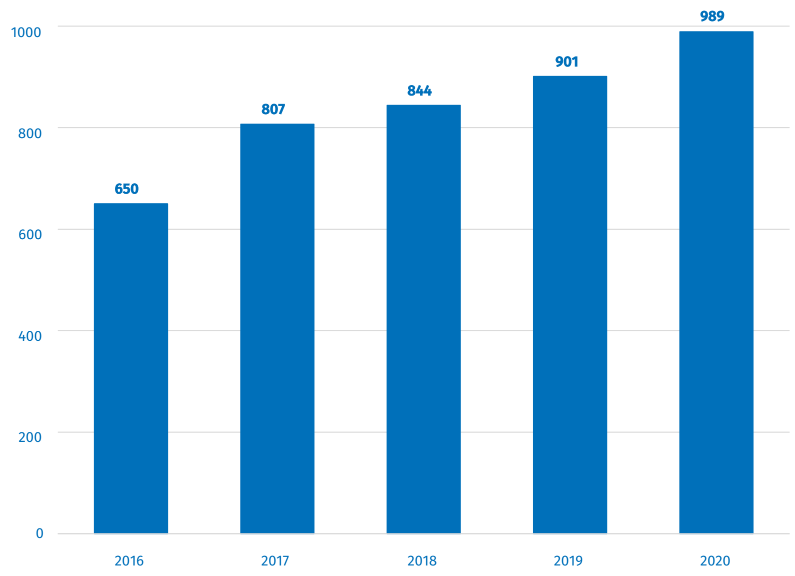
DSM has made further steps up in Customer Led Innovation and lead generation. A stronger involvement in fundamental product and application innovation of our (key) customers is already leading to a qualitative pipeline and success rate, while being pro-active in developing needs in key industries and customers. Through both a digital and offline synchronized customer engineering journey we attempt to increase speed and generate leads in stronger collaboration with our key partners. Customer feedback enforced our desire to increase responsiveness and high ease of doing business along the full journey of considering, buying, applying and paying for our solutions.

Brand value

Our brand is an important business asset. We are a purpose-led, performance-driven company that aspires to provide innovative products and solutions that support our purpose to create brighter lives for all. In 2020, DSM's Brand Value grew by 9.7% year on year. Our strong brand value is attributed to a high brand strength, combined with a consistent business performance.

Brand value[1]

x € million



1 As measured by the Brand Finance valuation methodology

Customer Value Propositions

We continuously sharpen our understanding of our customers' needs and build them into our value propositions. We emphasize why our solutions enable our customers to satisfy the needs of the consumers they serve as well as enable them to succeed in the market, ensuring we match the evolving customer needs and customer value drivers. Our value propositions clarify what the benefits are for our customers and for others in the ecosystems that might benefit from our solutions. The value propositions also highlight how these solutions fit our purpose-led, performance-driven portfolio.

Suppliers

The DSM Sustainable Procurement Program

Sustainability is at the heart of everything DSM does. Our Sustainable Procurement Program is instrumental in ensuring that we deliver together with our suppliers on our promise to reduce our environmental footprint and improve the lives for people today and generations to come through our activities, products and innovations.

Our Sustainable Procurement Program is comprised of three elements:

- Supplier development and evaluation program, where we focus on assessing, auditing and further improving our suppliers' sustainability performance by actively developing and following up on corrective actions
- Our Scope 2 program on reducing greenhouse gas emissions from purchased electricity
- Our Scope 3 program on reducing greenhouse gas emissions throughout our value chain, where we are working together with our suppliers on our collective carbon footprint and emissions

Since 2020, in addition to renewable electricity, procurement is working to enable a sustainable decarbonization of heat via renewable fuels.

Supplier Sustainability Evaluation

	2020	2019
Spend coverage SCoC	93%	95%
EcoVadis assessments	351	322
Together for Sustainability audits	14	15

Supplier Code of Conduct
The business principles most relevant for the supply chain are brought together in the Supplier Code of Conduct (SCoC) and structured along the three sustainability dimensions of People, Planet and Profit. The Supplier Code of Conduct (available on the DSM Supplier website in eight languages) forms the basis on how we choose to do business and interact with our suppliers. In 2020, 93% of our supplier spend was covered by the SCoC versus our target level of 95%. Through Together for Sustainability assessments and audits, we check that suppliers act in compliance with our norms and values. When suppliers cannot meet our expectations, we will work with them to define and execute an improvement plan.

Assessing sustainability in our supply chain
At DSM, we understand that connecting across complex value chains is not easy. This is why we are a member of the Together for Sustainability (TfS) initiative. TfS aims to develop and implement a global supplier engagement program that assesses and improves sustainability practices on both environmental and social aspects. More information about this program can be found on our website.

In 2020, despite the COVID-19 pandemic and the focus needed to manage the value chain by DSM and our suppliers, we continued our focus on driving improvement to support sustainability development in the value chain. We assessed 351 suppliers in 2020 through TfS, of which 318 were re-assessments. 60% of our re-assessed suppliers received an improved sustainability score, compared to 57% last year, which indicates that our suppliers are further engaging in sustainability.

TfS site audits were impacted by contact and travel restrictions throughout the year. As a consequence, we looked for new ways to conduct audits, and DSM took the lead through TfS to pilot its first virtual audit. The virtual audit used technology to conduct the audit, assessment, inspection and oversight from a remote location. This allowed us to proceed with the audit of the supplier as well as practice and evaluate virtual audits for the future.

Capabilities to enhance sustainability
The year also saw the TfS community gathered at the TfS Annual Workshop, attended by nearly 130 working members. The virtual gathering came at a pivotal time in TfS's history with the launch of the TfS Grow & Deliver strategy, delivering the strategic roadmap 2020–2025 for how to make global chemical supply chains more sustainable. During the workshop, we had the opportunity to share our journey of Sustainable Procurement in a panel discussion in which we shared our approach, successes and hurdles of integrating sustainability into our procurement processes.

Furthermore, TfS organized a featured supplier training for Chinese petrochemical companies at the 2020 China Petroleum and Chemical International Conference in Nanjing. As an active TfS member, we led the organization of this year's training with the support of one other member company. About 500 participants including suppliers, TfS members and industry organization representatives were present. The training focused on how to build a sustainable chemical supply chain and the specific requirements for chemical companies. It also offered an opportunity for suppliers to obtain a more in-depth understanding of what is required in a TfS assessment and audit.

Further training in sustainability was provided to our procurement community. Three trainings were offered with practical tools on integrating sustainability into the daily work of Procurement professionals, specifically on sustainable procurement, Together for Sustainability assessments and audits, and scope 3. These trainings aim to equip our colleagues with the knowledge and information to engage in the relevant sustainability conversations with our suppliers.

Stakeholder engagement
A strong, sustainable — and circular — value chain is only as strong as its weakest link. In addition to working with our suppliers, we also work with external partners to enhance collaboration in the supply chain. These partners include Roundtable for Sustainable Palm Oil (RSPO), Friends of the Sea, the Marine Stewardship Council and Together for Sustainability (TfS).

Taking steps toward sustainable palm oil derivatives
We are actively taking steps to reduce deforestation by sourcing ingredients like palm oil derivatives in a more sustainable way. For example, we are a member of the RSPO — a not-for-profit, multi-stakeholder organization aimed at making sustainable palm oil the market norm. We aim to have RSPO certification for all of our major production sites that use palm oil derivatives. Through our business group DSM Nutritional Products, we are a member of RSPO. DSM Food

Specialties and DSM Nutritional Products met their objective to use 100% RSPO certified sustainable palm oil products using RSPO 'Mass Balance' supply chain models by 2020.

Responsibly sourced marine resources
Protecting our marine environment is important to us as a company. We are committed to the responsible and sustainable use of natural marine resources. We have Friends of the Sea certification for all our fish oil purchases. This helps ensure that the fisheries involved in providing fish oil for the production of our omega-3 product range are sustainable. Furthermore, we successfully attained 100% Marine Stewardship Council (MSC) certification for all our tuna oil suppliers in 2020. We are proud to partner with the MSC, the global gold standard for certification and eco-labeling of seafood, to offer MEG-3® tuna DHA oils and powders that are MSC Chain of Custody (CoC) certified. This certification guarantees 'ocean to purchase' traceability throughout the entire supply chain, providing assurance that our tuna DHA products can be easily traced to certified fisheries.

Supplier projects
As part of our drive to foster better business through our supplier projects, our procurement organization engages in proactive dialogue with suppliers in order to move the business agenda forward in our Focus Domains of Nutrition & Health, Climate & Energy, and Resources & Circularity. In this context, DSM Sourcing pursues initiatives to create joint value, awareness and engagement in innovation, greenhouse gas emissions reduction and renewable electricity projects.

Supplier Enabled Innovation projects
Every day we work with our suppliers on new ideas, product innovations, and solutions to many business and societal problems. We want to work with partners that share our purpose of creating brighter lives for all. This involves challenging ourselves with fresh thinking that can add real value to what our customers need, to what our market needs, and ultimately to what society needs. To drive sustainability in our value chain, we work together with our innovative partners to recycle and reuse carbon fibers in our engineering materials. In the field of Animal Nutrition, moreover, we are collaborating with a leading industry supplier to develop animal diets that have improved production efficiency and reduce environmental impact.

Scope 3 projects on reducing greenhouse gas emissions
As one of the first in the industry in Europe, our location in Grenzach (Germany) switched from conventionally produced energy to green hydrogen in February 2020. Using green hydrogen in our vitamin production shows our strong commitment to support the reduction of greenhouse gas emissions. Steam reforming of natural gas remains the most important method of producing commercial bulk hydrogen. However, this also results in about 12 tons of carbon dioxide per ton of hydrogen. Green hydrogen, on the other hand, is generated by electrolysis powered by sustainable hydroelectricity — without any greenhouse gas emissions. The green hydrogen is used in Grenzach as synthesis gas for vitamin production. This project is an excellent example of a site implementing our sustainability strategy and leading the way in setting new industry standards and creating new supplies of green energy locally.

The Global Logistics and Packaging team has been connecting with other shippers and industry bodies to advocate sustainability in the international transport market. Together, we have formed the BICEPS Network, a network with the aim to reduce CO_2 emissions of the carriers. This has led to an internationally verified rating system that provides an industry-recognized sustainability ranking of shipping lines and enables us to reward sustainable behavior.

Investors

We value the essential contribution our capital providers make to our success and prosperity, allowing us to pursue a long-term oriented, value-creating strategy. This should also lead to a continuous increase of the company's valuation for the benefit of its shareholders and provide a low risk profile for our debt holders.

Transparent communication with financial markets
We ensure that accurate financial and relevant non-financial information is communicated to the financial markets in a transparent and simultaneous way. All information is made easily accessible to the public via the company website. Besides the Annual General Meeting of Shareholders, we also reach out to the financial markets through events like our

Investor Days, participation in **(virtual) investor conferences** and by organizing **roadshows**. We actively seek engagement with **financial advisors** who cover DSM on behalf of their financial market clients, such as brokers, credit rating agencies, proxy advisors, shareholder representative organizations, and ESG (Environment, Social, Governance) rating agencies.

Feedback from the financial markets is periodically discussed and assessed by the Managing Board and the Supervisory Board. We highly value the insights gained through these engagements.

We engage with our investors and their representatives on topics such as the SDGs, climate change, governance, sustainability in supply chain management, natural and social capital, and responsible taxation.

Updating investors on our strategic progress
During 2020, we continued to update the market on our progress against our **strategic targets** as well as the **sustainability ambitions** and our progress with the large **sustainability-driven innovation projects**. We provided updates through quarterly conference calls and at various roadshows covering all large investor cities, as well as in conferences, visits from investors and by many telephone and video calls. Due to COVID-19, the financial markets were impacted by uncertainty in the year. DSM intensified the direct virtual contacts with its investors in order to keep them all informed about how DSM has been managing COVID-19 and its impact. Our investor day in November was organized live, in a fully virtual venue.

Engaging with the market on purpose and ESG
Purpose and profit go hand in hand at DSM, which has been demonstrated by a continuing strong performance on both financial and non-financial metrics. In 2020, we actively advocated **purpose-driven entrepreneurship** among our shareholders. We engaged with investors, including **pension funds**, to discuss their responsibility in long-term value creation for their customers, but also for the society and the environment their participants live in. We actively participated in various impact investment initiatives including **De Nederlandsche Bank (DNB) working group on SDG Impact Measurement** and the **WBCSD**.

We engaged with FCLT (**Focusing Capital to the Long Term**), which works to encourage a longer-term focus in business and investment decision making and whose mission is to motivate business leaders to actively combat short-termism in our financial markets. Our engagement with FCLT emphasizes the need for including **non-financial long-term metrics** (environmental, societal and governance related) in the investment decisions of investors. In particular, we emphasize the need to make the metrics **uniform, comparable** and **auditable**.

We further stepped up our engagement with leading ESG Ratings and Benchmarks advisors to the financial sector, including **Sustainalytics, MSCI, Vigeo-Eiris and ISS-ESG**.

In 2020, we saw an increased focus in our engagement dialogues on **social elements** including human rights, diversity and inclusion.

We also saw the number of **direct engagements** between investors and DSM on ESG topics, including SDG impact, substantially increase in 2020. ESG has become part of the regular agenda of the investor meetings and is no longer a topic solely for the sustainability specialists. Being recognized as a leader in sustainability and at the same time showing continued good financial progress, we were frequently invited for **in-depth engagement calls** and meetings on how to include — and compare — important non-financial parameters in their investment processes.

At the end of 2020, 53% of our shares held by institutional investors were held by signatories of the **Principles for Responsible Investment** (PRI investors) and 9% of our outstanding shares at institutional investors were in dedicated **sustainability funds**.

Society

We engage with society at multiple levels – from local community initiatives to collaborations with universities and research institutes. We work with NGOs and civil society to develop solutions for societal issues, and advocate with governments and society on important issues relating to the Sustainable Development Goals and the Paris Agreement. We also engage in philanthropic and sponsorship activities to the average yearly amount of approximately €6 million.

Engaging on education and nutrition in Brazil
We continued our support of a number of educational initiatives. We also increased our partnership with Gastromotiva, sponsoring nutritionally fortified meals in poor communities. Our Tortuga Institute reached 22 institutions in Brazil, Colombia, Costa Rica and Peru with food, hygiene, protection and cleaning items.

Collaborating on research and education in China
We continued our collaboration with universities and institutes such as the Institute of Chinese Academy of Science on application formulations for vitamins, the Peking University on polymer physics, Shanghai Jiaotong University on composite processing and Xián Jiaotong University on polymer flowability. We continued our program with the DSM Hope School, providing scholarships, laptops, and a heat pump to give students access to hot water.

Awareness of women's health in India
We launched Project Streedhan. 'Streedhan' refers to the wealth to which a woman has an absolute right under Hindu law. This campaign aims to create awareness of the link between nutrition and immunity. It encourages women to invest in their health (their real 'wealth') through immunity-building foods. The campaign has already been viewed more than 10 million times.

Nutrition for the workforce and in an aging society in Japan
We organized a Health Academy with customers and media to communicate the importance of nutrition in an aging society. DSM Japan is also collaborating with the Nutrition Japan Public Private Platform, co-chaired by the Ministry of Foreign Affairs and the Ministry of Agriculture, Forestry and Fishing, on workforce nutrition improvement. After proving the concept for fortified rice in Cambodia, the next project will focus on Myanmar.

Celebrating Chemistry and highlighting healthy food in the Netherlands
The Brightlands Campus in Geleen (Netherlands) hosted the Feel the Chemistry Festival, celebrating 80 years of science and innovation in the area. Today, it is an innovation campus that is ready to meet the challenges of the future and is developing the first 'Circular Hub' in Europe. DSM co-hosted the two-day virtual event 'Bold Actions for Food as a Force for Good', building up to the UN Food Systems Summit to be held in New York in 2021. The event featured more than 300 organizations including government, farmers, private companies, young people and scientists.

Addressing food waste and rubbish in the Rhine Valley region
In Switzerland and the Rhine Valley, we participated in the 50th Earth Day with local start-up 'Ugly Fruits' on the need to combat food loss and waste and avoid overconsumption, as well as plastic waste reduction and perceptions on fruit and expected shelf life. In September, we took part in the World Clean Up Day with the motto "DSM Rhine Valley – Clean Up for Brighter Living". Colleagues from across the region cleaned up an area in Basel of rubbish and other discarded items.

Supporting education and engaging on climate in the US
We continued our support of the Union County College Foundation Close the Gap initiative, which provides scholarships to African American students. We also continued to underwrite the costs of two Fellows with the Global Health Corps. We led a group of 330 business leaders organized by Ceres in a virtual engagement with Senators and Congressmen on climate legislation. DSM North America is one of the 21 members of the CEO Climate Dialogue and cofounder of the Climate Solutions Working Group.

Management approach for material topics

In the following sections, we elaborate on the material topics defined in the Materiality matrix and describe how we manage these topics.

Environment

Climate & Energy

This topic addresses our own climate impacts in terms of greenhouse gas emissions, as well as developing and providing sustainable solutions that help others avoid emissions. This also includes our ability to mitigate and seize climate risks and opportunities, and to ensure operational resilience.

Management approach: Climate & Energy is a Focus Domain of DSM, and we manage this topic by improving our own carbon footprint, enabling our customers through innovative solutions and advocating actions toward a low-carbon future. This supports our efforts to manage the physical and transitional opportunities and risks relating to climate change mitigation and adaptation. We publicly disclose our impact and strategy via this Report, CDP and others.

For information on this topic, see:
Our approach to the Sustainable Development Goals
Strategy
Collaborative platforms and networks
Climate & Energy
Review of business

Resources & Circularity

Resources & Circularity refer to reducing the demand of sourcing from finite resources, and carefully managing the use of renewable natural resources in order to minimize stress on the environment. A transition to a circular economy, addressing closed-loop solutions with a focus on renewable and bio-based and recycled-based materials, is key to meeting the needs of current and future generations.

Management approach: Resources & Circularity is a Focus Domain of DSM, and we manage this topic by improving the value extracted from the limited resources that are available, enabling the transition to a circular and bio-based economy through our solutions and advocating a shift away from a linear to a circular and bio-based economy.

For information on this topic, see:
Our approach to the Sustainable Development Goals
Strategy
Collaborative platforms and networks
Resources & Circularity
Planet
Review of business

Nature & biodiversity

Nature & biodiversity refers to the protection of natural capital and ecosystems, including the variety and variability of life on earth and addressing issues such as land degradation, nature loss and ocean pollution.

Management approach: Nature & biodiversity is a global issue that is locally relevant, and that potentially has impact on our operational locations. The DSM Responsible Care Plan defines how we monitor and assess the impact of our operations on these locations. We support the ambitions of the Convention on Biological Diversity and we continue to explore the role the Natural Capital Protocol can play in supporting our decision making. Our position paper on Biodiversity can be found on the company website.

For information on this topic, see:
Nature & biodiversity
Biodiversity position paper

Water security

Water is essential to life and all ecosystems. As water is becoming a scarcer resource, both the quality and quantity of available water constitute a global issue that has local consequences that may extend from water scarcity to floods and storms.

Management approach: We are committed to the sustainable use of water. Our approach is defined in the DSM Responsible Care Plan and we aim to define contextual water reduction targets. Water is not a primary ingredient in our products, and we believe that water risks are local by nature, so we focus on local water risk assessments and thorough follow-up on these. We are a signatory to the UN Global Compact CEO Water Mandate and disclose our water management and strategy via CDP.

For information on this topic, see:
Water security

Social

Nutrition & Health

This topic refers to the transition to sustainable food systems within planetary boundaries that is needed to secure the future availability of food. An increasing global population and the impact of climate change will put greater strain on our ability to provide sufficient food that is also nutritionally complete — addressing issues including malnutrition, non-communicable diseases and obesity.

Management approach: Nutrition & Health is a Focus Domain of DSM, and we manage this topic by improving the health of our own workforce, and enabling healthy food systems through our Nutrition businesses, which target health and well-being, and our Biomedical business, which helps improve health outcomes for surgical patients.. We advocate for a change in food systems within planetary boundaries.

For information on this topic, see:
Our approach to the Sustainable Development Goals
Strategy
Collaborative platforms & networks
Review of business

Leadership & development

This topic refers to the continuous development of employees' skills through training and development programs, and the company's ability to generate commitment among employees to the organization and its goals.

Management approach: Leadership & development fuels the growth of our employees and leaders, which in turn enables our overall growth as an organization. Through our People & Organization strategy, we aim to reset the context for leadership to create an inspiring, empowering and inclusive environment for our people and our business.

For information on this topic, see:
Delivering on our P&O strategy
Our new People & Organization strategy

Occupational health & safety

Occupational health & safety addresses the company's ability to create and maintain a safe and healthy workplace environment that is free of injuries, fatalities, and illness (both chronic and acute).

Management approach: The occupational health, safety and well-being of all our employees and contractors is our highest priority. Our approach to safety is defined in the DSM Responsible Care Plan and is spearheaded by our Life Saving Rules. We apply an occupational health model based on prevention, primary care and promotion to support employee health.

For information on this topic, see:
Safety, health & well-being

Labor practices & human rights

This topic encompasses decent working conditions for DSM employees, suppliers and other partners across the value chain. It addresses subjects including freedom of association, non-discrimination, the prohibition of child labor and forced labor, and fair compensation.

Management approach: DSM has installed a cross-functional Human Rights Steering Committee and working group to manage our approach toward human rights, which is defined in our position paper. Our whistleblower policy (DSM Alert) is available for employees and external stakeholders to report potential violations of human rights.

For information on this topic, see:
Human rights
DSM Code of Business Conduct
Suppliers
Human Rights position paper
Whistleblower policy – DSM Alert

Internationalization & diversity

This topic revolves around equal opportunities, in particular ensuring that our company culture and hiring and promotion practices embrace the building of a diverse and inclusive workforce that reflects the makeup of local talent pools and its customer base.

Management approach: We focus our activities on increasing the representation of women and the nationality diversity of our executive population and management pipeline. In addition to gender and internationalization, we include the focus areas of disability, generations and LGBTQ+. These areas are supported by Employee Resource Groups: BLEND (race, ethnicity and national identity), Generations (age), Rainbow (LGBTQ+), Valuable (disability) and WIN (women and gender).

For information on this topic, see:
Inclusion & Diversity
Delivering on our P&O strategy

Business & Governance

Innovation

This topic refers to the company's technology capabilities and research & development investments to develop innovative, sustainable solutions.

Management approach: Our innovation and research & development capabilities support us in achieving our growth targets. Through collaborations and partnerships, we bring new thinking and new solutions into the company. Through our venturing activities, we invest in emerging innovative companies around the world.

For information on this topic, see:
Innovation Center

Business ethics & transparency

This topic addresses the company's approach to and public disclosure on ethical and fair business conduct, corporate governance and compliance. This includes taxation, privacy, bioethics, fraud, bribery & corruption, and fiduciary responsibilities.

Management approach: We take our responsibilities as a business seriously. Our approach to ethics and transparency is led by the DSM Code of Business Conduct and our Supplier Code of Conduct. DSM's tax position is consistent with the normal course of our business operations and reflects the corporate strategy as well as the geographic spread of our activities. It is available through our position paper. We transparently report on our business through this Report and our public statements.

For information on this topic, see:
DSM Code of Business Conduct
Corporate governance and risk management
Taxation position paper

Geopolitical shifts & (trade) dynamics

This topic refers to geopolitical shifts and dynamics such as political tensions and inequalities. It also includes the impact of trade policies and barriers.

Management approach: Through our partnerships and stakeholder engagement activities, we monitor topics relevant to our business. We identify risks and mitigating actions through our risk management approach, and apply standard business processes and practices to manage trade control compliance.

For information on this topic, see:
Collaborative platforms and networks
DSM Code of Business Conduct
Risk management

Advocacy, engagement & partnering

Engagement with our stakeholders is essential. Through these engagements, we share insights on relevant issues that arise from, and impact on, our business activities. Multi-stakeholder collaboration is essential for the achievement of the Sustainable Development Goals, in particular in developing countries through the development of suitable products and processes.

Management approach: We engage with our stakeholders to help define the topics that are material to our business and our reporting. We collaborate in platforms and networks that contribute to our purpose and align with our Focus Domains of Nutrition & Health, Climate & Energy, and Resources & Circularity.

For information on this topic, see:
Stakeholders
Stakeholder engagement

Cybersecurity

Preventing fraud and the unauthorized access to our networks, IT systems and data, while ensuring company and employee data protection.

Management approach: Cybersecurity is managed by Operations & Responsible Care. Awareness on cybersecurity is addressed through the Security e-learning covering our key security behaviors and the Cyber Fraud Awareness e-learning. Global, as well as targeted, phishing tests are regularly carried out to ensure our people stay alert.

For information on this topic, see:
Sustainability Governance Framework
DSM Code of Business Conduct

Digital transformation

Digital transformation refers to the application of digital technologies to all aspects of business and society.

Management approach: Our Data Analytics Center of Excellence and Digital Acceleration Group will support us in the acceleration of digital insights and solutions. Digital solutions also support and strengthen our customer relationships. We monitor and mitigate potential risks relating to digital through Group Risk Management. Our Information Security Office and Privacy Policy guide our approach toward the security of information assets.

For information on this topic, see:
People
Risk management
Customers

Product stewardship

Product stewardship addresses the incorporation of sustainability factors in characteristics of products provided by the company. It covers managing the lifecycle impacts of products along the value chain, such as sourcing, packaging, distribution, use-phase resource efficiency, and other environmental and social externalities.

Management approach: Our product stewardship statement describes our approach on this topic. We assess our products and are committed to have an action plan in place for substances of very high concern by the end of 2020. We take a risk-based approach to product stewardship and will use alternatives where feasible, and always where required. We also see the opportunities for safer products with fewer or no hazardous properties in the circular economy.

For information on this topic, see:
Product stewardship
Product stewardship on the company website

Consumer behavior & activism

Addressing changes in consumer behavior and awareness by manufacturing products that consider future needs of society and the environment.

Management approach: Consumer behavior & activism can be both a risk and an opportunity to the company. We recognize shifts in business models, industry and end-consumer behavior, and the ability to respond to changes in our emerging risks. We have shifted our innovation approach to be platform based, and have identified seven growth themes that align to our future strategic needs and support our growth ambitions. These themes align to major global societal, technological and environmental trends.

For information on this topic, see:
Innovation strategy
Innovation
Risk management

Taskforce on Climate-related Financial Disclosures (TCFD)

The TCFD recommendations are a set of voluntary, climate-related financial disclosures for use by companies to provide information to their stakeholders. We were among the first companies to commit to implementing, as fully as practicable, these recommendations as outlined in the TCFD's implementation path. The recommendations are structured around four elements – Governance, Strategy, Risk Management, and Metrics and Targets. This Report includes various disclosures relevant for the TCFD recommendations. To highlight this, for each TCFD theme reference is made to relevant sections.

Governance

Sustainability, including climate-related risks & opportunities, is a direct responsibility of the Managing Board. The Managing Board is supported in this by advice from our external Sustainability Advisory Board and reports on progress to the Supervisory Board, via its Sustainability Committee.

Our approach toward assessing and managing climate-related risks and opportunities is steered by our climate action agenda, containing key actions and deliverables that are owned by members of the Managing Board and Executive Committee. The Responsible Care Plan and our greenhouse gas (GHG) reduction program translate the climate action agenda into concrete operational programs managed by Operations & Responsible Care, Sourcing and business management. All of these are regularly discussed and reviewed during the MB/EC meetings.

Strategy

DSM has recognized climate change as a global megatrend for more than a decade. A changing climate, and related adaptation and mitigation efforts, will impact our company directly on our operations and indirectly, via shifts in our value chains and end-markets. This poses a risk to some of our current business while providing ample opportunities for growth.

Our portfolio and innovations seek to offer solutions to address changes coming from the shift to a low-carbon society. For example, we address transition risks through innovations such as methane-reducing ruminant solution Bovaer® and plant-based proteins such as CanolaPRO®, as well as bio-based Dyneema®, which has a reduced carbon footprint through switching to a bio-based raw material.

We are reducing our exposure to transition risks like carbon pricing and changing legislation through actively reducing GHG emissions from our own operations and in our value chain. Projects to underpin our Science Based Targets and ‘net zero by 2050‘ commitment are ongoing.

We believe that the implementation of our business strategy and delivery upon our GHG targets are an integral part of our resilience toward transition risks. We are piloting an approach to transition risk assessments against three scenarios to further stress-test this resilience.

We conducted an initial mapping of the exposure of our top 30 sites to test our physical resilience. The assessment was based on three scenarios (in line with our transition risk approach), two time horizons and five hazards. Further validation with the sites in question is underway and the assessment is currently also expanded to our value chain.

Risk Management

Climate-related risks are integrated into our regular risk management practices. As such, climate-related risks were identified both in top-down Corporate Risk Assessment process and the bottom up Letter of Representation process.

The outcome of these processes was climate-related risks being reported as ‘Emerging risk 2’ (Physical climate risks) and ‘Emerging risk 3’ (Transition climate risks). Several mitigating actions are coordinated at company level, such as the GHG reduction program and the CO2REDUCE supplier engagement program, where others remain the responsibility of the units.

To further standardize and improve our risk assessments, the approach of using multiple scenarios for physical and transition climate-risk assessments will be rolled out across the company. This will enable us to improve our disclosure of climate-related risk exposure and the relevant mitigating activities.

Targets and Metrics

We report our climate-related metrics and targets via this Report and the company website. Our Science Based Targets (SBT) are our key environmental targets within the Responsible Care Plan, supported by supplementary targets and programs. These targets are also the foundation toward our 'net zero by 2050' goal. Furthermore, we also report on avoided emissions, water, waste and other emissions.

We apply a carbon price of €50/t CO_2eq in our large investment decisions and in the Profit & Loss statements of the business groups for internal management reporting. We require all business growth projects to be carbon neutral, or else compensated for in the same business.

Climate-related metrics form part of the Long-Term Incentives of the Managing Board and executives.

SASB and WEF IBC mapping

We map our disclosures to other standards and frameworks to support our stakeholders who are using these. You can find how our disclosures map to the **Sustainability Accounting Standards Board**'s Chemicals Standard and the **WEF IBC** Stakeholder Capitalism metrics and disclosures below. SASB disclosures that are considered 'not material' have been omitted from the table.

Topic	Reference	Location and WEF IBC notes
Governing purpose	WEF IBC: Setting Purpose	Purpose
Quality of governing body	WEF IBC: Governance Body Composition	Governance framework
Stakeholder engagement	WEF IBC: Material issues impacting stakeholders	Materiality Management approach for material topics
Ethical behavior	WEF IBC: Anti-Corruption	Code of Business Conduct
	WEF IBC: Protected ethics advice and reporting mechanisms	Code of Business Conduct
Risk and opportunity oversight	WEF IBC: Integrating risk and opportunity into business process	Risk management Nutrition Materials Innovation
Climate change	WEF IBC: Greenhouse Gas (GHG) emissions SASB: RT-CH-110a.1 SASB: RT-CH-110a.2	Scope 1 + 2 GHG emissions Scope 3 GHG emissions
	WEF IBC: TCFD Implementation	Taskforce on Climate-related Financial Disclosures (TCFD)
Nature loss	WEF IBC: Land use and ecological sensitivity	Nature & biodiversity – only % of sites in or adjacent to protected sites is reported. IUCN Red List species is currently unknown.
Freshwater availability	WEF IBC: Water consumption and withdrawal in water-stressed areas SASB: RT-CH-140a.1 SASB: RT-CH-140a.3	Water security – water stress is only measured for 'non-OTC' water withdrawal
Air quality	SASB: RT-CH-120a.1	Other emissions to air

Topic	Reference	Location and WEF IBC notes
Energy management	SASB: RT-CH-130a.1	Energy transition
Waste management	SASB: RT-CH-150a.1	Waste
Safety & environmental stewardship of chemicals	SASB: RT-CH-410b.1 SASB: RT-CH-410b.2	Product stewardship Product stewardship on the company website
Genetically modified organisms	SASB: RT-CH-410c.1	Position paper on Industrial biotechnology on the company website
Dignity and equality	WEF IBC: Diversity and inclusion (%)	Inclusion and diversity
	WEF IBC: Pay equality (%)	Human rights Position paper on fair remuneration on the company website Gender pay gap is reported at company level. Additional analysis and validation is ongoing.
	WEF IBC: Wage level (%)	Human rights Position paper on fair remuneration on the company website DSM focuses on living wage instead of minimum wage.
	WEF IBC: Risk for incidents of child, forced, or compulsory labor	Sustainability statements – People We have found no instances of child labor within DSM, and child and forced labor are part of the Code of Business Conduct. Risk assessment is in progress for the Supply Chain. It is included in the Supplier Code of Conduct.
Health & well-being	WEF IBC: Health and safety (%) SASB: RT-CH-320a.1 SASB: RT-CH-320a.2	Safety, health & well-being We do not report on abseentism
Skills for the future	WEF IBC: Training provided (#, $)	Delivering on the six levers of our strategy We report on employee level only, as we do not consider it material to our management approach on training to break this number down
Safety incidents and response	SASB: RT-CH-540a.1 SASB: RT-CH-540a.2	Safety, health & well-being
Employment and wealth generation	WEF IBC: Absolute number and rate of employment	Sustainability statements – People We do not provide a breakdown using multiple angles as we do not consider it material to do so
	WEF IBC: Economic Contribution	Taxation position paper on the company website

Topic	Reference	Location and WEF IBC notes
		We do not report on the financial contributions received from governments
	WEF IBC: Financial Investment Contribution	Long-term strategy at a glance Key business figures at a glance Information on the DSM share
Innovation in better products and services	WEF IBC: Total R&D Expenses ($)	Innovation Center
Community and social vitality	WEF IBC: Total tax paid	Taxation position paper on the company website

Consolidated financial statements

Summary of significant accounting policies

Basis of preparation
DSM's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and the provisions of section 362-8 of Book 2 of the Dutch Civil Code. The accounting policies applied by DSM comply with IFRS and the pronouncements of the International Financial Reporting Interpretation Committee (IFRIC) effective at 31 December 2020.

The anticipated impact of the IBOR reform (phase 1, effective as of 2020, and phase 2, effective as of 2021) on the operations and results of DSM is limited. Furthermore, new or amended standards that are effective from 1 January 2020 also do not have a material effect on DSM's consolidated financial statements. In addition, new or amended standards effective after 1 January 2021 were neither adopted early, nor expected to have significant impact.

Consolidation including joint arrangements
The consolidated financial statements comprise the financial statements of Royal DSM and its subsidiaries (together 'DSM' or 'group'). As a parent company, DSM is exposed, or has right to, the variable returns from its involvement with its subsidiaries and has the ability to affect the returns through its power over the subsidiary. The financial data of subsidiaries are fully consolidated. Non-controlling interests in the group's equity and profit and loss are stated separately. Subsidiaries are consolidated from the acquisition date until the date on which DSM ceases to have control. From the acquisition date onwards, all intra-group balances and transactions and unrealized profits or losses from intra-group transactions are eliminated, with one exception: unrealized losses are not eliminated if there is evidence of an impairment of the asset transferred. In such cases, an impairment of the asset is recognized.

A joint arrangement is an entity in which DSM holds an interest and which is jointly controlled by DSM and one or more other venturers under a contractual arrangement. A joint arrangement can either be a joint venture where DSM and the other partner(s) have rights to the net assets of the arrangement, or a joint operation where DSM and the partner(s) have rights to the assets, and obligations for the liabilities of the arrangement. For joint ventures, the investment in the net assets is recognized and accounted for in accordance with the equity method. For a joint operation, assets, liabilities, revenues and expenses are recognized in the financial statements of DSM in accordance with the contractual entitlement or obligations of DSM.

Business combinations
Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, including liabilities incurred, measured at acquisition date fair value, and the amount of any non-controlling interest in the acquiree. Acquisition costs incurred are expensed.

As of the acquisition date, identifiable assets acquired, liabilities assumed and any non-controlling interest in the acquiree are recognized separately from goodwill. Identifiable assets acquired and the liabilities assumed are measured at acquisition date fair value. For each business combination, DSM elects whether it measures the non-controlling interest in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets. Any contingent consideration payable is measured at fair value at the acquisition date.

Segmentation
Segment information is presented in respect of the group's operating segments, about which separate financial information is available that is regularly evaluated by the chief operating decision maker. DSM has determined that Nutrition, Materials and the Innovation Center represent reportable segments in addition to Corporate Activities. The Managing Board decides how to allocate resources and assesses the performance of the clusters. Cluster performance is reported and reviewed down to the level of Adjusted EBITDA. The clusters are organized in accordance with the type of

products produced and the nature of the markets served. The same accounting policies that are applied for the consolidated financial statements of DSM are also applied for the operating segments. Prices for transactions between segments are determined on an arm's length basis. Segment results, assets and liabilities include items directly attributable to a segment as well as those that can reasonably and consistently be allocated. Selected information on a country and regional basis is provided in addition to the information about operating segments.

Foreign currency translation

The presentation currency of the group is the euro.

Each entity of the group records transactions and balance sheet items in its functional currency. Transactions denominated in a currency other than the functional currency are recorded at the spot exchange rates prevailing at the date of the transactions. Monetary assets and liabilities denominated in a currency other than the functional currency of the entity are translated at the closing rates. Exchange differences resulting from the settlement of these transactions and from the translation of monetary items are recognized in the income statement.

Non-monetary assets that are measured on the basis of historical costs denominated in a currency other than the functional currency continue to be translated against the rate at initial recognition and will not result in exchange differences.

On consolidation, the balance sheets of subsidiaries that do not have the euro as their functional currency are translated into euros at the closing rate. The income statements of these entities are translated into euros at the average rates for the relevant period. Goodwill paid on acquisition is recorded in the functional currency of the acquired entity. Exchange differences arising from the translation of the net investment in entities with a functional currency other than the euro are recorded in Other comprehensive income. The same applies to exchange differences arising from borrowings and other financial instruments insofar as those instruments hedge the currency risk related to the net investment. On disposal of an entity with a functional currency other than the euro, the cumulative exchange differences relating to the translation of the net investment are recognized in profit or loss.

Distinction between current and non-current

An asset (liability) is classified as current when it is expected to be realized (settled) within 12 months after the balance sheet date.

Offsetting

Financial assets and financial liabilities are offset and the net amount is presented in the balance sheet when DSM has a legal right to offset the amounts and intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

Intangible assets

Goodwill represents the excess of the cost of an acquisition over DSM's share in the net fair value of the identifiable assets and liabilities of an acquired subsidiary, joint venture or associate. Goodwill paid on acquisition of subsidiaries is included in intangible assets. Goodwill paid on acquisition of joint ventures or associates is included in the carrying amount of these entities. Goodwill recognized as an intangible asset is not amortized but tested for impairment annually, and when there are indications that the carrying amount may exceed the recoverable amount. A gain or loss on the disposal of an entity includes the carrying amount of goodwill relating to the entity sold.

Intangible assets acquired in a business combination are recognized at fair value on the date of acquisition and subsequently amortized over their expected useful lives, which vary from 4 to 20 years.

Separately acquired licenses, patents, drawing rights and application software are carried at historical cost less straight-line amortization and less any impairment losses. The expected useful lives vary from 4 to 15 years. Costs of software maintenance are expensed when incurred. Capital expenditure that is directly related to the development of application software is recognized as an intangible asset and amortized over its estimated useful life (5 to 8 years).

Research costs are expensed when incurred. Development expenditure is capitalized if the recognition criteria are met and if it is demonstrated that it is technically feasible to complete the asset; that the entity intends to complete the asset; that the entity is able to sell the asset; that the asset is capable of generating future economic benefits; that adequate resources are available to complete the asset; and that the expenditure attributable to the asset can be reliably measured. Development expenditure is amortized over the asset's useful life. Development projects under construction are included under 'Development projects'.

Property, plant and equipment

Property, plant and equipment are measured at cost less depreciation calculated on a straight-line basis and less any impairment losses. Interest during construction is capitalized when it meets the criteria of a qualifying asset. Expenditures relating to major scheduled turnarounds are capitalized and depreciated over the period up to the next turnaround.

Property, plant and equipment are systematically depreciated over their estimated useful lives. The estimated remaining lives of assets are reviewed every year, taking account of commercial and technological obsolescence as well as normal wear and tear. The initially assumed expected useful lives are in principle as follows: for buildings 10–50 years; for plant and machinery 5–15 years; for other equipment 4–10 years. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use or the sale of the asset. Any gain or loss arising on derecognition of the asset is recorded in profit or loss.

Leases

DSM recognizes a lease liability and a corresponding right-of-use asset at the commencement date of a lease. The lease liability is initially measured at the present value of the remaining lease payments that are not paid at the commencement date. In general, DSM splits the contractual consideration into a lease and a non-lease component based on their relative stand-alone prices. For vehicle leases, however, DSM applies the practical expedient not to make this split but rather accounts for the fixed consideration as a single lease component. If available, DSM applies the implicit interest rate in the contract to discount the remaining lease payments; only else, DSM uses the applicable incremental borrowing rate as the discount rate. In determining the incremental borrowing rate, DSM applies the practical expedient to use a single discount rate to portfolios of leases with reasonably similar characteristics. Over time, the lease liability is increased by the interest expense related to the unwinding of the lease liability and decreased by the lease payments made. The lease liability is remeasured when DSM reassesses or modifies the contractual terms and conditions, including indexation.

The corresponding right-of-use assets are measured at cost less any depreciation on a straight-line basis over the expected lease term, less any impairment losses, and adjusted for remeasurements of the lease liability. In line with the initially assumed expected useful life of the corresponding asset class within Property, plant and equipment, the minimum expected lease term for building leases is in principle 10 years. However, the contractual terms or specific circumstances could require applying the shorter non-cancellable period in determining the expected lease term. For vehicle leases, the expected lease term is set equal to the contractual term (4–5 years).

Payments related to short-term leases (leases with a term shorter than 12 months) are recognized on a straight-line basis in profit or loss.

Impairment of non-financial assets

When there are indications that the carrying amount of a non-financial asset (an intangible asset or an item of property, plant and equipment) may exceed the estimated recoverable amount (the higher of its value in use and fair value less costs to sell), the possible existence of an impairment loss is investigated. If an asset does not generate largely independent cash flows, the recoverable amount is determined for the cash generating unit (CGU) to which the asset belongs. In assessing the value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market interest rates and the risks specific to the asset.

When the recoverable amount of a non-financial asset is less than its carrying amount, the carrying amount is impaired to its recoverable amount and an impairment charge is recognized in profit or loss. An impairment loss is reversed when there has been a change in estimate that is relevant for the determination of the asset's recoverable amount since the last impairment loss was recognized. Impairment losses for goodwill are never reversed.

Associates and joint ventures

An associate is an entity over which DSM has significant influence but no control or joint control, usually evidenced by a shareholding that entitles DSM to between 20% and 50% of the voting rights. A joint venture is an entity over which DSM has joint control and is entitled to its share of the net assets and liabilities. Investments in associates and joint ventures are accounted for by the equity method, which involves recognition in the income statement of DSM's share of the associate's or joint venture's profit or loss for the year determined in accordance with the accounting policies of DSM. Any other results at DSM in relation to associated companies are recognized under Other results related to associates and joint ventures. DSM's interest in an associate or joint venture is carried in the balance sheet at its share in the net assets of the associate or joint venture together with goodwill paid on acquisition, less any impairment loss.

When DSM's share in the loss of an associate or joint venture exceeds the carrying amount of that entity, the carrying amount is reduced to zero. No further losses are recognized, unless DSM has responsibility for obligations relating to the entity.

Financial instruments

Financial instruments are contractual rights and obligations resulting in an inflow or outflow of financial assets or the issue of equity instruments. They are initially measured at fair value plus any directly attributable transaction costs. Transaction costs for financial instruments assigned to the category 'At fair value through profit and loss' are recognized directly in the income statement. Subsequent measurement is based on the classification of financial instruments defined in IFRS 9.

Non-derivative financial instruments

DSM initially recognizes financial assets and financial liabilities on the date when DSM becomes a party to the contractual provisions of the instrument. DSM derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the rights to receive the contractual cash flows in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred, or when DSM neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control over the transferred asset. DSM derecognizes a financial liability when its contractual obligations are discharged or canceled, or expire.

Other financial assets

Other financial assets comprise loans to associates and joint ventures, other participating interests, other receivables and other deferred items.

DSM's business model objective for loans is 'held-to-collect contractual cash flows only'. Held to collect loans, other receivables and other deferred items, for which the contractual cash flows consist solely of principal and interest, are measured at amortized cost, using the effective interest method, which generally corresponds to the nominal value, less an adjustment for expected credit loss. Upon disposal of these assets the gain or loss is recognized in profit or loss.

Other receivables, for which the contractual cash flows are not solely principal and interest, are recognized at fair value, with changes in fair value recognized in profit or loss.

Other participating interests comprise equity interests in entities in which DSM has no significant influence; these are accounted for as assets at fair value through profit or loss, or DSM uses the irrevocable election to present the fair value changes in other comprehensive income (Fair value reserve) instead of profit or loss. These fair value changes in OCI will not be recycled through profit and loss upon disposal of the interest. All dividends received will be presented in profit or loss.

Expected credit loss

All financial assets measured at amortized cost and fair value through other comprehensive income include an allowance for expected credit loss as of the date of initial recognition of the asset. Expected credit losses are measured as the present value of the difference between the cash flows due to DSM, and the cash flows that DSM expects to receive.

Expected credit losses, are reassessed over time and recognized in the income statement. Loss allowances for trade receivables are always measured at lifetime expected credit loss.

Inventories

Inventories are stated at the lower of cost and net realizable value. The first in, first out (FIFO) method of valuation is used unless the nature of the inventories requires the use of a different cost formula, in which case the weighted average cost method is used. The cost of intermediates and finished goods includes directly attributable costs and related production overhead expenses. Net realizable value is determined as the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale. Products whose manufacturing cost cannot be calculated because of joint cost components are stated at net realizable value after deduction of a margin for selling and distribution efforts.

Current receivables

Current receivables, which include trade receivables, income tax receivables and other current receivables, for which the contractual cash flows are solely principal and interest are initially recognized at fair value plus any directly attributable transaction costs.

Subsequent to initial recognition, they are measured at amortized cost using the effective interest method, which generally corresponds to nominal value, less an adjustment for expected credit loss.

Current investments

Current investments are initially recognized at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, they are measured at amortized cost using the effective interest method. Deposits with banks with a maturity between 3 and 12 months are classified as current investments.

Cash and cash equivalents

Cash and cash equivalents comprise cash at banks and in hand and deposits held at call with banks with a maturity of less than three months at inception. Bank overdrafts are included in current liabilities. Included in cash and cash equivalents are investments in money market funds that do not meet the SPPI (Solely Payments of Principal & Interest) criterion but are held to meet short-term cash demand. Cash and cash equivalents are measured at fair value through profit and loss, or amortized cost.

Non-current assets and disposal groups held for sale

Non-current assets and disposal groups (assets and liabilities relating to an activity that is to be sold) are classified as ‘held for sale’ if their carrying amount is to be recovered principally through a sales transaction rather than through continuing use. The reclassification takes place when the assets are available for immediate sale and the sale is highly probable. These conditions are usually met as from the date on which a letter of intent or agreement to sell is ready for signing. Non-current assets and disposal groups held for sale are measured at the lower of carrying amount and fair value less costs to sell. Non-current assets held for sale are not depreciated or amortized. For transparency, non-current assets and disposal groups that will contribute to joint ventures are reported separately from other assets and liabilities held for sale.

Discontinued operations

Discontinued operations comprise those activities that were disposed of during the period or which were classified as held for sale at the end of the period and represent a separate major line of business or geographical area that can be clearly distinguished for operational and financial reporting purposes.

Royal DSM Shareholders’ equity

DSM’s ordinary shares and cumulative preference shares are classified as Royal DSM Shareholders’ equity. This is the case for the latter, as there is no mandatory redemption, and distributions to the shareholders are at the discretion of DSM. The price paid for repurchased DSM shares (treasury shares) is deducted from Royal DSM Shareholders’ equity until the shares are canceled or reissued. Treasury shares are presented in the treasury share reserve. When treasury shares are sold or reissued, the amount received is recognized as an increase in equity. Dividend to be distributed to holders of cumulative preference shares is recognized as a liability when the Supervisory Board approves the proposal for profit distribution.

Dividend to be distributed to holders of ordinary shares is recognized as a liability when the Annual General Meeting of Shareholders approves the profit appropriation.

Provisions

Provisions are recognized when all of the following conditions are met: (1) there is a present legal or constructive obligation as a result of past events, (2) it is probable that a transfer of economic benefits will settle the obligation, and (3) a reliable estimate can be made of the amount of the obligation.

The probable amount required to settle long-term obligations is discounted if the effect of discounting is material. Where discounting is used, the increase in the provision due to the passage of time is recognized as financial expense.

Borrowings

Borrowings are not held for trading and are initially recognized at fair value of the proceeds received, net of transaction costs. Subsequently, borrowings are stated at amortized cost using the effective interest method. Measurement at amortized cost includes any discount or premium on the borrowing. Interest expenses are recorded as financial expense in profit or loss.

If the interest rate risk relating to a long-term borrowing is hedged through a fair value hedge, and the hedge is effective, the carrying amount of the long-term loan is adjusted for changes in fair value of the interest component of the hedged loan.

Other current liabilities

Other current liabilities are measured at amortized cost, which generally corresponds to the nominal value.

Revenue for contracts with customers

Revenue from contracts with customers is recognized by identifying the contract and its performance obligations as well as determination and allocation of the transaction price to these performance obligations. At DSM, revenue related to the sale of goods is recognized in the income statement when the performance obligation is satisfied. This is at the point in time when transfer of control of the goods passes to the buyer. Revenue recognized is measured at the fair value of the contractual transaction price allocated to the performance obligation that is satisfied.

Income coming from the rendering of services is recognized when the service, i.e., the performance obligation, has been performed. The revenue recognized is measured at the fair value of the contractual transaction price allocated to the performance obligation that is satisfied.

Net sales represent the invoice value less estimated rebates, cash discounts, and indirect taxes.

Income related to the sale or licensing of technologies or technological expertise is recognized in the income statement either at a point in time or over time, depending on when the contractually identified performance obligations are satisfied. Performance obligations related to license income include the transfer of rights and obligations associated with those technologies.

License income is reported in Net sales when the income is part of the ordinary and recurring activities of the business and, if this is not the case, it is reported in Other operating income.

Interest income is recognized on a time-proportionate basis using the effective interest method.

Dividend income is recognized when the right to receive payment is established.

Government grants

Government grants are recognized at their fair value if there is reasonable assurance that the grant will be received and all related conditions will be complied with. Cost grants are recognized as income over the periods necessary to match the grant on a systematic basis to the cost that it is intended to compensate. If the grant is an investment grant, its fair value is initially recognized as deferred income in Other non-current liabilities and then released to profit or loss over the expected useful life of the relevant asset.

Share-based compensation

Performance shares and restricted share units are granted free of charge to eligible staff and generally vest after three years on the achievement of previously determined target vesting conditions. The cost of performance shares and restricted share units is measured by reference to the fair value of the DSM shares on the date on which the performance shares and restricted share units were granted and is recognized in profit or loss (Employee benefit costs) during the vesting period, together with a corresponding increase in equity. Vesting conditions other than market conditions are taken into account by adjusting the number of equity instruments, so that the amount recognized during the vesting period in employee benefit costs is based on the number of equity instruments that eventually vest.

The costs of option plans are measured by reference to the fair value of the options on the date on which the options are granted. The fair value is determined using the Black-Scholes model, taking into account market conditions linked to the price of the DSM share. The costs of these options are recognized in profit or loss (Employee benefit costs) during the vesting period, together with a corresponding increase in Equity in the case of equity-settled options or Other non-current liabilities in the case of cash-settled options. No expense is recognized for options that do not ultimately vest, except for options where vesting is conditional upon a market condition.

Emission rights

DSM is subject to legislation encouraging reductions in greenhouse gas emissions and has been awarded emission rights (principally CO_2 emission rights) in a number of jurisdictions. Emission rights are reserved for meeting delivery obligations and are recognized at cost (usually zero). Revenue is recognized when surplus emission rights are sold to third parties. When actual emissions exceed the emission rights available to DSM, a liability is recognized for the expected additional costs.

Alternative performance measures (APMs)

DSM uses Alternative performance measures to present and discuss DSM's financial results. To arrive at these APMs, adjustments are made for material items of income and expense arising from circumstances such as acquisitions and divestments, restructuring, impairments and other events.

Other APM adjusting events include site closure costs, environmental cleaning, litigation settlements or other non-operational (contractual) arrangements. Other than items related to acquisition and integration costs incurred in the first year from the acquisition date (including non-recurring inventory value adjustments) as well as adjustments due to previously recognized APM adjusting events, the threshold is €10 million.

Income tax

Income tax expense is recognized in the income statement except to the extent that it relates to an item recognized directly in Other comprehensive income or Shareholders' equity.

Current tax is the expected tax payable or receivable on the taxable income for the year, using tax rates enacted at the balance sheet date, and any adjustment to tax payable with respect to previous years. The current tax position also reflects any uncertainty related to income taxes. Current tax assets and liabilities are offset only if certain criteria are met.

Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the carrying amount of assets and liabilities and their tax base. Deferred tax assets and liabilities are measured at the tax rates that have been enacted or substantially enacted at the balance sheet date, and reflect any uncertainty related to income taxes and are expected to apply when the related deferred tax assets are realized or the deferred tax liabilities are settled. Deferred tax assets, including assets arising from losses carried forward and tax credits, are reassessed over time and recognized to the extent that it is probable that future taxable profits will be available against which the deductible temporary differences and unused tax losses can be utilized. Deferred tax assets and liabilities are stated at nominal value.

Deferred taxes are not provided for the following temporary differences: the initial recognition of goodwill, the initial recognition of assets or liabilities that affect neither accounting nor taxable profit, and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. Deferred tax assets and deferred tax liabilities are offset and presented net when there is a legally enforceable right to offset, and the assets and liabilities relate to income taxes levied by the same taxation authority.

Derivatives

Derivatives are measured at fair value at initial recognition and subsequent changes are recognized in profit or loss, unless hedge accounting is applied.

Hedging

DSM uses derivatives such as foreign currency forward contracts and interest rate swaps to hedge risks associated with foreign currency and interest rate fluctuations. In addition, DSM may use commodity swap or forward contracts to hedge risks associated with exposure to fluctuations in commodity prices.

Derivatives used as hedge instrument are recognized in the balance sheet at fair value and changes in fair value are recognized in profit or loss unless cash flow hedge accounting or net investment hedge accounting is applied.

Cash flow hedge

Changes in the fair value of derivatives designated and qualifying as cash flow hedges are recognized in Other comprehensive income (Hedging reserve) to the extent that the hedge is effective. Upon recognition of the related asset or liability, the cumulative gain or loss is transferred from the hedging reserve and included in the carrying amount of the hedged item if it is a non-financial asset or liability. Any ineffective portion of the changes of the fair value of the derivative is recognized immediately in profit and loss. If the forecast transaction is no longer expected to occur, the hedge no longer meets the criteria for hedge accounting, the hedging instrument expires or is sold, terminated or exercised, or the designation is revoked, then hedge accounting is discontinued prospectively. If the forecast transaction is no longer expected to occur, then the amount accumulated in equity is reclassified to profit or loss. If the hedged item is a financial asset or liability, the gain or loss is transferred to profit or loss.

Net investment hedge

Changes in the fair value of derivatives designated and qualifying as net investment hedges are recognized in Other comprehensive income (Translation reserve) to the extent that the hedge is effective and the change in fair value is caused by changes in currency exchange rates. Accumulated gains and losses are released from Other comprehensive income and are included in profit or loss when the net investment is disposed of. Changes in the fair value of derivatives designated and qualifying as fair value hedges are immediately recognized in the income statement, together with any changes in the fair value of the hedged assets or liabilities attributable to the hedged risk.

Pensions and other post-employment benefits

For DSM's defined contribution plans, the obligations are limited to the payment of contributions, which are recognized as Employee benefit costs.

For defined benefit plans, the aggregate of the value of the defined benefit obligation and the fair value of plan assets for each plan is recognized as a net defined benefit liability or asset. Defined benefit obligations are determined using the projected unit credit method. Plan assets are recognized at fair value. If the fair value of plan assets exceeds the present value of the defined benefit obligation, a net asset is only recognized to the extent that the asset is available for refunds to the employer or for reductions in future contributions to the plan. Defined benefit pension costs consist of three elements: service costs, net interest, and remeasurements. Service costs are part of Employee benefit costs and consist of current service costs. Past service costs and results of plan settlements are included in Other operating income or expense. Net interest is part of Financial income and expense and is determined on the basis of the value of the net defined benefit asset or liability at the start of the year, and on the interest on high-quality corporate bonds. Remeasurements are actuarial gains and losses, the return (or interest cost) on net plan assets (or liabilities) excluding amounts included in net interest and changes in the effect of the asset ceiling. These remeasurements are recognized in Other comprehensive income as they occur and are not recycled through profit or loss at a later stage.

Consolidated financial statements

Consolidated income statement

x € million	Notes	2020	2019
Continuing operations			
Net sales	5	8,106	7,998
Cost of sales	5	(5,330)	(5,234)
Gross margin		2,776	2,764
Marketing and sales	5	(1,149)	(1,154)
Research and development	5	(398)	(295)
General and administrative	5	(469)	(478)
Other operating income	5	102	142
Other operating expense	5	(200)	(107)
Operating profit		662	872
Financial income	6	44	30
Financial expense	6	(111)	(122)
Profit before income tax expense		595	780
Income tax expense	7	(106)	(145)
Share of the profit of associates and joint ventures	10	(64)	(9)
Other results related to associates and joint ventures	10	32	63
Net profit from continuing operations		457	689
Net profit from discontinued operations	3	51	75
Net profit for the year		508	764
Of which:			
- Attributable to non-controlling interests	17	2	6
- Dividend on cumulative preference shares	16	7	8
- Available to holders of ordinary shares	16	499	750
Earnings per share (EPS) total (in €):	2		
- Net basic EPS		2.91	4.27
- Net diluted EPS		2.89	4.24
Earnings per share (EPS) continuing operations (in €):	2		
- Net basic EPS		2.64	3.85
- Net diluted EPS		2.62	3.83

The 2019 figures have been re-presented due to discontinued operations.

The accompanying notes are an integral part of these consolidated financial statements.

See Note 2 Alternative performance measures for the reconciliation to Adjusted EBITDA of €1,534 million (2019: €1,551 million) and other adjusted IFRS performance measures.

Consolidated statement of comprehensive income

x € million	Notes	2020	2019
Net profit for the year		508	764
Other comprehensive income			
Remeasurements of defined benefit pension plans	24	(24)	(24)
Fair value changes in Other participating interests	11	106	(21)
Transfer of fair value of other participating interest to retained earnings		-	4
Exchange differences on translation of foreign operations relating to the non-controlling interests	17	(4)	2
Tax related items that will not be reclassified to profit or loss		(4)	9
Items that will not be reclassified to profit or loss		74	(30)
Exchange differences on translation of foreign operations	16		
- Change for the year		(451)	134
- Reclassification adjustment to the income statement		-	(9)
Hedging reserve	16	-	-
- Change for the year		40	(18)
- Reclassification adjustment to the income statement		20	66
Equity accounted investees - share of Other comprehensive income		(2)	1
Tax related items that may subsequently be reclassified to profit or loss		(4)	(4)
Items that may subsequently be reclassified to profit or loss		(397)	170
Total comprehensive income		185	904
Of which:			
- Attributable to non-controlling interests	17	(2)	8
- Available to equity holders of Koninklijke DSM N.V.	16	187	896

Consolidated balance sheet at 31 December

x € million	Notes	2020	2019
Assets			
Intangible assets	8	4,455	3,515
Property, plant and equipment	9	3,774	4,040
Deferred tax assets	7	239	217
Share in associates and joint ventures	10	93	155
Derivatives	23	61	27
Other financial assets	11	317	265
Non-current assets		**8,939**	**8,219**
Inventories	12	1,879	2,019
Trade receivables	13	1,391	1,592
Income tax receivables	13	35	61
Other current receivables	13	62	45
Derivatives	23	48	19
Current investments	14	43	688
Cash and cash equivalents	15	871	800
Assets held for sale	3	1,096	-
Current assets		**5,425**	**5,224**
Total		**14,364**	**13,443**
Equity and liabilities			
Shareholders' equity		7,399	7,731
Non-controlling interests	17	88	104
Equity	16	**7,487**	**7,835**
Deferred tax liabilities	7	433	296
Employee benefit liabilities	24	414	413
Provisions	18	123	120
Borrowings	19	3,479	2,464
Derivatives	23	1	7
Other non-current liabilities	20	163	145
Non-current liabilities		**4,613**	**3,445**
Employee benefit liabilities	24	42	43
Provisions	18	61	48
Borrowings	19	107	189
Derivatives	23	13	18
Trade payables	21	1,218	1,345
Income tax payables	21	53	42
Other current liabilities	21	516	478
Liabilities held for sale	3	254	-
Current liabilities		**2,264**	**2,163**
Total		**14,364**	**13,443**

Consolidated statement of changes in equity (Note 16)

x € million	Share capital	Share premium	Treasury shares	Other reserves	Retained earnings	Total	Non-controlling interests	Total Equity
Balance at 1 January 2019	338	489	(371)	(55)	7,381	7,782	33	7,815
Dividend	-	-	-	-	(414)	(414)	(4)	(418)
Options / performance shares granted	-	-	-	34	-	34	-	34
Options / performance shares vested / canceled	-	-	-	(36)	36	-	-	-
Reissued shares	-	-	335	-	(11)	324	-	324
Acquisition of NCI without a change in control	-	-	-	-	(13)	(13)	9	(4)
Acquisition (divestment) of subsidiary with NCI	-	-	-	-	-	-	57	57
Repurchase of shares	-	-	(869)	-	-	(869)	-	(869)
Transfer	-	-	-	4	(4)	-	-	-
Other	-	-	-	1	(10)	(9)	1	(8)
Total comprehensive income	-	-	-	148	748	896	8	904
Balance at 31 December 2019	338	489	(905)	96	7,713	7,731	104	7,835
Dividend	-	-	-	-	(423)	(423)	(6)	(429)
Options / performance shares granted	-	-	-	29	-	29	-	29
Options / performance shares vested / canceled	-	-	-	(39)	39	-	-	-
Reissued shares	-	-	238	-	(32)	206	-	206
Acquisition of NCI without a change in control	-	-	-	-	(22)	(22)	(10)	(32)
Acquisition (divestment) of subsidiary with NCI	-	-	-	-	-	-	(1)	(1)
Repurchase of shares	-	-	(309)	-	-	(309)	-	(309)
Transfer	-	-	-	(30)	30	-	-	-
Other	-	-	-	(3)	3	-	3	3
Total comprehensive income	-	-	-	(296)	483	187	(2)	185
Balance at 31 December 2020	338	489	(976)	(243)	7,791	7,399	88	7,487

Consolidated cash flow statement (Note 26)

x € million	2020	2019
Operating activities		
Net profit for the year	508	764
Share of the profit of associates and joint ventures (including discontinued operations)[1]	32	(54)
Income tax (including discontinued operations)[1]	129	152
Profit before income tax expense (including discontinued operations)[1]	669	862
Financial income and expense (including discontinued operations)[1]	67	92
Operating profit (including discontinued operations)[1]	736	954
Depreciation, amortization and impairments (including discontinued operations)[1]	740	632
EBITDA (including discontinued operations)[1]	1,476	1,586
Adjustments for:		
- (Gain) or loss from disposals	4	(4)
- Acquisition / divestment related in EBITDA	55	13
- Change in provisions	10	26
- Defined benefit plans	(13)	(39)
Adjustments for EBITDA	56	(4)
Income tax received	11	9
Income tax paid	(135)	(149)
Share-based compensation	29	34
Contract settlements and other non-cash items	13	(70)
Other	19	(8)
Adjustments for non-EBITDA	(63)	(184)
Operating cash flow before changes in working capital	**1,469**	**1,398**
Changes in operating working capital:		
Inventories	(36)	114
Trade receivables	(4)	59
Trade payables	48	(121)
Changes in inventories, trade receivables and trade payables	8	52
Changes in non-operating working capital	17	(65)
Changes in working capital	25	(13)
Cash provided by operating activities	**1,494**	**1,385**

1 The Consolidated cash flow statement includes an analysis of all cash flows in total, therefore including both continuing and discontinued operations. For the amounts related to discontinued operations split by activities and a reconciliation of profit from continuing operations to total, including discontinued operations, see Note 3 Change in the scope of the consolidation.

Consolidated cash flow statement (Note 26) continued

x € million	2020	2019
Cash provided by operating activities	**1,494**	**1,385**
Investing activities		
Capital expenditure for:[1]		
- Intangible assets	(151)	(107)
- Property, plant and equipment	(458)	(520)
Payments regarding drawing rights	(17)	(14)
Proceeds from disposal of property, plant and equipment	1	6
Acquisition of subsidiaries and associates	(1,533)	(556)
Disposal of subsidiaries, businesses and associates	(2)	37
Additions to fixed-term deposits	(468)	(1,195)
Withdrawal from fixed-term deposits	1,114	1,783
Interest received	8	10
Other financial assets:		
- Capital payments and acquisitions	(20)	(53)
- Dividends received	5	75
- Additions to loans granted	(9)	(17)
- Repayment of loans granted	1	25
- Proceeds from disposals	47	1
Cash from / (used in) investing activities	**(1,482)**	**(525)**
Financing activities		
Capital payments from / to non-controlling interests	(30)	1
Loans taken up	1,123	7
Repayment of loans	(268)	(302)
Payments of lease liabilities	(55)	(53)
Change in debt to credit institutions	(95)	57
Dividend paid	(289)	(291)
Interest paid	(54)	(57)
Proceeds from reissued treasury shares	63	180
Repurchase of shares	(309)	(869)
Other	(3)	(5)
Cash (used in) / from financing activities	**83**	**(1,332)**
Change in cash and cash equivalents	**95**	**(472)**
Cash and cash equivalents at 1 January	800	1,281
Exchange differences relating to cash held	(24)	(9)
Cash and cash equivalents at 31 December	**871**	**800**

1 An amount of €24 million included in capital expenditure was funded by customers (2019: €18 million); all lease payments are recognized as cash used in financing activities.

Notes to the consolidated financial statements of Royal DSM

1 General information

Unless stated otherwise, all amounts are in € million.

A list of DSM participations has been filed with the Chamber of Commerce (Netherlands) and is available from the company upon request. The list can also be downloaded from the company website.

The preparation of financial statements requires estimates and judgments that affect the reported amounts of assets and liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the date of the financial statements.

In addition to DSM's significant accounting policies in the previous section, the policies that management considers to be the most important for the presentation of the financial condition and results of DSM's operations are further discussed in the relevant Notes. The same holds for the issues that require management judgments or estimates about matters that are inherently uncertain. Management cautions that future events often vary from forecasts and that estimates routinely require adjustment. Areas of judgment that have the most significant effect on the amounts recognized in the financial statements relate to the categorization of material items in profit or loss as 'APM adjustments', therefore impacting the alternative performance measures, and the identification of cash generating units (CGUs), impacting goodwill impairment testing.

Key assumptions and estimates that need to be made by management relate to the useful lives of non-current assets (Notes 8 and 9), the establishment of provisions for restructuring costs, environmental costs (Note 18) and retirement and other post-employment benefits (Note 24), the recognition and measurement of income taxes (Note 7), the determination of fair values for financial instruments (Note 23) and for share-based compensation (Note 27). The uncertainty concerning the actual outflows of provisions relates to both the amounts and the timing of potential future events.

Furthermore, impairment testing of goodwill, intangible assets and development projects requires judgments by management. Apart from the determination of CGUs, the estimation of future cashflows, growth rates, discount rates and fair values minus costs of disposal require judgement as well (Notes 2, 8, 9 and 10). Significant judgment is also required for the determination of the fair value of assets acquired, and liabilities assumed in business combinations (Note 3) and for the valuation of drawing rights (Note 8). For drawing rights, the most important judgments relate to the estimation of the required maintenance and replacement outlays. Estimates are based on historical quoted market prices, experience and assumptions that are considered reasonable under the circumstances.

For lease contracts under IFRS 16 that include renewal options, determining the lease term involves judgment based on the underlying asset class, past practices and current business outlooks. The assessment of these renewal options affects the lease term of these contracts and, in turn, the recognized lease liabilities and the corresponding right-of-use assets.

Exchange rates

The currency exchange rates that were used in preparing the consolidated financial statements are listed below for the most important currencies.

1 euro =	Exchange rate at balance sheet date		Average exchange rate	
	2020	2019	**2020**	2019
US dollar	1.23	1.12	1.14	1.12
Swiss franc	1.08	1.09	1.07	1.11
Brazilian real	6.37	4.52	5.88	4.41
Chinese renminbi	8.02	7.82	7.87	7.73

Presentation of consolidated income statement

DSM presents expenses in the consolidated income statement in accordance with their function. This allows the presentation of gross margin on the face of the income statement, which is a widely used performance measure in the industry. The composition of the costs allocated to the individual functions is explained below.

Cost of sales encompasses all manufacturing costs (including raw materials, employee benefits, and depreciation and amortization) related to goods and services captured in net sales. These are measured at their actual cost based on FIFO, or weighted average cost.

Marketing & Sales relates to the selling and marketing of goods and services, and also includes all costs that are directly related to the sale of goods, but are not originated by the manufacturing of the goods (e.g., outbound freight).

Research & Development consists of:

- Research, which is defined as original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding
- Development, which is defined as the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use

General and administrative relates to the strategic and governance role of the general management of the company as well as the representation of DSM as a whole in the financial, political or business community. It also relates to business support activities of staff departments that are not directly related to the other functional areas.

2 Alternative performance measures

In presenting and discussing DSM's financial position, operating results and net results, management uses certain Alternative performance measures not defined by IFRS. These Alternative performance measures (APMs) should not be viewed in isolation as alternatives to the equivalent IFRS measures and should be used as supplementary information in conjunction with the most directly comparable IFRS measures. Alternative performance measures do not have standardized meaning under IFRS and therefore may not be comparable to similar measures presented by other companies.

To provide clear reporting on the developments of the business, APM adjustments, which represent material items of income or expense, are made. These adjustments impact the EBIT(DA), operating profit, net profit, ROCE, cash provided by operating activities and EPS. A reconciliation of the Alternative performance measures to the most directly comparable IFRS measures can be found in the table Alternative performance measures.

The APM adjustments to net profit, as included in the APMs, can be specified as follows:

	2020	2019
APM Adjustments (continuing operations)		
- Acquisitions/divestments	52	13
- Restructuring	103	64
- Other	11	17
- Impairments of PPE and intangible assets	101	23
- Income tax related to adjustments	(54)	(26)
- Adjustments to result from associates and joint ventures	41	(28)
Total APM adjustments (income)/expense	**254**	**63**

2020

The APM adjustments in 2020 are listed below:

- Acquisition and divestment costs of €52 million relate mainly to the acquisition of Glycom, CSK and Erber Group
- Restructuring costs of €103 million relate to restructuring projects (mainly Fit for Growth within Nutrition and Agile to grow within Materials) together with the redundancy schemes associated with the dismissal of employees and costs of termination of contracts
- Impairments of property, plant and equipment (PPE) and intangible assets of €101 million and the other APM adjustment of €11 million relates to an impairment of €56 million of DSM Bio-based Products & Services, owing to an expected subdued market outlook for biofuels which led to insufficient expected future cash flows and an impairment of €56 million relating to DSM Advanced Solar on its solar assets following the sale to Covestro AG
- APM adjustments to the result from associates and joint ventures of €41 million mainly relate to the joint venture POET-DSM, following the decision to mothball the second-generation bio-ethanol plant in Emmetsburg (Iowa, USA) and includes DSM's equity-accounted share in the impairment loss recognized by the joint venture (€74 million), the impairment of the associated intangible assets (€11 million) and the related tax benefit (-€28 million)

2019

The APM adjustments in 2019 are listed below:

- Acquisition and divestment costs of €13 million relate mainly to the acquisition of Yimante, Andre Pectin and CSK
- Restructuring costs of €64 million relate to project costs of the restructuring projects together with the redundancy schemes associated with the dismissal of employees and costs of termination of contracts
- The other APM adjustment of €17 million relates to the provision for soil cleaning within Corporate Activities
- Impairments of property, plant and equipment (PPE) and intangible assets of €23 million relate mainly to a development project of DSM Nutritional Products and the impairment of an investment project within DSM Food Specialties
- APM adjustments to the result from associates and joint ventures of €28 million mainly relate to the step-up to the fair value of the associate Andre Pectin prior to the acquisition

Alternative performance measures (continuing operations)

	2020	2019
Operating profit	662	872
Depreciation, amortization and impairments	706	585
EBITDA	1,368	1,457
APM adjustments to EBITDA:		
- Acquisitions/divestments	52	13
- Restructuring	103	64
- Other	11	17
Total APM adjustments	166	94
Adjusted EBITDA	1,534	1,551
Operating profit	662	872
APM adjustments to Operating profit:		
- APM adjustments to EBITDA	166	94
- Impairments of PPE and Intangible assets	101	23
Total APM adjustments	267	117
Adjusted operating profit	929	989
Net profit from continuing operations	457	689
APM adjustments to:		
- Operating profit	267	117
- Result relating to associates/joint ventures	41	(28)
Income tax related to APM adjustments	(54)	(26)
Total APM adjustments	254	63
Adjusted net profit from continuing operations	711	752
Profit attributable to non-controlling interests	2	(5)
Dividend on cumulative preference shares	(7)	(8)
Adjusted net profit from continuing operations available to holders of ordinary shares	706	739

Below table reflects the earnings per share (EPS) related to continuing operations and to total earnings including discontinued operations.

in €	2020		2019	
	Continuing operations	Total	Continuing operations	Total
Earnings per share (EPS)				
Average number of ordinary shares outstanding (x 1,000)		171,536		175,731
Effect of dilution due to share options (x 1,000)		896		1,088
Adjusted average number of ordinary shares outstanding (x 1,000)		172,432		176,819
Net profit available to holders of ordinary shares	452	499	677	750
Adjusted net profit available to holders of ordinary shares	706	760	739	815
Net basic EPS	2.64	2.91	3.85	4.27
Net diluted EPS	2.62	2.89	3.83	4.24
Adjusted net basic EPS	4.12	4.43	4.21	4.64
Adjusted net diluted EPS	4.09	4.41	4.18	4.61

Alternative performance measures

	2020	2,019
Capital employed		
Intangible assets	4,455	3,515
Property, plant and equipment	3,774	4,040
Investment grants / drawing rights	(112)	(96)
Inventories	1,879	2,019
Current receivables	1,488	1,698
Current liabilities	(1,787)	(1,865)
Included discontinued operations	-	(883)
Capital employed at 31 December	**9,697**	**8,428**
Average capital employed		
Capital employed at 1 January	8,428	7,527
Capital employed at 31 March	8,422	8,021
Capital employed at 30 June	9,024	7,850
Capital employed at 30 September	9,018	8,415
Capital employed at 31 December	9,697	8,428
Average capital employed	**8,918**	**8,048**
Adjusted operating profit, continuing operations	929	989
ROCE in %, continuing operations	10.4	12.3
Cash provided by operating activities	**1,494**	**1,385**
Cash impact APM adjustments	87	57
Capital expenditure	(609)	(627)
Payments regarding drawing rights	(17)	(14)
Adjusted net operating free cash flow	**955**	**801**

3 Change in the scope of the consolidation

Acquisitions

In 2020, DSM acquired businesses for a total consideration of €1,579 million (in 2019: €585 million).

Glycom

On 1 April 2020, DSM Nutritional Products acquired 100% of the shares of human milk oligosaccharides (HMO) manufacturer Glycom A/S for a cash consideration of approximately €695 million (base purchase price €765 million, net debt -€74 million, difference in net working capital +€4 million). Glycom is a Danish company with more than 150 employees, founded in 2005, and is the only fully-integrated HMO provider in the world. The company sales are predominantly with Nestlé and are governed by a mutually beneficial long-term contract with firmly committed volumes also covering the mid-term horizon.

In accordance with IFRS 3 (Business Combinations), the purchase price was allocated to identifiable assets and liabilities acquired, resulting in a non-tax-deductible goodwill amount of €340 million, technology intangible assets of €360 million and customer relationships of €80 million.

The acquisition of Glycom contributed €43 million to net sales, -€5 million to operating profit and €21 million to Adjusted EBITDA during a period of nine months in 2020. If the acquisition had occurred on 1 January 2020, additional net sales would have been approximately €58 million, operating profit -€7 million and Adjusted EBITDA €27 million.

Erber Group

On 1 October 2020, DSM Nutritional Products acquired 100% of the shares of the Erber Group's specialty animal nutrition and health businesses, Biomin and Romer Labs, for an enterprise value of €980 million. The Erber Group specializes primarily in mycotoxin risk management, gut health performance management, and food and feed safety diagnostic solutions, expanding DSM's range of higher value-add specialty solutions. With state-of-the-art research and manufacturing facilities and approximately 1,400 employees around the world, the acquisition of Erber Group is a unique strategic opportunity that provides revenue-enhancing synergies from the combined offering, global customer base, and complementary geographic strengths.

In accordance with IFRS 3, the purchase price amounting to €884 million was provisionally allocated to identifiable assets and liabilities acquired and is based on a draft initial purchase price allocation prepared by an independent valuator. Completion of the independent valuation process is expected in the second quarter of 2021. Main intangibles provisionally recognized are customer relationships for about €243 million and technology for €106 million. The acquisition is expected to result in non-tax-deductible goodwill to the amount of €522 million.

The acquisition of the Erber Group contributed €81 million to net sales, €7 million to operating profit and €18 million to Adjusted EBITDA during a period of three months in 2020. If the acquisition had occurred on 1 January 2020, additional net sales would have been approximately €328 million, operating profit €34 million and Adjusted EBITDA €76 million.

Total acquisitions
In aggregate, the acquisitions in 2020 contributed €124 million to net sales, €2 million to operating profit and €39 million to Adjusted EBITDA. If all acquisitions had occurred on 1 January 2020, additional net sales would have been approximately €386 million, operating profit €27 million and Adjusted EBITDA €103 million.

Finalization PPAs of CSK and Yimante
In the reporting year, the Purchase Price Allocation (PPA) for CSK was finalized, resulting in an allocation of €89 million to intangible assets mainly for customer relations and technology (strains and cultures database), and a decrease of the goodwill amount from €114 million to €26 million. The PPA of Yimante was finalized in 2020, but the changes were not material.

The goodwill recognized for the CSK acquisition is for the major part deductible against corporate income tax in the Netherlands. The goodwill recognized for the other acquisitions in 2020 is not deductible against corporate income tax.

Valuation techniques intangible assets
Part of a Purchase Price Allocation is the recognition of intangible assets which are recognized apart from goodwill. The valuation techniques DSM used for measuring the fair value of these intangible assets in 2020 were as follows:

The acquired technology was valued by applying the multi-period excess earnings method (MEEM) considering the present value of net cash flows expected to be generated by the technology and customer relationships; and by applying the relief-from-royalty method, an income approach whereby the value of an asset is estimated by capitalizing the royalties saved as a result of owning the asset.

The fair values of customer relationships and supply agreements were determined by applying the MEEM and via the replacement cost approach, measuring the cost necessary to (hypothetically) recreate these intangible assets.

Trade names and databases were valued applying the relief-from-royalty method.

Acquisitions 2020
The accounting of the acquisitions upon closing in 2020, and the changes to the provisional accounting of the acquisitions closed in 2019, impacted DSM's consolidated balance sheet 2020 as shown in below table (measured at the date of acquisition).

	Erber Group (provisional)		Glycom		CSK (PPA adj.)	Other (PPA adj.)	Total	
	Book value	Fair value	Book value	Fair value	Fair value	Fair value	Book value	Fair value
Assets								
Intangible assets	23	380	37	444	89	(3)	60	910
Property, plant and equipment	115	124	86	91	(1)	(1)	201	213
Other non-current assets	10	10	2	2	-	(1)	12	11
Inventories	46	49	7	6	5	-	53	60
Receivables	80	80	3	3	-	-	83	83
Cash and cash equivalents	25	25	7	7	-	-	32	32
Total assets	299	668	142	553	93	(5)	441	1,309
Non-controlling interests and liabilities								
Non-controlling interests	-	-	-	-	-	(1)	-	(1)
Non-current liabilities	94	194	48	146	5	(1)	142	344
Current liabilities	112	112	51	52	-	-	163	164
Total non-controlling interests and liabilities	206	306	99	198	5	(2)	305	507
Net assets	93	362	43	355	88	(3)	136	802
Acquisition price (in cash)		814		695	-	-		1,509
Acquisition price (payable)		70		-	-	-		70
Consideration		884		695	-	-		1,579
Goodwill		522		340	(88)	3		777
Acquisition costs recognized in APM adjustments		14		11	8	6		39

Assets and liabilities held for sale and Discontinued operations

Following the agreement that was signed on 30 September 2020 to sell the Resins & Functional Materials and associated businesses (together ‘RFM’) to Covestro AG, DSM reclassified on the same date the results of these businesses (the ‘disposal group’) to ‘discontinued operations’, and reclassified all related assets and liabilities as held for sale.

These reclassified business results include also intercompany recharges that will cease to be earned/incurred on disposal of RFM. Corporate costs have been excluded from the reclassification to discontinued operations. The comparative numbers in the Income statement and OCI are re-presented as if the operation had been discontinued from the start of the comparative year 2019. The related assets and liabilities of the disposal group on 31 December 2020 have been reclassified as held for sale. Completion of the announced transaction, which is subject to the customary conditions and approvals, is expected in the first half of 2021. Before reclassification, these activities were reported in the segment Materials, apart from the solar coatings activities which were reported in Innovation.

Impact on balance sheet

The impact of the reclassification of these activities on the DSM consolidated balance sheet is presented in the following table.

x € million	2020
Assets	
Non-current assets	
Intangible assets	437
Property, plant and equipment	353
Other non-current assets	12
Current assets	
Inventories	116
Receivables	178
Total assets	1,096
Liabilities	
Non-current liabilities	31
Current liabilities	223
Total liabilities	254
Net assets	842

Impact on comprehensive income

The impact of the business that has been reclassified as held for sale on the income statement and statement of comprehensive income, is presented in the below tables.

	2020			2019		
	Continuing operations	Discontinued operations	Total	Continuing operations	Discontinued operations	Total
Net sales	8,106	932	**9,038**	7,998	1,012	9,010
Adjusted EBITDA	1,534	116	**1,650**	1,551	133	1,684
EBITDA	1,368	108	**1,476**	1,457	129	1,586
Total expenses	7,444	858	**8,302**	7,126	930	8,056
Adjusted operating profit	929	82	**1,011**	989	86	1,075
Operating profit	662	74	**736**	872	82	954
Financial income and expense	(67)	-	**(67)**	(92)	-	(92)
Profit before income tax expense	**595**	**74**	**669**	**780**	**82**	**862**
Income tax expense	(106)	(23)	**(129)**	(145)	(7)	(152)
Results related to associates and joint ventures	(32)	-	**(32)**	54	-	54
Net profit for the year	**457**	**51**	**508**	**689**	**75**	**764**
Of which:						
- Attributable to non-controlling interests	(2)	4	**2**	4	2	6
- Dividend on cumulative preference shares	7	-	**7**	8	-	8
- Available to holders of ordinary shares	452	47	**499**	677	73	750
Earnings per share (EPS)						
- Net basic EPS	2.64	0.27	**2.91**	3.85	0.42	4.27
- Net diluted EPS	2.62	0.27	**2.89**	3.83	0.41	4.24

	2020	2019
Net profit from discontinued operations	**51**	**75**
Other comprehensive income		
Remeasurements of defined benefit pension plans	(1)	(2)
Tax related items that will not be reclassified to profit or loss	-	-
Items that will not be reclassified to profit or loss	**(1)**	**(2)**
Exchange differences on translation of foreign operations		
- Change for the year	(4)	5
Hedging reserve		
- Change for the year	1	3
Tax related items that may subsequently be reclassified to profit or loss	-	(1)
Items that may subsequently be reclassified to profit or loss	**(3)**	**7**
Total comprehensive income discontinued operations	**47**	**80**
Of which:		
- Attributable to non-controlling interests	4	2
- Available to equity holders of Koninklijke DSM N.V.	43	78

Impact on cash flow statement

The impact of the business that has been reclassified to held for sale on the cash flow statement is presented in the following table.

	2020	2019
Net cash provided by / (used in):		
- Operating activities	134	120
- Investing activities	(47)	(59)
Net change in cash and cash equivalents	**87**	**61**

Other changes

In 2020, the following changes in DSM's share in subsidiaries occurred without impacting the classification of the participations.

in €	2020	2019
Zhejiang DSM Zhongken Biotechnology Co., Ltd.	100.0%	60.0%
DSM (Jiangsu) Biotechnology Co., Ltd.	100.0%	96.9%
DSM Amulix VoF	72.0%	51.0%

4 Segment information

DSM's operating segments are Nutrition, Materials and the Innovation Center. DSM has segmented its operations by business activity from which revenues are earned and expenses incurred. These operating results are regularly reviewed by the entity's chief operating decision maker (CODM) to make decisions about resources to be allocated to the segment and assess its performance. DSM uses Adjusted EBITDA as the main indicator to evaluate the consolidated performance as well as the performance per segment. Discrete financial information is available for each identified segment. The accounting policies of the operating segments are the same as those described in the Summary of significant accounting policies. Transactions between segments are generally executed at market-based prices. Interest income, interest expense, and income tax expense or income are not allocated to segments as these amounts are not included in the measure of segment profit or loss reviewed by the CODM, or otherwise regularly provided to the CODM.

Nutrition serves the global industries for animal feed, food & beverages, pharmaceuticals, infant nutrition, dietary supplements, and personal care. It does so by the production of pure active ingredients, their incorporation into sophisticated forms, and the provision of tailored premixes and forward solutions.

Materials is a global player in specialty plastics, which are used in components for the electrical and electronics, automotive, flexible food-packaging, and consumer goods industries. Furthermore, Materials is a global player in providing innovative and sustainable ultra-strong, ultra-light Dyneema® fiber and fabrics.

The Innovation Center focuses on innovation and the growth of DSM's existing core business through adjacent technologies via its Corporate Research Program as well as through the company's venturing and licensing activities. Additionally, it identifies and invests in new and innovative growth options. The Innovation Center is responsible for developing and extracting value from DSM's Emerging Business Areas.

Any consolidated activities outside the three reported segments are reported as 'Corporate Activities'. These mainly comprise operating and service activities as well as several costs that cannot be allocated to the operating segments.

DSM does not have a single external customer that represents 10% or more of total sales.

Geographical information

	Nether-lands	Switzer-land	Rest of Europe	North America	Latin America	China	Rest of Asia	Rest of the world	**Total**
2019									
Net sales by origin									
In € million	1,593	2,098	766	1,370	722	875	470	104	**7,998**
In %	20	26	10	17	9	11	6	1	**100**
Net sales by destination									
In € million	321	137	2,108	1,804	1,095	949	1,310	274	**7,998**
In %	4	2	26	23	14	12	16	3	**100**
Workforce at year-end (headcount)[1]	3,960	2,275	3,433	3,346	2,134	4,960	1,774	292	**22,174**
Average workforce (FTE)[1]	3,785	2,192	3,346	3,336	2,232	4,515	1,691	293	**21,390**
Intangible assets and Property, plant and equipment									
Capital expenditure	131	117	95	116	22	74	6	3	**564**
Carrying amount	2,052	1,437	678	1,946	380	822	208	32	**7,555**
Total assets	4,111	2,157	1,108	2,874	944	1,406	732	111	**13,443**
2020									
Net sales by origin									
In € million	1,515	2,260	1,042	1,380	608	885	336	80	**8,106**
In %	19	28	13	17	7	11	4	1	**100**
Net sales by destination									
In € million	407	214	2,125	1,791	1,045	991	1,268	265	**8,106**
In %	5	3	26	22	13	12	16	3	**100**
Workforce at year-end (headcount)[1]	3,858	2,129	4,384	3,185	2,243	5,025	1,996	307	**23,127**
Average workforce (FTE)[1]	3,708	2,135	3,625	3,195	2,108	4,950	1,803	291	**21,815**
Intangible assets and Property, plant and equipment									
Capital expenditure	110	159	114	76	15	93	4	2	**573**
Carrying amount	1,665	1,452	2,060	1,742	282	810	188	30	**8,229**
Total assets (including assets held for sale)	4,135	2,125	2,643	2,552	776	1,382	639	112	**14,364**

1 Refers to total group, including discontinued operations

Business segments

2020	Nutrition	Materials	Innovation Center	Corporate Activities	Eliminations	Total
Financial performance						
Net sales	6,365	1,518	184	39	-	8,106
Supplies to other clusters	53	8	21		(82)	-
Supplies	6,418	1,526	205	39	(82)	8,106
Adjusted EBITDA[1]	1,338	272	21	(97)	-	1,534
EBITDA	1,211	249	6	(98)	-	1,368
Adjusted operating profit[1]	919	168	(17)	(141)	-	929
Operating profit	792	145	(133)	(142)	-	662
Depreciation and amortization	407	99	38	43	-	587
Impairments	13	4	101	1	-	119
- of which included in APM adjustments	-	-	101	-	-	101
Additions to provisions	70	19	8	7	-	104
Result related to associates and joint ventures	(1)	-	(84)	53	-	(32)
R&D costs[2]	169	60	145	24	-	398
Employee benefit costs	1,102	226	83	273	-	1,684
Financial position						
Total assets	9,495	1,035	599	2,139	1,096[3]	14,364
Total liabilities	2,469	379	37	3,738	254[3]	6,877
Capital employed at year-end	8,308	953	436	-	-	9,697
Capital expenditure	441	63	35	34	-	573
Share in equity of associates and joint ventures	30	3	2	58	-	93
Adjusted EBITDA margin (in %)	21.0	17.9				18.9
Workforce						
Average in fte	14,535	2,852	613	2,012	1,803[3]	21,815
Year-end (headcount)	15,838	2,857	579	2,039	1,814[3]	23,127

1 See Note 2 Alternative performance measures for the reconciliation to Adjusted EBITDA of €1,534 million (2019: €1,551 million) and other IFRS performance measures.

2 R&D costs relate to the functional area Research & Development and exclude R&D costs included in the functional areas Cost of sales and Marketing & Sales as well as R&D expenditure capitalized.

3 The figures presented under 'eliminations' relate to the assets and liabilities reclassified as held for sale and the workforce for the discontinued operations.

Business segments

2019	Nutrition	Materials	Innovation Center	Corporate Activities	Eliminations	Total
Financial performance						
Net sales	6,028	1,744	184	42	-	7,998
Supplies to other clusters	50	4	19		(73)	-
Supplies	6,078	1,748	203	42	(73)	7,998
Adjusted EBITDA	1,250	372	26	(97)	-	1,551
EBITDA	1,224	360	22	(149)	-	1,457
Adjusted operating profit	881	270	(12)	(150)	-	989
Operating profit	832	258	(16)	(202)	-	872
Depreciation and amortization	350	100	35	41	-	526
Impairments	42	2	3	12	-	59
- of which included in APM adjustments	23	-	-	-	-	23
Additions to provisions	8	11	2	50	-	71
Results related to associates and joint ventures	7	-	(2)	49	-	54
R&D costs[1]	148	61	54	32	-	295
Employee benefit costs	1,062	221	88	286	-	1,657
Financial position						
Total assets	8,324	2,238	776	2,105	-	13,443
Total liabilities	2,119	628	57	2,804	-	5,608
Capital employed at year-end	6,731	1,060	599	38	-	8,428
Capital expenditure	420	84	30	30	-	564
Share in equity of associates and joint ventures	29	3	74	49	-	155
Adjusted EBITDA margin (in %)	20.7	21.3				19.4
Workforce						
Average in fte	13,874	2,988	663	2,042	1,823[2]	21,390
Year-end (headcount)	14,599	2,951	683	2,087	1,854[2]	22,174

1 R&D costs relate to the functional area Research & Development and exclude R&D costs included in the functional areas Cost of sales and Marketing & Sales as well as R&D expenditure capitalized.

2 The figures presented under 'eliminations' relate to the workforce for the discontinued operations.

5 Net sales and costs (continuing operations)

Net sales

	2020	2019
Goods sold	7,931	7,821
Services rendered	158	159
Royalties	17	18
Total	**8,106**	**7,998**

Fulfillment of the performance obligations related to goods sold is measured using the commercial shipment terms as an indicator for the transfer of control. Fulfillment of the performance obligations for services rendered is identified according to the individual contract. The payment terms are determined per business segment on a customer basis. DSM has neither specific obligations for returns or refunds, nor specific warranties or other related obligations.

Disaggregation of net sales

	2020	2019
Nutrition		
- Animal Nutrition & Health	3,025	2,892
- Human Nutrition & Health	2,143	2,046
- Personal Care & Aroma Ingredients	404	425
- Other	145	93
DSM Nutritional Products	5,717	5,456
DSM Food Specialties	648	572
Total Nutrition	**6,365**	**6,028**
Materials		
DSM Engineering Materials	1,217	1,406
DSM Protective Materials	301	338
Total Materials	**1,518**	**1,744**
Innovation Center	184	184
Corporate Activities	39	42
Total	**8,106**	**7,998**

Total costs

In 2020, total operating costs amounted to €7.4 billion, €0.3 billion higher than in 2019, when these costs stood at €7.1 billion. Total operating costs in 2020 included Cost of sales amounting to €5.3 billion (2019: €5.2 billion); gross margin as a percentage of net sales stood at 34% (2019: 35%).

Employee benefit costs

	2020	2019
Wages and salaries	1,373	1,347
Social security costs	164	172
Pension costs (see also Note 24)	118	104
Share-based compensation (see also Note 27)	29	34
Total	**1,684**	**1,657**

Depreciation, amortization and impairments

	2020	2019
Amortization of intangible assets	193	167
Depreciation of property, plant and equipment owned	344	311
Depreciation of right-of-use assets	50	48
Impairment losses	119	59
Total	**706**	**585**

Other operating income

	2020	2019
Release of provisions	11	6
Gain on sale of assets and activities	-	7
Insurance benefits	29	16
Amendments / settlements to pension plans	-	16
Earn-out payments and other settlements	7	47
Release translation reserve	-	11
Legal and other settlements	23	8
Sundry	32	31
Total	102	142

Other operating expense

	2020	2019
Additions to provisions	93	67
Exchange differences	18	9
Acquisitions / Disposals	55	11
Sundry	34	20
Total	200	107

6 Financial income and expense

	2020	2019
Financial income		
Interest income	17	9
Fair value change in derivatives	27	20
Unwinding of discounted receivables	-	1
Total financial income	44	30
Financial expense		
Interest expense	(90)	(92)
Interest relating to lease liabilities	(6)	(7)
Interest relating to defined benefit plans	(4)	(7)
Capitalized interest during construction	6	3
Exchange differences	(4)	(2)
Unwinding of discounted payables	(4)	(8)
Sundry	(9)	(9)
Total financial expense	(111)	(122)
Financial income and expense	(67)	(92)

In 2020, the interest rate applied in the capitalization of interest during construction was 3% (2019: 3%).

7 Income tax

The income tax expense on continuing operations was €106 million, which represents an effective income tax rate of 17.9% (2019: €145 million, representing an effective income tax rate of 18.6%). The amount excludes tax expense from discontinued operations of €23 million (2019: €7 million) and can be broken down as follows.

	2020	2019
Current tax expense:		
- Current year	(155)	(72)
- Prior-year adjustments	8	(12)
- Tax credits compensated	4	3
- Non-recoverable withholding tax	(2)	(1)
Total current tax expense	**(145)**	**(82)**
Deferred tax expense:		
- Originating from temporary differences and their reversal	47	(10)
- Tax benefit from innovation facilities	-	14
- Prior-year adjustments	(5)	2
- Change in tax rate	(2)	(26)
Changes arising from (reversal of) write-down of deferred tax assets	(3)	(3)
- Other changes in tax losses and tax credits	2	(40)
Total deferred tax expense	**39**	**(63)**
Total tax expense	**(106)**	**(145)**
Of which related to:		
Taxable result excl. APM adjustments	(160)	(171)
APM adjustments	54	26

The relationship between the income tax rate in the Netherlands and the effective tax rate on the taxable result excluding APM adjustments can be explained as follows.

Effective tax rate

In %	2020	2019
Domestic income tax rate	25.0	25.0
Tax effects of:		
- Deviating rates	(5.2)	(7.3)
- Change in tax rates	0.2	2.8
- Tax-exempt income and non-deductible expense	(2.4)	(1.5)
- Other effects	0.9	0.1
Effective tax rate taxable result, excl. APM adjustments	**18.5**	**19.1**
APM adjustments (see Note 2)	(0.6)	(0.5)
Total effective tax rate	**17.9**	**18.6**

The total effective tax rate on the taxable result in 2020 was 17.9% (2019: 18.6%), excluding APM adjustments this was 18.5% (2019: 19.1%).

The effective tax rate in 2020 was positively impacted by the geographical spread and the tax-exempt income under local tax law in various countries.

The decrease of the effective tax rate from 2019 to 2020 was mainly due to the one-time impact on the deferred tax position caused by the increase of the tax rate in Switzerland in 2019, partly compensated by the decreasing effect of the geographical spread and the lower tax benefits from innovation facilities.

The balance of the deferred tax assets and deferred tax liabilities increased by €115 million owing to the changes presented in the following table.

Deferred tax assets and liabilities

	2020	2019
Balance at 1 January		
Deferred tax assets	217	248
Deferred tax liabilities	(296)	(254)
Total	(79)	(6)
Changes:		
- Income tax income / (expense) in income statement	45	(35)
- Income tax: change in tax percentage	(4)	(26)
- Income tax: tax result share in associates	22	-
Total income statement	63	(61)
- Income tax expense in OCI	(1)	5
- Acquisitions and disposals	(188)	(20)
- Exchange differences	11	(6)
- Reclassification to held for sale	(2)	-
- Transfer	2	9
Balance at 31 December	(194)	(79)
Of which:		
- Deferred tax assets	239	217
- Deferred tax liabilities	(433)	(296)

In various countries, DSM has taken standpoints regarding its tax position which may at any time be challenged, or have already been challenged, by the tax authorities, because the authorities in question interpret the law differently. These uncertainties are taken into account in determining the probability of realization of deferred tax assets and liabilities.

The deferred tax assets and liabilities relate to the following balance sheet items.

Deferred tax assets and liabilities by balance sheet item

	2020		2019	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Intangible assets	21	(350)	8	(184)
Property, plant and equipment	27	(173)	27	(182)
Right-of-use assets	-	(44)	3	(47)
Financial assets	28	(15)	7	(10)
Inventories	51	(42)	44	(40)
Receivables	14	(24)	8	(21)
Equity	-	-	-	-
Lease liabilities non-current	33	-	36	(1)
Other non-current liabilities	12	(2)	9	(2)
Non-current provisions	94	(4)	100	(5)
Other current liabilities	66	(6)	86	(4)
Lease liabilities current	10	-	11	-
	356	(660)	339	(496)
Tax losses carried forward	110		78	
Set-off	(227)	227	(200)	200
Total	239	(433)	217	(296)

No deferred tax assets were recognized for loss carryforwards amounting to €267 million (2019: €273 million). Unrecognized loss carryforwards amounting to €134 million will expire in the years up to and including 2025 (2019: €104 million up to and including 2024), €71 million between 2026 and 2030 (2019: €87 million between 2025 and 2029) and the remaining €62 million in 2031 and beyond (2019: €82 million between 2030 and beyond).

The valuation of deferred tax assets depends on the probability of the reversal of temporary differences and the utilization of tax loss carryforwards, tax credits and withholding tax. Deferred tax assets are recognized for future tax benefits arising from temporary differences and for tax loss carryforwards to the extent that the tax benefits are probable. In the Netherlands, tax losses may be carried forward for six years. DSM has to assess the likelihood that deferred tax assets will be recovered from future taxable profits. Deferred tax assets are reduced if, and to the extent that, it is not probable that all or some portion of the deferred tax assets will be realized. In the event that actual future results differ from estimates, and depending on tax strategies that DSM may be able to implement, changes to the measurement of deferred taxes could be required, which could have an impact on the company's financial position and profit for the year.

8 Intangible assets

	Goodwill	Licenses and patents	Under construction	Development projects	Other	Total
Balance at 1 January 2019						
Cost	1,927	206	50	296	1,776	**4,255**
Amortization and impairment losses	18	99	-	43	1,005	**1,165**
Carrying amount	**1,909**	**107**	**50**	**253**	**771**	**3,090**
Changes in carrying amount:						
- Capital expenditure	-	1	50	51	8	**110**
- Put into operation	-	4	(26)	-	22	**-**
- Acquisitions	338	1	-	-	124	**463**
- Amortization	-	(13)	-	(26)	(136)	**(175)**
- Impairment losses	-	(2)	-	(21)	(8)	**(31)**
- Exchange differences	36	2	1	4	12	**55**
- Other reclassifications	-	-	(4)	6	1	**3**
	374	**(7)**	**21**	**14**	**23**	**425**
Balance at 31 December 2019						
Cost	2,301	216	71	338	1,966	**4,892**
Amortization and impairment losses	18	116	-	71	1,172	**1,377**
Carrying amount	**2,283**	**100**	**71**	**267**	**794**	**3,515**
Changes in carrying amount:						
- Capital expenditure	-	1	77	42	43	**163**
- Put into operation	-	11	(59)	-	48	**-**
- Acquisitions	777	3	36	34	837	**1,687**
- Amortization	-	(13)	-	(35)	(152)	**(200)**
- Impairment losses	(20)	(14)	-	(74)	(2)	**(110)**
- Exchange differences	(138)	(2)	-	-	(28)	**(168)**
- Reclassification to held for sale	(387)	(3)	(1)	(28)	(18)	**(437)**
- Other	-	(2)	(9)	17	(1)	**5**
	232	**(19)**	**44**	**(44)**	**727**	**940**
Balance at 31 December 2020						
Cost	2,535	202	115	380	2,621	**5,853**
Amortization and impairment losses	20	121	-	157	1,100	**1,398**
Carrying amount	**2,515**	**81**	**115**	**223**	**1,521**	**4,455**

The amortization of intangible assets is included in Cost of sales, Marketing & Sales, Research & Development and General & Administrative expenses.

Over the past few years, DSM has acquired several entities in business combinations that have been accounted for by the acquisition method, resulting in recognition of goodwill and other intangible assets. The amounts assigned to the acquired assets and liabilities are based on assumptions and estimates about their fair values. In making these estimates, management consults independent, qualified appraisers if appropriate.

The impairment losses in 2020 are €110 million. This includes a €67 million impairment of mainly intangible assets previously reported in the Innovation segment relating to DSM Bio-based Products & Services, owing to an expected subdued market outlook for biofuels which led to insufficient expected future cash flows. Consequently, the recoverable amount is measured at fair value minus costs of disposal, which was assessed to be of immaterial value to DSM. Furthermore, the impairment losses include the impairment of €38 million relating to DSM Advanced Solar on its solar assets previously reported in the Innovation segment, following the sale of the solar coating activities to Covestro AG. This led to insufficient expected future cash flows for the remaining solar assets, primarily consisting of goodwill and technology. Therefore, the recoverable amount for these assets is measured at fair value minus costs of disposal, which is assessed to be of immaterial value to DSM.

The breakdown of the carrying amount of goodwill at year-end 2020 is as follows.

Goodwill per acquisition

Acquisition	2020	2019	Cash generating unit	Functional Currency	Year of acquisition
Erber Group[1]	521	-	DSM Nutritional Products	EUR	2020
Martek	378	413	DSM Nutritional Products	USD	2011
Glycom[1]	341	-	DSM Nutritional Products	DKK	2020
Fortitech	283	310	DSM Nutritional Products	USD	2012
Ocean Nutrition Canada	190	204	DSM Nutritional Products	CAD	2012
Kensey Nash	132	144	DSM Biomedical	USD	2012
Andre Pectin	131	135	DSM Food Specialties	CNY	2019
Tortuga	62	89	DSM Nutritional Products	BRL	2013
Royal CSK	26	114	DSM Food Specialties	EUR	2019
NeoResins[2]	-	358	DSM Resins & Functional Materials	EUR	2005
Other acquisitions[2]	451	516			
Total	2,515	2,283			

1 Based on provisional PPA, see Note 3 Change in the scope of consolidation.

2 As per 31 December 2020, goodwill has been reclassified to assets held for sale for an amount of €387 million (NeoResins €358 million, Other acquisitions €29 million), see Note 3 Change in the scope of consolidation.

Goodwill per Cash generating unit

Cash generating unit	2020	2019
DSM Nutritional Products	2,018[1]	1,260[1]
DSM Food Specialties	227	321
DSM Biomedical	203	222
DSM Protective Materials	40	42
DSM Engineering Materials	27	29
DSM Resins & Functional Materials[2]	-	384
DSM Advanced Solar	-	16
DSM Bio-based Products & Services	-	9
Total	2,515	2,283

1 Contains provisional PPA, see Note 3 Change in the scope of consolidation.

2 As per 31 December 2020, goodwill has been reclassified to assets held for sale for an amount of €387 million, Note 3 Change in the scope of consolidation.

The annual impairment tests of goodwill are performed in the fourth quarter. The recoverable amount of the Cash generating units (CGUs), except for the previously mentioned CGUs DSM Bio-based Products & Services and DSM Advanced Solar, is based on a value-in-use calculation. DSM Nutritional Products is the CGU to which a significant amount of (provisional) goodwill is allocated. In 2020 goodwill from DSM Hydrocolloids (DHC) was re-allocated to DSM Food Specialties due to further integration of the organization. The comparative figures have been adjusted accordingly.

The cash flow projections are derived from DSM's business plan (Corporate Strategy Dialogue) as adopted by the Managing Board and updated on a yearly basis. Mature businesses come to a terminal value after five years. The terminal value growth rate is determined with the assumption of limited inflationary growth. For emerging businesses, an explicit forecast period of ten years is used with the same assumption for growth in the terminal value. The key assumptions in the cash flow projections relate to the market growth for the CGUs and the related revenue projections, EBITDA developments, and the rates used for discounting cash flows.

Key assumptions for goodwill impairment tests

	2020	2019
Forecast period (years)		
- Mature business	5	5
- Emerging business	10	10
Terminal value growth	1%	1%
Pre-tax discount rate		
- DSM Nutritional Products	9.1%	8.1%
Organic sales growth		
DSM Nutritional Products		
- Year 1—5	4-7%	2-6%

For DSM Nutritional Products the growth assumptions are based on the growth of the global food and feed markets. A sensitivity test was performed on the impairment tests of the CGUs and showed that the conclusions of these tests would not have been different if reasonable possible adverse change in key parameters had been assumed.

The market capitalization of DSM at 31 December 2020 amounted to €25,545 million (31 December 2019: €21,063 million) and was clearly above the carrying amount of net assets, thus providing an additional indication that goodwill was not impaired.

Development costs

The carrying amount of development costs at 31 December 2020 included €136 million (2019: €125 million) mainly relating to strategic projects which are not being amortized yet. The recoverable amount of these CGUs was estimated based on the present value of the future cash flows expected to be derived from the CGUs (value-in-use).

Other intangible assets

				2020	2019
	Cost	Amortization	Carrying amount	Of which acquisition-related	Of which acquisition-related
Application software	315	(217)	98	62	2
Marketing-related	111	(41)	70	70	81
Customer-related	1,001	(381)	620	620	311
Technology-based	626	(174)	452	429	89
Drawing rights	244	(88)	156	-	-
Other	324	(199)	125	109	63
Total	**2,621**	**(1,100)**	**1,521**	**1,290**	**546**
Total 2019	1,966	(1,172)	794	546	

Other intangible assets include (partially provisional) customer relationships, which were obtained during the acquisition of Erber Group and Glycom in 2020, as well as CSK in 2019 and Fortitech in 2012. Technology-based intangibles were mainly obtained via the acquisition of Erber Group and Glycom in 2020 and CSK in 2019. Intangible assets are included in the annual goodwill impairment test as discussed in this section; they are amortized on a straight-line basis. There are no intangible assets with an indefinite useful life (same as in 2019). The acquisition-related numbers 2019 have been adjusted for comparison reasons.

Other intangible assets also include drawing rights contracts with Fibrant. Fibrant will continue to supply at least 80% of DSM Engineering Materials' caprolactam needs in Europe and North America for 15 years (2015–2030) via a drawing rights contract, effectively maintaining DSM Engineering Materials' backward integration. Initially the fair value of this contract has been recognized as an intangible asset by DSM Engineering Materials; for subsequent measurement, the initial fair value is the deemed cost of the asset, which is subject to straight-line amortization. At the end of 2020, it had a carrying amount of €156 million (2019: €167 million), a remaining useful life of 10 years, and an amount of €39 million was still payable to Fibrant for the acquisition of the drawing rights (2019: €44 million).

9 Property, plant and equipment

Composition of Property, plant and equipment

	2020	2019
Property, plant and equipment owned	3,566	3,808
Right-of-use assets	208	232
Total	3,774	4,040

Property, plant and equipment owned

	Land and buildings	Plant and machinery	Other equipment	Under construction	Not used for operating activities	Total
Balance at 1 January 2019						
Cost	2,104	4,618	226	689	12	**7,649**
Depreciation and impairments	952	3,030	170	1	6	**4,159**
Carrying amount at 1 January 2019	**1,152**	**1,588**	**56**	**688**	**6**	**3,490**
Changes in carrying amount:						
- Capital expenditure	7	45	4	457	-	**513**
- Put into operation	82	401	15	(498)	-	**-**
- Acquisitions	48	77	2	12	-	**139**
- Disposals	(3)	-	-	-	-	**(3)**
- Depreciation	(75)	(255)	(17)	-	-	**(347)**
- Impairment losses	(18)	(10)	(1)	-	-	**(29)**
- Exchange differences	18	22	1	12	-	**53**
- Other changes	-	-	-	(8)	-	**(8)**
	59	**280**	**4**	**(25)**	**-**	**318**
Balance at 31 December 2019						
Cost	2,232	5,019	235	664	12	**8,162**
Depreciation and impairments	1,021	3,151	175	1	6	**4,354**
Carrying amount at 31 December 2019	**1,211**	**1,868**	**60**	**663**	**6**	**3,808**
Changes in carrying amount:						
- Capital expenditure	10	58	5	386	-	**459**
- Put into operation	84	350	15	(449)	-	**-**
- Acquisitions	94	90	10	8	2	**204**
- Disposals	-	(1)	-	-	-	**(1)**
- Depreciation	(81)	(269)	(20)	-	-	**(370)**
- Impairment losses	(4)	(12)	(1)	(3)	-	**(20)**
- Exchange differences	(53)	(82)	(3)	(22)	-	**(160)**
- Reclassification to held for sale	(103)	(177)	(12)	(57)	-	**(349)**
- Other changes	(1)	(1)	-	(3)	-	**(5)**
	(54)	**(44)**	**(6)**	**(140)**	**2**	**(242)**
Balance at 31 December 2020						
Cost	2,098	4,781	192	527	8	**7,606**
Depreciation and impairments	941	2,957	138	4	-	**4,040**
Carrying amount	**1,157**	**1,824**	**54**	**523**	**8**	**3,566**

In 2020, impairment losses of €20 million (2019: €29 million) were recognized on Property, plant and equipment. See also Note 2 Alternative performance measures.

Right-of-use assets

	Land and buildings	Plant and machinery	Other equipment	Vehicles	Other	Total
Balance at 1 January 2019	170	10	21	31	4	236
Changes in carrying amount:						
New leases / terminations	12	-	15	13	(1)	39
Remeasurements	1	-	-	(2)	-	(1)
Acquisitions	7	-	-	1	-	8
Depreciation	(30)	(2)	(3)	(14)	(1)	(50)
	(10)	(2)	12	(2)	(2)	(4)
Balance at 31 December 2019						
Cost	189	9	35	42	3	278
Depreciation and impairments	(29)	(1)	(2)	(13)	(1)	(46)
Carrying amount at 31 December 2019	160	8	33	29	2	232
Changes in carrying amount:						
New leases / terminations	10	-	-	11	-	21
Remeasurements	12	-	2	(1)	-	13
Acquisitions	8	-	-	1	-	9
Depreciation	(33)	(1)	(3)	(14)	-	(51)
Exchange rate differences	(9)	-	(1)	(2)	-	(12)
Reclassification to held for sale	(1)	-	-	(3)	-	(4)
	(13)	(1)	(2)	(8)	-	(24)
Balance at 31 December 2020						
Cost	199	9	37	39	3	287
Depreciation and impairments	(52)	(2)	(6)	(18)	(1)	(79)
Carrying amount	147	7	31	21	2	208

For the disclosures on the lease liabilities that correspond with the right-of-use assets, see Note 19 Borrowings.

10 Associates and joint arrangements

Associates and joint ventures

The following table analyses, in aggregate, the carrying amount and share of profit and other results of associates and joint ventures.

	2020			2019
	Associates	Joint ventures	Total	Total
Balance at 1 January	82	73	155	205
- Share of the profit of associates and joint ventures	11	(82)	(71)	(12)
- Other results related to associates and joint ventures[1]	-	-	-	35
- Other comprehensive income	(5)	(1)	(6)	2
- Capital payments	1	7	8	30
- Dividends received	(1)	-	(1)	(73)
- Acquisitions	1	-	1	22
- Other	-	7	7	(54)
Balance at 31 December	89	4	93	155

1 In the Consolidated income statement included in 'Other results related to associates and joint ventures'.

In the second quarter of 2020, an impairment test was carried out by the POET-DSM Advanced Biofuels joint venture, triggered by the decision to mothball the second-generation bio-ethanol plant in Emmetsburg (Iowa, USA). While previous impairment tests were based on the value-in-use of POET-DSM, this method was no longer applicable due to ceased operations, and the recoverable amount was determined based on the fair value minus cost to sell. Given the challenging market conditions and the specialized nature of the assets, the fair value minus cost to sell and, hence, the recoverable amount was assessed to be negligible. Based on this impairment test, an impairment loss of €74 million was included in 'Share of the profit of associates and joint ventures' and the carrying amount of DSM's share in POET-DSM has been reduced to zero.

Joint operations

In 2020, DSM and VDL Group established Dutch PPE Solutions VoF, Eindhoven (Netherlands), a joint operation in which DSM and VDL Group each hold a 50% share. Dutch PPE Solutions will establish production of medical face masks and the first permanent production of critical face mask components in the Netherlands. The plant producing meltblown polypropylene, the critical material layer in medical face masks that filters viruses, is expected to be fully operational in Sittard-Geleen (Netherlands) in April 2021.

DSM accounts for the assets, liabilities, revenues and expenses relating to Veramaris (2017), Avansya VoF (2019), and Dutch PPE Solutions (2020) in accordance with IFRS 11 for joint operations and therefore recognizes the amounts in accordance with the contractual entitlement and obligations of DSM.

11 Other financial assets

	Loans associates and joint ventures	Other participating interests	Other receivables	Other	**Total**
Balance at 1 January 2019	2	164	88	9	263
Changes:					
- Charged to the income statement	-	-	9	(2)	7
- Acquisitions	-	-	-	1	1
- Capital payments	-	23	-	-	23
- Loans granted / prepayments	4	-	9	-	13
- Repayments	(2)	-	(5)	-	(7)
- Exchange differences	-	-	1	-	1
- Transfers	(1)	(15)	3	-	(13)
- Changes in fair value	-	(21)	-	-	(21)
- Other	-	(1)	-	(1)	(2)
Balance at 31 December 2019	3	150	105	7	265
Changes:					
- Charged to the income statement	-	-	-	(2)	(2)
- Acquisitions	-	-	-	4	4
- Disposals	-	(47)	-	-	(47)
- Capital payments	-	11	-	-	11
- Loans granted / prepayments	1	-	8	-	9
- Repayments	-	-	(5)	4	(1)
- Exchange differences	-	-	(10)	-	(10)
- Transfers	-	-	(7)	(4)	(11)
- Changes in fair value	-	106	-	-	106
- Other	-	(1)	(6)	-	(7)
Balance at 31 December 2020	4	219	85	9	317

'Disposals' includes the divestment of our other participating interest in probiotic company UAS Laboratories, Inc.

'Changes in fair value' consists mainly of the value increase of our minority share in Amyris, Inc. (€78 million) and of our share in UAS Laboratories, Inc. prior to divestment (€38 million).

12 Inventories

	2020	2019
Raw materials and consumables	491	524
Intermediates and finished goods	1,467	1,576
	1,958	2,100
Adjustments to lower net realizable value	(79)	(81)
Total	1,879	2,019

Changes in the adjustment to net realizable value

	2020	2019
Balance at 1 January	(81)	(90)
Additions charged to income statement	(18)	(66)
Utilization / reversals	18	76
Exchange differences	3	(1)
Acquisition	(2)	-
Reclassification to held for sale	1	-
Balance at 31 December	(79)	(81)

The carrying amount of inventories adjusted to net realizable value was €263 million (2019: €272 million).

13 Current receivables

	2020	2019
Trade receivables		
Trade accounts receivable	1,183	1,354
Other trade receivables	180	202
Deferred items	45	43
Receivables from associates	11	10
	1,419	1,609
Expected credit loss	(28)	(17)
Total Trade receivables	1,391	1,592
Income tax receivable	35	61
Other current receivables		
Other taxes and social security contributions	28	31
Employee-related receivables	2	5
Acquisition-/disposal- related receivables	4	3
Loans	16	-
Other receivables	7	4
Deferred items	5	2
Total Other current receivables	62	45
Total current receivables	1,488	1,698

Information about the expected credit loss that relates to trade accounts receivable resulting in a value adjustment is included under Credit risk in Note 23.

Deferred items comprised €50 million (2019: €45 million) in prepaid expenses that include advance payments for any expenditure that would have otherwise been made during the next 12 months.

14 Current investments

	2020	2019
Fixed term deposits	43	688
Total	43	688

All fixed-term deposits have been placed with institutions with a high credit rating in line with our counterparty policy. The purpose of the deposits is either to meet short-term cash commitments, or to manage liquidity to such extent that yields are optimized while allowing DSM sufficient freedom in fulfilling its (strategic) goals.

In 2020 fixed deposits were reduced as part of the financing of the realized acquisitions.

For more information regarding the counterparty policy, see Note 23 Financial instruments and risks.

15 Cash and cash equivalents

	2020	2019
Deposits	28	104
Money market funds	-	45
Cash at bank and in hand	836	605
Payments in transit	5	44
Bills of exchange	2	2
Total	871	800

Deposits will be classified as ‘cash equivalent’ if held at banks with a maturity of less than three months at inception. Deposits will be classified as ‘current investments’ if the maturity is more than three months but less than or equal to one year. The purpose of the deposits is either to meet short-term cash commitments, or to manage liquidity to such extent, that yields are optimized, while allowing DSM sufficient freedom in fulfilling its (strategic) goals.

Cash at year-end 2020 was not being used as collateral and therefore was not restricted (same as in 2019).

In a few countries, DSM faces cross-border foreign exchange controls and/or other legal restrictions that limit its ability to make these balances available at short notice for general use by the group. The amount of cash held in these countries was €128 million (2019: €185 million). The cash will generally be invested or held in the relevant country and, given the other liquidity resources available to the group, does not significantly affect the ability of the group to meet its cash obligations.

16 Equity

	2020	2019
Balance at 1 January	7,835	7,815
Net profit for the year	508	764
Other comprehensive income	(323)	140
Options / share units granted	29	34
Dividend	(429)	(418)
Proceeds from reissue of ordinary shares	206	324
Acquisition of NCI without a change in control	(32)	(4)
Acquisition (divestment) of subsidiary with NCI	(1)	57
Repurchase of shares	(309)	(869)
Other changes	3	(8)
Balance at 31 December	7,487	7,835

'Acquisition of NCI without a change in control' relates to the purchase of the remaining 40% non-controlling interest in Zhejiang DSM Zhongken Biotechnology Co., Ltd. See Note 17 Non-controlling interests.

Dividend

In 2020, the following dividends were proposed by the Managing Board.

	2020	2019
Per cumulative preference share A: €0.16 (2019: €0.17)	7	8
Per ordinary share: €2.40 (2019: €2.40)	413	417
Total	420	425

The proposed final dividend on ordinary shares is subject to approval by the Annual General Meeting of Shareholders and has not been deducted from Equity.

For a description of the rules of profit appropriation and of the statutory rights attached to preference shares A and B, see Note 7 Shareholders' equity to the Parent company financial statements.

Share capital

On 31 December 2020, the authorized capital amounted to €1,125 million (2019: €1,125 million), distributed over 330,960,000 ordinary shares, 44,040,000 cumulative preference shares A and 375,000,000 cumulative preference shares B. All shares have a nominal value of €1.50 each. The outstanding shares are entitled to one vote per share at the General Meeting of Shareholders. All rights attached to the Company's shares held by the Group (treasury shares) are suspended until those shares are reissued.

Every year the Managing Board, with the approval of the Supervisory Board, shall decide which part of the profit shall be set aside. Out of the profit remaining, a dividend based on EURIBOR plus a premium at the company's discretion, shall be distributed insofar as possible on the cumulative preference shares B. From the amount remaining of the profit, a dividend shall be distributed insofar as possible on the cumulative preference shares A, the percentage based on the effective return on government loans, increased by a mark-up to be determined at the company's discretion. If, for any financial year, the distributions on the cumulative preference shares B and A cannot be effected or cannot be fully effected because the profit after reservation does not suffice, the deficit shall be distributed to the debit of the following financial years. In that case, each time as much as possible, the overdue dividend, augmented by the dividend for the last expired financial year, shall be distributed, first on cumulative preference shares B and next on cumulative preference shares A. The remaining profit shall be put at the disposal of the General Meeting of Shareholders.

The changes in the number of issued and outstanding shares in 2019 and 2020 are shown in the following table.

Overview of shares

	Issued shares Ordinary	Issued shares Cumprefs A	Treasury shares Ordinary
Balance at 1 January 2019	181,425,000	44,040,000	5,774,425
Reissue of shares in connection with share-based payments			(3,395,405)
Repurchase of shares			7,962,936
Dividend in the form of ordinary shares			(1,365,711)
Balance at 31 December 2019	181,425,000	44,040,000	8,976,245
Number of treasury shares at 31 December 2019	(8,976,245)		
Number of shares outstanding at 31 December 2019	172,448,755	44,040,000	
Balance at 1 January 2020	181,425,000	44,040,000	8,976,245
Reissue of shares in connection with share-based payments			(1,460,174)
Repurchase of shares			2,876,035
Dividend in the form of ordinary shares			(1,186,445)
Balance at 31 December 2020	181,425,000	44,040,000	9,205,661
Number of treasury shares at 31 December 2020	(9,205,661)		
Number of shares outstanding at 31 December 2020	172,219,339	44,040,000	

The average number of ordinary shares outstanding in 2020 was 171,535,921 (2019: 175,730,949). All shares issued are fully paid.

The cumulative preference shares A have been classified as equity, because there is no mandatory redemption and distributions to the shareholders are at the discretion of DSM.

On 31 December 2020, no cumulative preference shares B were outstanding (same as 2019).

Share premium

Of the total share premium of €489 million (2019: €489 million), an amount of €91 million (2019: €93 million) can be regarded as entirely free of tax.

Treasury shares

In 2020, DSM repurchased 2.9 million shares for an amount of €309 million in order to fulfill its obligations under share-based compensation plans (0.9 million), to cover commitments for stock dividend (0.7 million) and 1.3 million for capital reduction. On 12 June 2020, DSM announced that, as a prudent measure given the COVID-19 environment and given the acquisition of Erber Group, it had decided to cancel the remainder of its €1 billion share buy-back program.

At 31 December 2020, DSM possessed 9,205,661 (2019: 8,976,245) ordinary shares with a nominal value of €14 million, or 4.08% (2019: 3.98%) of the share capital. The average purchase price of the ordinary treasury shares as at 31 December 2020 was €105.98 (2019: €100.78). At 31 December 2020, 2,460,656 (2019: 3,020,830) of the total number of treasury shares outstanding were held for servicing share-option rights and share plans, 106,034 (2019: 592,479) shares for stock dividend, and 6,638,971 (2019: 5,362,936) shares earmarked for capital reduction.

Other reserves in Shareholders' equity

	Translation reserve	Hedging reserve	Reserve for share-based compensation	Fair value reserve	Total
Balance at 1 January 2019	37	(166)	53	21	(55)
Changes:					
Fair-value changes of derivatives	-	(18)	-	-	(18)
Release to income statement	(9)	66	-	-	57
Fair-value changes of other financial assets	-	-	-	(21)	(21)
Exchange differences	134	-	-	-	134
Options and performance shares granted	-	-	34	-	34
Options and performance shares exercised/canceled	-	-	(36)	-	(36)
Transfer to retained earnings	-	-	-	4	4
Changes in joint ventures and associates	-	-	-	1	1
Income tax	-	(4)	-	-	(4)
Total changes	125	44	(2)	(16)	151
Balance at 31 December 2019	162	(122)	51	5	96
Changes:					
Fair-value changes of derivatives	-	40	-	-	40
Release to income statement	-	20	-	-	20
Fair-value changes of other financial assets	-	-	-	106	106
Exchange differences	(451)	-	-	-	(451)
Options and performance shares granted	-	-	29	-	29
Options and performance shares exercised/cancelled	-	-	(39)	-	(39)
Transfer to retained earnings	-	-	-	(30)	(30)
Changes in Joint Ventures and associates	(2)	-	-	-	(2)
Income tax	2	(6)	-	(8)	(12)
Total changes	(451)	54	(10)	68	(339)
Balance at 31 December 2020	(289)	(68)	41	73	(243)

The decrease in the Translation reserve in 2020 is mainly caused by a strengthening of the euro against the US dollar, Brazilian real, Chinese renminbi and Canadian dollar. As a consequence, the total value of the subsidiaries decreased, which led to a negative exchange difference of -€451 million.

The Translation reserve, Hedging reserve and Fair value reserve (partly) are legal reserves in accordance with Dutch law and cannot be distributed to shareholders. Additional information is provided in Note 7 Shareholders' equity to the Parent company financial statements.

17 Non-controlling interests

	2020				2019
	Andre Pectin	Yimante	Other	Total	
% of non-controlling interest	25%	25%			
Balance at 1 January	35	25	44	104	33
Changes:					
- Share of profit/charged to income statement	2	(2)	2	2	6
- Acquisitions	-	(1)	-	(1)	57
- Other consolidation changes	-	-	(10)	(10)	9
- Capital payments	-	-	3	3	1
- Dividend paid	(1)	-	(5)	(6)	(4)
- Exchange differences	(1)	(1)	(2)	(4)	2
Total changes	-	(4)	(12)	(16)	71
Balance at 31 December	35	21	32	88	104

‘Other consolidation changes’ relates mainly to the increase of DSM's share in Zhejiang DSM Zhongken Biotechnology Co., Ltd. from 60% to 100%.

Not fully-owned subsidiaries on a 100% basis

	2020				2019
	Andre Pectin	Yimante	Other	Total	
Assets					
Intangible assets	61	23	33	117	130
Property, plant and equipment	44	102	174	320	283
Other non-current assets	-	23	33	56	57
Inventories	36	11	23	70	76
Receivables	22	33	55	110	99
Cash and cash equivalents	3	1	45	49	41
Total assets	166	193	363	722	686
Liabilities					
Provisions (non-current)	14	-	2	16	19
Borrowings (non-current)	1	78	31	110	64
Other non-current liabilities	-	2	15	17	19
Borrowings and derivatives (current)	-	-	100	100	75
Other current liabilities	9	29	98	136	131
Total liabilities	24	109	246	379	308
Net assets (100% basis)	142	84	117	343	378
Net sales	59	6	141	206	220
Net profit for the year	(9)	9	12	12	16
Cash provided by / (used in) operating activities	(23)	20	(26)	(29)	(55)

18 Provisions

	Restructuring costs and termination benefits	Environmental costs	Other long-term employee benefits	Other provisions	Total
Balance at 1 January 2019	**17**	**58**	**39**	**39**	**153**
Of which current	12	10	3	12	**37**
Changes:					
- Additions	43	19	4	5	**71**
- Releases	(3)	(13)	-	(3)	**(19)**
- Uses	(26)	(5)	(3)	(5)	**(39)**
- Other change	-	-	1	1	**2**
Total changes	14	1	2	(2)	**15**
Balance at 31 December 2019	**31**	**59**	**41**	**37**	**168**
Of which current	21	13	4	10	**48**
Changes:					
- Additions	86	3	3	12	**104**
- Releases	(7)	(16)	-	(5)	**(28)**
- Uses	(62)	(7)	(2)	(4)	**(75)**
- Reclassification to held for sale	-	-	(4)	-	**(4)**
- Acquisitions	2	1	3	15	**21**
- Other change	-	-	-	(2)	**(2)**
Total changes	19	(19)	-	16	**16**
Balance at 31 December 2020	**50**	**40**	**41**	**53**	**184**
Of which current	42	7	5	7	**61**

In cases where the effect of the time value of money is material, provisions are measured at the present value of the expenditures expected to be required to settle the obligation. The discount rate used decreased from 1.2% to 0.7%. The balance of provisions measured at present value increased by less than €1 million in 2020 in view of the passage of time (same as in 2019).

The provisions for restructuring costs and termination benefits mainly relate to the costs of redundancy schemes connected to the dismissal of employees and costs of termination of contracts. These provisions have an average life of 1 to 3 years.

During 2020, a restructuring program was launched within DSM Nutritional Products to increase its agility to drive above-market profitable growth. By simplifying the operating model and further improving business steering, the program aims to better serve customers and respond to the differentiated needs of their respective end-markets. At the same time, it creates a more efficient organization. A provision of €48 million was recognized for this program, of which €40 million was used during the year.

A restructuring initiative within Materials was launched to leverage synergies, increase operating agility and deliver annual cost savings of €15–20 million. A provision of €19 million was recognized for this program, of which €2 million was used during the year.

The other additions to the provisions for restructuring costs and termination benefits in 2020 relate mainly to the various smaller restructuring projects (same as in 2019).

The provisions for environmental costs relate to soil clean-up obligations, among other things. These provisions have an average life of around 10 years.

The provisions for other long-term employee benefits relate mainly to length-of-service and end-of-service payments. The average life of this provision is estimated to be between 10 and 12 years.

Several items have been combined under Other provisions, for example demolition costs, onerous contracts and legal claims. These provisions have an average life of 1 to 3 years.

19 Borrowings

	2020		2019	
	Total	Of which current	Total	Of which current
Debenture loans	3,237	-	2,244	-
Private loans	81	7	41	8
Lease liabilities	215	47	236	49
Credit institutions	53	53	132	132
Total	**3,586**	**107**	**2,653**	**189**

In agreements governing loans with a residual amount at year-end 2020 of €3,237 million (31 December 2019: €2,244 million), negative pledge clauses have been included that restrict the provision of security.

The documentation of the €500 million bond issued in March 2014, the €500 million bond issued in April 2015, the €500 million bond issued in September 2015, the €750 million bond issued in September 2016, and both €500 million bonds issued in June 2020 include a change-of-control clause. This clause allows the bond investors to request repayment at par if 50% or more of the DSM shares are controlled by a third party and if the company is downgraded below investment grade (< BBB-). In October 2020, Moody's affirmed DSM's credit rating of 'A3' with a stable outlook. Standard & Poor's affirmed DSM's credit rating of 'A-' with a stable outlook in June 2020. At 31 December 2020, there was €1,813 million in borrowings outstanding with a remaining term of more than 5 years (at 31 December 2019, €1,265 million).

The schedule of repayment of borrowings is as follows.

Borrowings by maturity

	2020	2019
2020	-	189
2021	107	49
2022	548	528
2023	37	25
2024 and 2025	1,081	1,036
After 2025	1,813	826
Total	**3,586**	**2,653**

A breakdown by currency is given in the following table.

Borrowings by currency

	2020	2019
EUR	3,351	2,413
USD	88	101
CNY	80	74
TWD	12	6
BRL	11	15
Other	44	44
Total	**3,586**	**2,653**

On balance, total borrowings increased by €933 million due to the following changes.

Movements of borrowings

	2020	2019
Balance at 1 January	2,653	2,652
Opening balance lease labilities (adoption IFRS 16)	-	215
Loans taken up	1,123	7
Repayments	(268)	(302)
Unwinding (interest)	7	8
Acquisitions/consolidation changes	205	29
Reclassification to held for sale	(4)	-
Changes in debt to credit institutions	(95)	57
New lease arrangements (incl. remeasurements)	34	39
Payment of lease liabilities	(55)	(53)
Exchange differences	(14)	1
Balance at 31 December	3,586	2,653

The average effective interest rate on the portfolio of borrowings outstanding in 2020, including hedge instruments related to these borrowings, amounted to 1.78% (2019: 2.31%).

A breakdown of debenture loans is given below.

Debenture loans

			Nominal amount	2020	2019
EUR loan	2.38%	2014—2024	500	499	499
EUR loan	1.00%	2015—2025	500	498	498
EUR loan	1.38%	2015—2022	500	500	499
EUR loan	0.75%	2016—2026	750	748	748
EUR loan	0.25%	2020—2028	500	497	-
EUR loan	0.625%	2020—2032	500	495	-
Total			3,250	3,237	2,244

All debenture loans have a fixed interest rate and are listed on the AEX.

- The 2.375% EUR bond 2014–2024 of €500 million was pre-hedged by means of forward starting swaps, resulting in an effective interest rate for this bond of 3.97%, including the settlement of the pre-hedge
- The 1% EUR bond 2015–2025 of €500 million was pre-hedged by means of forward starting swaps, resulting in an effective interest rate for this bond at 3.65%, including the settlement of the pre-hedge
- The 1.375% EUR bond 2015–2022 of €500 million has an effective interest rate of 1.40%
- The 0.75% EUR bond 2016–2026 of €750 million was pre-hedged by means of a collar resulting in an effective interest rate for this bond of 1.08%, including the settlement of the pre-hedge
- The 0.25% EUR bond 2020–2028 of €500 million has an effective interest rate of 0.29%
- The 0.625% EUR bond 2020–2032 of €500 million has an effective interest rate of 0.70%

A breakdown of private loans is given below.

Private loans

	2020	2019
CNY loan	57	40
Other loans	24	1
Total	81	41

A breakdown of the lease liabilities is given below.

Lease liabilities by maturity

	2020	2019
2020	-	49
2021	47	40
2022	38	33
2023	32	27
2024	27	24
2025	20	18
After 2025	72	65
Total undiscounted lease liabilities at 31 December	236	256
Lease liabilities included in the Balance Sheet at 31 December	**215**	**236**
Current	47	49
Non-current	168	187

In addition to the contractual lease commitments, DSM has identified explicit renewal options available to DSM, which are currently not reasonably certain to be exercised and are therefore not included in the measurement of the lease.

The associated future lease payments which are uncommitted and optional for DSM, are estimated around €78 million (undiscounted; 2019: €76 million).

The interest expense on the lease liabilities was €6 million (2019: €7 million) and the total repayments of the lease liabilities amounted to €55 million in 2020 (2019: €53m). These cash flows are reported as financing cash flows.

DSM's policy regarding financial-risk management is described in Note 23.

20 Other non-current liabilities

	2020	2019
Investment grants / customer funding	76	65
Deferred items	24	28
Drawing rights	36	31
Other non-current liabilities	27	21
Total	**163**	**145**

The increase in the other non-current liabilities relates mainly to additional customer funding of investment projects.

21 Current liabilities

	2020	2019
Trade payables		
Received in advance	11	7
Trade accounts payable	1,200	1,330
Notes and cheques due	2	1
Owing to associates and joint ventures	5	7
Total Trade payables	**1,218**	**1,345**
Income tax payable	**53**	**42**
Other current liabilities		
Other taxes and social security contributions	49	46
Interest	22	19
Pensions	2	-
Investment creditors	98	115
Employee-related liabilities	266	268
Payables associates and joint ventures relating to cash facility	2	5
Acquisition / divestment related liabilities	77	25
Total Other current liabilities	**516**	**478**
Total current liabilities	**1,787**	**1,865**

Included in trade accounts payable are amounts due to suppliers which could be part of a supply chain finance arrangement between the supplier and a third-party bank. DSM suppliers have the option to enter into such supply chain finance arrangements with third party banks, which provides them with the option of earlier payment based on terms linked to DSM's investment grade credit rating. If a supplier chooses to participate in such an arrangement, this does not impact the classification of the trade payable for DSM as these supply chain finance arrangements are concluded between the banks and the suppliers and do not alter the payment conditions between the supplier and DSM. Therefore, these amounts remain classified as trade payables.

22 Contingent liabilities and other financial obligations

The contingent liabilities and other financial obligations in the following table are not recognized in the balance sheet.

	2020	2019
Guarantee obligations on behalf of associates and third parties	196	182
Outstanding orders for projects under construction	30	8
Other	82	61
Total	**308**	**251**

Guarantee obligations are principally related to VAT and duties on the one hand and to financing obligations of associated companies or related third parties on the other. Guarantee obligations will only lead to a cash outflow when called upon. At year-end, no obligations had been called upon. Most of the outstanding orders for projects under construction will be completed in 2021.

Litigation

DSM has a process in place to monitor legal claims periodically and systematically.

DSM is involved in several legal proceedings, most of which are related to the ordinary course of business. DSM does not expect these proceedings to result in liabilities that have a material effect on the company's financial position. In cases where it is probable that the outcome of the proceedings will be unfavorable, and the financial outcome can be measured reliably, a provision has been recognized in the financial statements and disclosed in Note 18 Provisions.

In 2015, an award was issued against DSM Sinochem Pharmaceuticals India Private Ltd. (DSP India) in a protracted arbitration case in India going back to 2004 involving a joint venture that DSP India had formed with Hindustan Antibiotics Ltd., which suspended its operations in 2003. DSP India (renamed to Centrient Pharmaceuticals after divestment by DSM in 2018) is covered by an indemnity from Koninklijke DSM N.V. for this case. In 2015, DSP India made an application with the Civil Court in Pune (India) to set aside the arbitral award. The award amounts to INR 127.5 crore (approximately €14 million as at year-end 2020) excluding interest of 12% per year as of 2004. In 2019, DSM provided the Bombay High Court a bank guarantee of INR 150 crore (approximately €17 million as at year-end 2020). At the end of 2020, the application proceedings were still pending. DSM has always viewed this case as unfounded and is of the opinion that the likelihood of the award being ultimately set aside is high. Therefore, no liability is recognized in respect of this case.

In 2019, Brazilian tax authorities disagreed with certain tax treatment as applied by the company in 2014–2016, which would have an effect on such prior year income tax returns of around BRL 65 million (approximately €10 million as at year-end 2020), including penalties and interest. DSM views this case as unfounded and considers that the possibility of winning this case is high, as confirmed by external legal counsel. Therefore no liability relating to this case is recognized.

23 Financial instruments and risks

Policies on financial risks

General

As an international company, DSM is exposed to financial risks in the normal course of business. A major objective of our group policy is to minimize the impact of market, liquidity and credit risk on the value of the company and its profitability. In order to achieve this, a systematic financial and risk management system has been established. For the purpose of securing compliance with the risk management policies, an internal control framework has been implemented, and the controls are monitored and tested periodically.

The derivatives contracts used by DSM are entered into exclusively in connection with the corresponding underlying transaction (hedged item) relating to normal operating business. The instruments used are customary products, such as currency swaps, cross-currency interest rate swaps, collars, forward exchange contracts and interest rate swaps.

An important element of DSM's financial policy and capital management is the allocation of cash flow. DSM primarily allocates cash flow to investments aimed at strengthening its business positions and securing the dividend payment to its shareholders. The remaining cash flow is further used for acquisitions and partnerships that strengthen DSM's competences and market positions. The net debt to equity ratio (gearing) is 25.6 (2019: 12.7), see also Note 25 Net debt.

Liquidity risk

Liquidity risk is the financial risk that an entity does not have and/or cannot access enough liquid cash and/or assets to meet its obligations. This can happen if the entity's credit rating falls, or when it experiences sudden unexpected cash outflows or an unexpected drop in cash inflows, or some other event that causes counterparties to avoid trading with or lending to the entity. Additionally, an entity can be indirectly exposed to market liquidity risk, if the financial markets on which it depends are subject to loss of liquidity.

The primary objective of liquidity management is to optimize the corporate cash position, among other things, by securing availability of sufficient liquidity for execution of payments by DSM entities, at the right time and the right place.

At 31 December 2020, DSM had cash and cash equivalents of €871 million (2019: €800 million).

At the end of 2020, DSM had eight committed credit facilities amounting to €1.5 billion. The agreement for the committed credit facility has neither financial covenants nor material adverse changes clauses. The €1.0 billion committed credit facility concluded in 2018 and maturing on 28 May 2025 links the interest rate to DSM's greenhouse gas (GHG) emission reduction. The new committed credit facilities (€0.5 billion) concluded in 2020, with a maximum tenor of 2 years, do not link the interest rate to DSM's greenhouse gas (GHG) emission reduction. At year-end 2020, no loans had been taken up under the committed credit facilities.

Furthermore, DSM has a commercial paper program amounting to €2.0 billion (2019: €1.5 billion). The company will use the commercial paper program to a total of not more than €1.0 billion (2019: €1.0 billion). At 31 December 2020, €0 million had been issued as commercial paper (2019: €0 million). Due to COVID-19, in the first half of 2020, DSM issued commercial paper to the value of €0.5 billion.

DSM has no derivative contracts to manage currency risk or interest rate risk outstanding under which margin calls by the counterparty would be permitted.

Floating-rate and fixed-rate borrowings and monetary liabilities analyzed by maturity are summarized in the following table. Borrowings excluding credit institutions are shown after taking into account related interest rate derivatives in designated hedging relationships. DSM manages financial liabilities and related derivative contracts on the basis of the remaining contractual maturities of these instruments. The remaining maturities presented in the following table provide an overview of the timing of the cash flows related to these instruments. Financial assets are not linked to financial liabilities in order to meet cash outflows on these liabilities.

Financial liabilities

	Carrying amount	Within 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	After 5 years
2019							
Borrowings	2,653	189	41	37	524	22	1,840
Monetary liabilities	1,916	1,864	17	3	2	3	27
Guarantees	182	-	-	-	-	-	182
Derivatives	25	18	3	1	3	-	-
Interest payments	183	33	30	30	30	22	38
Cash at redemption[1]	26	5	4	4	3	3	7
Total	**4,985**	**2,109**	**95**	**75**	**562**	**50**	**2,094**
2020							
Borrowings	3,586	107	548	37	546	535	1,813
Monetary liabilities	1,851	1,787	21	5	5	5	28
Guarantees	196	-	-	-	-	-	196
Derivatives	14	13	1	-	-	-	-
Interest payments	168	34	34	27	27	15	31
Cash at redemption[1]	13	2	2	2	2	1	4
Total	**5,828**	**1,943**	**606**	**71**	**580**	**556**	**2,072**

1 Difference between nominal redemption and amortized costs.

The following table reflects the exposure of the derivatives to liquidity risk. It contains the cash flows from derivatives with positive fair values and from derivatives with negative fair values to have a complete overview of the derivatives related cash flows. The amounts are gross and undiscounted.

Derivatives cash flow

	2020	2021	2022	2023	2024	2025	Total
2019							
Inflow	1,690	38	37	56	19		**1,840**
Outflow	(1,688)	(38)	(37)	(58)	(19)		**(1,840)**
2020							
Inflow		1,881	57	103	39	14	**2,094**
Outflow		(1,842)	(54)	(101)	(36)	(13)	**(2,046)**

Market risk
Market risk can be subdivided into interest rate risk, currency risk and price risk.

Interest rate risk
Interest rate risk is the risk that adverse movements of interest rates lead to high costs on interest-bearing debt or assets, which negatively impact the company's capability to honor its commitments. DSM's interest rate risk policy is aimed at minimizing the interest rate risks associated with the financing of the company and thus at the same time optimizing the net interest costs. This policy translates into a certain desired profile of fixed-interest and floating-interest positions, including cash and cash equivalents, with the floating-interest position not exceeding 60% of net debt.

At 31 December 2020, there was a CNY 180 million credit facility held by DSM Inner Mongolia Rainbow, based on floating rate SHIBOR (2019: CNY 255 million). There were no outstanding fixed-floating interest rate swaps (end of 2019 none).

The following analysis of the sensitivity of borrowings, assets and related derivatives to interest rate movements assumes an instantaneous 1% change in interest rates for all maturities from their level on 31 December 2020, with all other variables held constant. A 1% reduction in interest rates would result in a €6 million pre-tax loss in the income statement and equity on the basis of the composition of financial instruments on 31 December 2020, as floating-rate borrowings are more than compensated for by floating-rate assets (mainly cash). The opposite applies in the case of a 1% increase in interest rates. The sensitivity of financial instruments with a floating interest rate on 31 December 2020 to changes in interest rates is set out in the following table.

For more information regarding fixed or floating interest, see Note 19 Borrowings.

Sensitivity to change in interest rate

	2020			2019		
	Carrying amount	Sensitivity		Carrying amount	Sensitivity	
		+1%	(1%)		+1%	(1%)
Loans to associates and joint ventures	4	-	-	3	-	-
Current investments	43	-	-	688	7	(7)
Cash and cash equivalents	871	9	(9)	800	8	(8)
Short-term borrowings	(107)	(1)	1	(189)	(2)	2
Long-term borrowings	(3,479)	(2)	2	(2,464)	(2)	2

Currency risk
Currency risk is the risk that adverse movements of foreign currencies negatively impact the results of operations and the financial condition of the company, for example due to losses on assets or liabilities in foreign currencies. It is DSM's policy to hedge 100% of the currency risks resulting from sales and purchases at the moment of recognition of the receivables and payables. This is realized by transferring at spot rates the respective exposures to the group, which are, consequently (on a netted basis), hedged externally.

In addition, operating companies may — under strict conditions — opt for hedging currency risks from firm commitments and forecast transactions. The currencies giving rise to these risks are primarily USD, CHF and JPY. The risks arising from currency exposures are regularly reviewed and hedged when appropriate. DSM uses currency forward contracts, spot contracts, and average-rate currency forwards and options to hedge the exposure to fluctuations in foreign exchange rates. At year-end, these instruments had remaining maturities of less than one year. For the hedging of currency risks from firm commitments and forecast transaction cash flows, hedge accounting is applied. Hedge accounting is not applied for hedges of recognized trade receivables and trade payables hedged with short-term derivatives.

To hedge intercompany loans, receivables and payables denominated in currencies other than the functional currency of the subsidiaries, DSM uses currency swaps or forward contracts.

The following analysis of the sensitivity of net borrowings and derivative financial instruments to currency movements against the euro assumes a 10% change in all foreign currency rates against the euro from their level on 31 December 2020, with all other variables held constant. A +10% change indicates a strengthening of the foreign currencies against the euro. A -10% change represents a weakening of the foreign currencies against the euro.

Sensitivity to change in exchange rate

	2020			2019		
	Carrying amount	Sensitivity		Carrying amount	Sensitivity	
		+10%	(10%)		+10%	(10%)
Loans to associates and joint ventures	4	-	-	3	-	-
Current investments	43	1	(1)	688	1	(1)
Cash and cash equivalents	871	25	(25)	800	37	(37)
Short-term borrowings	(60)	(4)	4	(140)	(4)	4
Long-term borrowings	(3,311)	(5)	5	(2,277)	(3)	3
Lease liabilities	(215)	(15)	15	(236)	(17)	17
Currency forward contracts	9	17	(17)	(8)	23	(23)
Currency forwards related to net investments in foreign entities[1]	-	(13)	13	(1)	(9)	9
Average-rate forwards used for economic hedging[2]	35	19	(19)	(2)	(38)	38
Other derivatives	51	4	(4)	26	3	(3)

1 Fair-value change reported in Translation reserve.
2 Fair-value change reported in Hedging reserve.

Sensitivity changes on these positions will generally be recognized in profit or loss or in the translation reserve in equity, with the exception of the instruments for which cash flow hedge accounting or net-investment hedge accounting is applied.

In case of a strengthening or weakening of the euro against USD, CHF and CNY (being the key currencies), this would affect the translation of financial instruments denominated in these currencies taking into account the effect of hedge accounting and assuming all other variables being constant.

	Profit or loss		Equity	
	Strengthening	Weakening	Strengthening	Weakening
EUR				
USD (10% movement)	(130)	130	(223)	223
CHF (10% movement)	11	(11)	(187)	187
CNY (10% movement)	(26)	26	(89)	89

Price risk

Financial instruments that are subject to changes in stock exchange prices or indexes are subject to a price risk. At year-end 2020 investments in securities are subject to price risks.

Credit risk

Credit risk is the risk that a (commercial or financial) counterparty may not be able to honor a financial commitment according to the contractual agreement with DSM. The company manages the credit risk to which it is exposed by applying credit limits per institution and by dealing exclusively with institutions that have a high credit rating.

At the balance sheet date, there were no significant concentrations of credit risks.

For all financial assets measured at amortized cost and fair value through other comprehensive income, the estimation of the loss allowance for doubtful accounts receivable is based on an expected credit loss (ECL) model.

For trade receivables, DSM uses an allowance matrix to measure the lifetime ECL for trade receivables. The loss rates depend among other things on the specified aging categories and are based on historical write-off percentages, taking market developments into account.

For other financial assets, DSM applies an ECL model that reflects the size and significance of DSM's exposure to credit loss. The ECL is based on the allocation of a credit risk grade which is based on data that is determined to be predictive of the risk of loss (including but not limited to external ratings, audited financial statements, management accounts and cash flow projections and available press information about customers) and applying experienced credit judgement. Credit risk grades are defined using qualitative and quantitative factors that are indicative of the risk of default and are aligned to external credit rating definitions from Moody's.

Risk of default is herewith considered as the risk of bankruptcy, or any legal impediment to the timely payment of either interest and/or principal, as well as missed or delayed disbursement of either interest and/or principal.

The loss allowance on non-current financial assets that has been taken into consideration at the end of 2020 was €5 million.

With regard to treasury activities (for example cash, cash equivalents and derivatives held with banks or financial institutions) it is ensured that financial transactions are only concluded with counterparties that have at least a Moody's credit rating of A3 for long-term instruments. At business group level, outstanding receivables are continuously monitored by management. Appropriate allowances are made for any credit risks that have been identified in line with the expected credit loss policy.

The development of the outstanding receivables per aging category is as follows.

	2020	2019
Neither past due nor impaired	924	1,055
1–29 days overdue	165	199
30–89 days overdue	70	77
90 days or more overdue	24	23
Total	1,183	1,354

The table below provides information about the credit risk exposure per aging category and the ECL for trade accounts receivable of €28 million at 31 December 2020 (31 December 2019: €17 million), see Note 13 Current receivables.

	Weighted average loss rate	Gross carrying amount	Expected credit loss
Neither past due nor impaired	0.4%	924	(4)
1–29 days overdue	1.0%	165	(2)
30–89 days overdue	6.0%	70	(4)
90 days or more overdue	75.0%	24	(18)
Total		1,183	(28)

The changes in the expected credit loss for trade accounts receivable are as follows.

	2020	2019
Balance at 1 January	(17)	(35)
Net remeasurement of expected credit loss	(6)	14
Deductions	1	4
Acquisitions	(9)	-
Reclassification to held for sale	2	-
Exchange differences	1	-
Balance at 31 December	(28)	(17)

The maximum exposure to credit risk is represented by the carrying amounts of financial assets that are recognized in the balance sheet, including derivative financial instruments. DSM has International Swaps and Derivatives Association (ISDA) agreements in place with its financial counterparties that allow for the netting of exposures in case of a default of either party. No significant agreements or financial instruments were available at the reporting date that would reduce the maximum exposure to credit risk.

Exposure to credit risk related to derivatives

	2020	2019
Receivables from derivatives	109	46
Liabilities from derivatives	(14)	(25)
Net amount	95	21

Information about financial assets is presented in Note 10 Associates and joint arrangements, Note 11 Other financial assets, Note 13 Current receivables, Note 14 Current investments, Note 15 Cash and cash equivalents and Note 23 Financial instruments and risks.

DSM's policy is to grant corporate guarantees for credit support of subsidiaries and associates, to get access to credit facilities which are necessary for their operating working capital needs and which cannot be funded by the corporate cash pools and/or for bank guarantees needed for local governmental requirements. Information on guarantees is presented in Note 22 Contingent liabilities and other financial obligations.

Hedge accounting

DSM uses derivative financial instruments to manage financial risks relating to business operations and does not enter into speculative derivative positions. The purpose of cash flow hedges is to minimize the risk of volatility of future cash flows. These may result from a recognized asset or liability or a forecast transaction that is considered highly probable (firm commitment). The hedge ratio is dependent on the risk analysis related to the specific cash flow, and can vary from 50% to 100%. Changes in fair value as a result of changes in interest (for cash flows hedges) or as a result of changes in exchange rate (for firm commitment hedges) are recognized in Other comprehensive income (Hedging reserve), and ineffectiveness (mainly as a result of changes in timing of the hedged transactions) will be recognized in the income statement. As soon as the forecast transaction is realized (the underlying hedged item materializes), the amount recognized in the Other comprehensive income will be reclassified to the income statement. In case the hedged future transaction is a non-financial asset or liability, the gain or loss recognized in Other comprehensive income will be included in the cost of acquisition of the asset or liability.

The purpose of a hedge of a net investment is to reduce the foreign currency translation risk of an investment in a company whose functional currency is not the euro. Changes in fair value are recognized in Other comprehensive income (Translation reserve), and ineffectiveness will be recognized in the income statement. The amount recognized in the Other comprehensive income will be reclassified to the income statement, upon divestment of the respective foreign subsidiary.

The purpose of a fair value hedge is to hedge the fair value of assets or liabilities reflected on the balance sheet. Changes of fair value in hedging instruments, as well as hedged items, will be recognized in the income statement.

Cash flow hedges

In 2020, DSM hedged USD 575 million (2019: USD 712 million) of its 2021 projected net cash flow in USD against the EUR by means of average-rate currency forward contracts at an average exchange rate of USD 1.14 per EUR for the four quarters of 2021. Each quarter, the relevant hedges for that quarter will be settled and recognized in the income statement. In 2020, DSM also hedged JPY 7,213 million (2019: JPY 7,453 million) of its 2021 projected net cash flow in JPY against the EUR by means of average-rate currency forward contracts at an average exchange rate of JPY 122 per EUR for the four quarters of 2021. DSM also hedged the projected CHF obligations against the EUR, namely CHF 361 million (2019: CHF 304 million) at an average exchange rate of CHF 1.07 per EUR. These hedges have fixed the exchange rate for part of the USD and JPY receipts and CHF payments in 2021. Cash flow hedge accounting is applied for these hedges. As a result of similar hedges concluded in 2019 for the year 2020, €3 million positive (2019: €43 million negative) was recognized in the 2020 operating profit of the segments involved in accordance with the realization of the expected cash flows. There was no ineffectiveness in relation to these hedges.

Net investment hedges

The partial hedging of the currency risk associated with the translation of DSM's CHF-denominated investments was continued for an amount of CHF 135 million (2019: CHF 100 million). There was no material ineffectiveness in relation to these hedges.

	Cash flow hedges Foreign currency risk		Net investment hedges Foreign exchange - denominated debt (CHF currency)	
	Inventory purchases	Other[1]	Assets	Liabilities
2019				
Nominal amount hedged item	31	406	-	92
Carrying amount assets	-	-	-	-
Carrying amount liabilities	1	2	-	1
Line item balance sheet	Derivatives	Derivatives	Derivatives	Derivatives
Change in the value of the hedging instrument	5	20	-	4
Costs of hedging recognized in OCI	5	(23)	-	6
Reclassified from hedging reserve to income statement	(1)	43	-	-
Line item income statement	Cost of sales	Sales	Finex[2]	Finex[2]
2020				
Nominal amount hedged item	28	223	-	125
Carrying amount assets	-	35	-	-
Carrying amount liabilities	-	-	-	-
Line item balance sheet	Derivatives	Derivatives	Derivatives	Derivatives
Change in the value of the hedging instrument	1	37	-	1
Costs of hedging recognized in OCI	1	40	-	-
Reclassified from hedging reserve to income statement	(9)	(3)	-	-
Line item income statement	Cost of sales	Sales	Finex[2]	Finex[2]

1 Forward contracts, sales, receivables and borrowings

2 Financial income and expense

For movements in Hedging or Translation reserve, see also Note 16 Equity.

Fair value of financial instruments

The following methods and assumptions were used to determine the fair value of financial instruments: cash, current investments, current receivables, current borrowings (excluding current portion of long-term instruments) and other current liabilities are stated at carrying amount, which approximates fair value in view of the short maturity of these instruments. The fair value of derivatives and long-term instruments are based on calculations, quoted market prices or quotes obtained from intermediaries.

The portfolio of derivatives consists of average-rate forward contracts that are valued against average foreign exchange forward rates obtained from Bloomberg and other derivatives that are valued using a discounted cash flow model, applicable market yield curves and foreign exchange spot rates. Inputs for the fair value calculations represent observable market data that are obtained from external sources that are deemed to be independent and reliable.

DSM uses the following hierarchy for determining the fair value of financial instruments:

- Level 1: quoted prices in active markets for identical assets or liabilities
- Level 2: other techniques for which all inputs that have a significant effect on the fair value are observable, either directly or indirectly
- Level 3: techniques that use inputs that have a significant effect on the fair value that are not based on observable market data.
- The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy.

Fair value of financial instruments

	Carrying amount					Fair Value			
	Amort. Cost	Fair value hedging instr.	FVTPL	FVOCI	Total	Level 1	Level 2	Level 3	Total
Assets 2019									
Non-current derivatives	-	-	27	-	**27**	-	27	-	**27**
Other participating interests	-	-	-	150	**150**	44	40	66	**150**
Non-current loans to associates and JVs	3	-	-	-	**3**	-	3	-	**3**
Other non-current receivables	105	-	-	-	**105**	-	-	105	**105**
Other non-current deferred items	7	-	-	-	**7**	-	-	7	**7**
Trade receivables	1,592	-	-	-	**1,592**	-	-	1,592	**1,592**
Other current receivables	45	-	-	-	**45**	-		45	**45**
Current derivatives		19	-	-	**19**	-	19	-	**19**
Current investments	688	-	-	-	**688**	-	-	688	**688**
Cash and cash equivalents	755	-	45	-	**800**	45	-	755	**800**
Liabilities 2019									
Non-current borrowings	(2,464)	-	-	-	**(2,464)**	(2,397)	-	(187)	**(2,584)**
Non-current derivatives	-	(7)	-	-	**(7)**	-	(7)	-	**(7)**
Other non-current liabilities	(145)	-	-	-	**(145)**	(126)	-	(19)	**(145)**
Current borrowings	(189)	-	-	-	**(189)**	(140)	-	(49)	**(189)**
Current derivatives	-	(18)	-	-	**(18)**	-	(18)	-	**(18)**
Trade payables	(1,345)	-	-	-	**(1,345)**	-	-	(1,345)	**(1,345)**
Other current liabilities	(478)	-	-	-	**(478)**	-	-	(478)	**(478)**
Assets 2020									
Non-current derivatives		10	51		**61**		61		**61**
Other participating interests				219	**219**	121	36	62	**219**
Non-current loans to associates and JVs	4				**4**		4		**4**
Other non-current receivables	85				**85**			85	**85**
Other non-current deferred items	9				**9**			9	**9**
Trade receivables	1,391				**1,391**			1,391	**1,391**
Other current receivables	62				**62**			62	**62**
Current derivatives		48			**48**		48		**48**
Current investments	43				**43**			43	**43**
Cash and cash equivalents	871				**871**			871	**871**
Liabilities 2020									
Non-current borrowings	(3,479)				**(3,479)**	(3,469)		(168)	**(3,637)**
Non-current derivatives		(1)			**(1)**		(1)		**(1)**
Other non-current liabilities	(163)				**(163)**	(141)		(22)	**(163)**
Current borrowings	(107)				**(107)**	(60)		(47)	**(107)**
Current derivatives		(13)			**(13)**		(13)		**(13)**
Trade payables	(1,218)				**(1,218)**			(1,218)	**(1,218)**
Other current liabilities	(516)				**(516)**			(516)	**(516)**

During the year there were no material transfers between individual levels of the fair value hierarchy.

Notional value of derivative financial instruments

	2020			2019		
	Non-current	Current	Total	Non-current	Current	Total
Cross-currency interest rate swaps	(201)	(152)	**(353)**	(200)	(163)	(363)
Forward exchange contracts, currency options, currency swaps	(2)	(1,691)	**(1,693)**	-	(1,629)	(1,629)
Other derivatives	46	(28)	**18**	27	(31)	(4)
Total	**(157)**	**(1,871)**	**(2,028)**	**(173)**	**(1,823)**	**(1,996)**

24 Post-employment benefits

The group operates a number of defined benefit plans and defined contribution plans throughout the world, the assets of which are generally held in separately administered funds. The pension plans are generally funded by payments from employees and from the relevant group companies. The group also provides certain additional healthcare benefits to retired employees in the US.

Post-employment benefits are employee benefits (other than termination benefits and short-term employee benefits) that are payable after the completion of employment. The defined benefit obligation is valued using the projected unit credit method as prescribed under IAS 19 'Employee Benefits'. Post-employment benefit accounting is intended to reflect the recognition of post-employment benefits over the employee's approximate service period, based on the terms of the plans and the investment and funding. The accounting requires management to make assumptions regarding variables such as discount rate, future salary increases, life expectancy, and future healthcare costs. Management consults with external actuaries regarding these assumptions at least annually for significant plans.

Changes in these key assumptions can have a significant impact on the projected defined benefit obligations, funding requirements and periodic costs incurred.

The charges for pension costs recognized in the income statement (Note 5 Net sales and costs (continuing operations)), relate to the following.

Pension costs

	2020	2019
Defined benefit plans:		
- Current service costs pension plans	36	28
- Other post-employment benefits	3	2
Defined contribution plans	79	74
Total pension costs included in employee benefit costs	**118**	**104**
- Pension costs included in Other operating (income) / expense	-	(16)
Total in operating profit, continuing operations	**118**	**88**
Pension costs included in Financial income and expense	4	7
Total continuing operations	**122**	**95**
Discontinued operations	14	12
Total	**136**	**107**
Of which:		
- Defined contribution plans	92	85
- Defined benefit plans	44	22

For 2021, costs for the defined benefit plans relating to pensions are expected to be €42 million (2020: €44 million).

Changes in Employee benefit net liabilities recognized in the balance sheet are shown in the following overview.

Employee benefit net liabilities

	2020	2019
Balance at 1 January	454	458
Changes:		
- Balance of actuarial gains/(losses)	23	24
- Employee benefit costs	45	21
- Contributions by employer	(54)	(54)
- Acquisition and disposals	4	1
- Exchange differences	(2)	4
- Reclassification from/to held for sale	(16)	-
Total changes	-	(4)
Balance at 31 December	454	454

The Employee benefit net liabilities of €454 million (2019: €454 million) consist of €434 million related to pensions (2019: €434 million), €5 million related to healthcare and other costs (2019: €6 million) and €15 million related to other post-employment benefits (2019: €14 million). See also the table below.

Net assets/liabilities

	2020	2019
Major plans:		
Present value of funded obligations	(1,756)	(1,724)
Fair value of plan assets	1,676	1,644
Net	(80)	(80)
Present value of unfunded obligations	(354)	(354)
Net (liabilities) / net assets major plans	(434)	(434)
Net (liabilities) / net assets other plans	(20)	(20)
Total net liabilities / net assets	(454)	(454)
Of which:		
Liabilities (Employee benefit liabilities)	(456)	(456)
Assets (Prepaid pension costs)	2	2

Pensions

The DSM group companies have various pension plans, which are geared to the local regulations and practices in the countries in which they operate. As these plans are designed to comply with the statutory framework, tax legislation, local customs and economic situation of the countries concerned, it follows that the nature of the plans varies from country to country. The plans are based on local legal and contractual obligations.

DSM's current policy is to offer defined contribution retirement benefit plans to new employees wherever possible. However, DSM still has a (small) number of defined benefit pension and healthcare schemes from the past or in countries where legislation does not allow us to offer a defined contribution scheme. Generally, these schemes have been funded through external trusts or foundations, where DSM faces the potential risk of funding shortfalls. The most significant defined benefit schemes are:

- Pension Plan at DSM Nutritional Products AG in Switzerland (DNP AG)
- DSM UK Pension Scheme in the UK
- Consolidated Pension Plan of DSM North America, Inc. in the US
- Pension Plan at DSM Nutritional Products GmbH in Germany (DNP GmbH)

For each plan, the following characteristics are relevant:

DNP AG Pension Plan in Switzerland

The DNP AG Pension Plan is a typical Swiss Cash Balance plan. For accounting purposes, this plan is qualified as a defined benefit plan. It is a contribution-based plan. There is no promise of indexation for on-going pensions. The Swiss state minimal requirements for occupational benefit plans have however to be respected; the Minimum Guaranteed Interest Return on the cash balance accounts for 2020 was 1.00% (2019: 1.00%) for the mandatory portion (BVG/LPP). There is also a minimal conversion rate applicable. The weighted average duration of the defined benefit obligation is 16.4 years (2019: 16.4 years) which could be seen as an indication of the maturity profile of the scheme.

The pension plan is managed and controlled by a DSM company pension fund. The Board of Trustees consists of representatives of the employer and the employees who have an independent role. The plan assets are collectively invested (no individual investment choice). The current (estimated) funding level, based on local standards, is 117% (2019: 119%), which is above the legally required minimum funding level but below the long-term buffer target.

DSM UK Pension Scheme

The DSM UK Pension Scheme was closed as of 30 September 2016 for all pension accruals. An unconditional indexation policy is applicable for the vested pension rights. The weighted average duration of the defined benefit obligation is 19.8 years (2019: 19.4 years), which could be seen as an indication of the maturity profile of the scheme.

The pension plan is managed and controlled by a DSM company pension fund. The Board of Trustees consists of representatives of the employer and the employees who have an independent role. The 2018 valuation was finalized in 2019 and as a result DSM will continue to pay an annual recovery contribution of GBP 0.9 million into the plan. There are two company guarantees in place: (1) a guarantee from DNP AG (capped at GBP 14 million) related to the 2012 valuation, and (2) a guarantee from Royal DSM (capped at GBP 11 million) related to arrangements with respect to former UK divestments. There is a long-term de-risking strategy for the DSM UK Pension Scheme in place with the objective to align the company's intentions and the Trustees responsibility with respect to this plan. The current funding level, based on local standards, is estimated at 99% (2019: 99%).

Consolidated Plan in the US

The Consolidated Plan in the US has been closed to new entrants since 2014. As of 31 December 2016, the plan was closed for pension accrual of the non-unionized employees.

New accrual is only applicable for a small group of unionized employees. There is no indexation applicable for the vested pension rights. The weighted average duration of the defined obligations is 12.5 years (2019: 12.1 years), which could be seen as an indication of the maturity profile of the scheme.

The pension plan is managed and controlled by a DSM company pension fund. The Board of Trustees consists of representatives of the employer and the employees, who have an independent role.

In 2020, the Board of Trustees finalized a bulk annuity purchase for a group of retirees with small monthly benefits. For a group of unionized employees the accrual was closed in 2020 and a one-time increase of the multiplier was implemented. The financial result of these changes is recognized in 2020.

The internal funding policy of this plan is based on IFRS valuation. This implies a stricter funding policy than the minimum requirements on local funding. The current IFRS funding level is 101% (2019: 99%), whereas the funding level on local standards (Pension Protection Act) is estimated at 133% (2019: 124%). The minimum required funding level on local standards is 80% on the basis of this Act.

DNP GmbH Pension Plan in Germany

The DNP GmbH Pension Plan in Germany has been closed to new entrants as of 31 December 2008. The accrual is still applicable for employees who have been participating in the plan since 2008. The pension plan is a final-pay pension plan (averaged over the last 12 months prior to retirement) and service-related benefit. The liability is on the balance sheet of DSM Nutritional Products GmbH. No assets are allocated to this liability. All reimbursements will be paid out by the local company. The weighted average duration of the defined benefit obligation is 14.9 years (2019: 15.2 years), which could be seen as an indication of the maturity profile of the scheme.

The most important unfunded plans are in Germany, for which the associated liability amounts to €345 million (2019: €344 million).

The changes in the present value of the defined benefit obligations and in the fair value of plan assets of the major plans are listed below.

Present value of defined benefit obligations

	2020	2019
Balance at 1 January	2,079	1,808
Changes:		
- Service costs	36	33
- Interest costs	18	29
- Contributions	15	15
- Actuarial (gains)/losses	114	216
- Past service costs	-	(16)
- Exchange differences	(30)	59
- Disbursements	(77)	(65)
- Settlements	(31)	-
- Reclassification to held for sale	(16)	-
- Other	2	-
Total changes	31	271
Balance at 31 December	2,110	2,079

Fair value of plan assets

	2020	2019
Balance at 1 January	1,644	1,370
Changes:		
- Interest income on plan assets	15	23
- Actuarial gains/(losses)	89	192
Actual return on plan assets	104	215
- Contributions by employer	41	42
- Contributions by employees	15	14
- Disbursement	(63)	(52)
- Settlements	(31)	-
- Exchange differences	(30)	55
- Transfer to contribution plan	(4)	-
Total changes	32	274
Balance at 31 December	1,676	1,644

The fair value of the plan assets consists of 96% of quoted assets (2019: 97%).

The actuarial gains/losses as included in the previous tables can be specified as follows.

Remeasurement effects as included in Other comprehensive income

	2020	2019
Defined benefit obligation major pension plans		
Actuarial (gain)/loss due to experience	9	36
Actuarial (gain)/loss due to demographic assumption changes	3	(4)
Actuarial (gain)/loss due to financial assumption changes	102	184
Total	**114**	**216**
Plan assets major pension plans		
Change in irrecoverable surplus other than interest	(2)	-
Return on plan assets (greater) / less than discount rate	(89)	(192)
Total	**(91)**	**(192)**
Actuarial (gain)/loss major plans	**23**	**24**
Actuarial (gain)/loss other plans	-	-
Total actuarial (gain)/loss	**23**	**24**

The major categories of pension-plan assets as a percentage of total plan assets are as follows.

Pension-plan assets by category

	2020	2019
Bonds[1]	45%	45%
Equities[1]	29%	30%
Property funds	17%	17%
Other	9%	8%

1 With quoted market price in active market

The pension-plan assets include neither ordinary DSM shares nor property occupied by DSM.

In 2021, DSM is expected to contribute €35 million (actual 2020: €41 million) to its major defined benefit plans.

The main actuarial assumptions for the year (weighted averages) are:

Actuarial assumptions for major plans outside the Netherlands

	2020	2019
Discount rate	0.53%	0.92%
Price inflation	1.42%	1.44%
Salary increase	2.07%	2.08%
Pension increase	0.75-2.50%	0.80-2.25%

Year-end amounts for the current and previous periods are as follows.

Major defined benefit plans per year

	2020	2019	2018	2017	2016
Defined benefit obligations	(2,110)	(2,079)	(1,808)	(1,675)	(1,806)
Plan assets	1,676	1,644	1,370	1,301	1,297
Funded status of asset/(liability)	**(434)**	**(435)**	**(438)**	**(374)**	**(509)**
Experience adjustments on plan assets, gain/(loss)	89	192	(94)	115	60
Experience adjustments on plan liabilities, gain/(loss)	(9)	(36)	(35)	(24)	15
Gain/(loss) on liabilities due to changes in assumptions	(105)	(180)	52	(21)	(80)

Sensitivities of significant actuarial assumptions

The discount rate, the future increase in wages and salaries and the pension increase rate were identified as significant actuarial assumptions. The following impacts on the defined benefit obligation are to be expected.

- A 0.25% increase/decrease in the discount rate would lead to a decrease/increase of 3.9% (2019: 3.8%) in the defined benefit obligation
- A 0.25% increase/decrease in the expected increase in salaries/wages would lead to an increase/decrease of 0.3% (2019: 0.3%) in the defined benefit obligation
- A 0.25% increase/decrease in the expected rate of pension increase would lead to an increase/decrease of less than 2.0% (2019: 1.0%) in the defined benefit obligation

The sensitivity analysis is based on realistically possible changes as at the end of the reporting year. Each change in a significant actuarial assumption was analyzed separately as part of the test. Interdependencies were not taken into account.

Healthcare and other costs

In some countries, particularly the US, group companies provide retired employees and their surviving dependents with post-employment benefits other than pensions, mainly allowances for healthcare expenses and life-insurance premiums. Some of these are unfunded; in these cases, approved expense claims are reimbursed out of the financial resources of the group companies concerned. These plans are not sufficiently material to warrant the individual disclosures required by IAS 19.

25 Net debt

The development of the components of net debt is as follows.

	Cash and cash equivalents	Current investments	Non-current borrowings	Current borrowings	Credit institutions	Derivatives	Total
Balance at 1 January 2019	1,281	1,277	(2,272)	(308)	(72)	(19)	(113)
Change from operating activities	1,385	-	(8)	-	-	28	1,405
Change from investing activities	(525)	(589)	(27)	-	(2)	3	(1,140)
Reclassification from non-current to current	-	-	50	(50)	-	-	-
Opening balance lease liabilities (adoption)	-	-	(215)	-	-	-	(215)
Transfers	(290)	-	46	301	(57)	-	-
Dividend	(291)	-	-	-	-	-	(291)
Interest	(62)	-	-	-	-	5	(57)
Proceeds from reissued shares	180	-	-	-	-	-	180
New/unwinding leases	-	-	(39)	-	-	-	(39)
Repurchase of shares	(869)	-	-	-	-	-	(869)
Derivatives	-	-	-	-	-	(6)	(6)
Other	-	-	2	-	-	-	2
Change from financing activities	(1,332)	-	(156)	251	(57)	(1)	(1,295)
Exchange differences	(9)		(1)		(1)	10	(1)
Total changes	(481)	(589)	(192)	251	(60)	40	(1,031)
Balance at 31 December 2019	800	688	(2,464)	(57)	(132)	21	(1,144)
Change from operating activities	1,494	-	(8)	-	-	90	1,576
Change from investing activities	(1,482)	(646)	(120)	(68)	(17)	-	(2,333)
Reclassification from non-current to current			142	(142)	-	-	-
Transfers	705	-	(1,011)	211	95	-	-
Dividend	(289)	-	-	-	-	-	(289)
Interest	(54)	-	-	-	-	-	(54)
Proceeds from reissued shares	63	-	-	-	-	-	63
New/unwinding leases	-	-	(34)	-	-	-	(34)
Repurchase of shares	(309)	-	-	-	-	-	(309)
Derivatives	-	-	-	-	-	-	-
Other	(33)	-	-	-	-	-	(33)
Change from financing activities	83	-	(903)	69	95	-	(656)
Exchange differences	(24)	1	14	-	1	(16)	(24)
Reclassification to held for sale	-	-	2	2	-	-	4
Total changes	71	(645)	(1,015)	3	79	74	(1,433)
Balance at 31 December 2020	871	43	(3,479)	(54)	(53)	95	(2,577)

In 2020, the gearing (net debt / equity plus net debt) was 25.6% (in 2019: 12.7%).

26 Notes to the cash flow statement

The cash flow statement provides an explanation of the changes in cash and cash equivalents. It is prepared on the basis of a comparison of the balance sheets at 1 January and 31 December. Changes that do not involve cash flows, such as changes in exchange rates, amortization, depreciation, impairment losses and transfers to other balance sheet items, are eliminated.

Changes in working capital due to the acquisition or disposal of consolidated companies are included under Investing activities.

The Consolidated cash flow statement includes an analysis of all cash flows in total, therefore including both continuing and discontinued operations. For the amounts related to discontinued operations split by activities and a reconciliation of results from continuing operations to total, see Note 3 Change in the scope of the consolidation.

Most of the changes in the cash flow statement can be traced back to the detailed statements of changes for the balance sheet items concerned. For those balance sheet items for which no detailed statement of changes is included, the table below shows the link between the change according to the balance sheet and the change according to the cash flow statement.

Change in operating working capital

	2020	2019
Operating working capital		
Balance at 1 January	2,266	2,138
Balance at 31 December	2,052	2,266
Balance sheet change	(214)	128
Adjustments:		
- Exchange differences	146	(52)
- Changes in consolidation (including acquisitions and disposals)	(96)	(67)
- Transfers/non-cash value adjustments	156	(61)
Total change in operating working capital according to the cash flow statement	(8)	(52)

In 2020, the operating working capital was €2,052 million (2019: €2,266 million total and €2,137 continuing operations), which amounts to 24.6% of annualized fourth quarter net sales (2019: 27.6% continuing operations).

27 Share-based compensation

The DSM Stock Incentive Plan provides rules for the grant of Restricted Share Units (RSU) and Performance Share Units (PSU) to eligible employees. Any grant of share units will be conducted on the last trading day at the Amsterdam Stock Exchange in March.

The number of share units to be granted is based on the face value of the DSM share. The grant value (depending on job level) to eligible employees will be divided by the average share price in January. As a result, the number of share units to be granted annually will fluctuate with the share price development. The grant concerns the maximum number of Restricted Share Units (RSUs) and Performance Share Units (PSUs) that may vest.

RSUs and PSUs are subject to a vesting period of 3 years starting at the grant date. Vesting of RSUs is subject to continued employment until the vesting date ('time vesting'). In addition, vesting of PSUs is also subject to the achievement of predefined performance targets at the end of the vesting period. The PSUs granted in 2020 are subject to the realization of four equally weighted goals:

- Relative Total Shareholder Return (TSR) performance versus a peer group
- Return on Capital Employed (ROCE) growth
- Energy Efficiency Improvement (EEI)
- Greenhouse Gas Emissions (GHGE) reduction

Non-vested share units will be forfeited. If employment is terminated prior to the vesting date, specific rules regarding vesting and forfeitures apply.

Prior to 2017, stock options were granted to eligible executives. Stock options have a term of 8 years and are subject to a vesting period of 3 years. All outstanding stock options are vested.

Share units and stock options are settled by delivery of DSM shares.

Overview of stock options[1]

Year of grant	Outstanding at 31 Dec. 2019	In 2020 Exercised	Average price (€)	Forfeited/ expired	Outstanding at 31 Dec. 2020	Fair value on grant date (€)	Exercise price (€)	Expiry date
2012	15,375	(15,375)	112.15	-	-	6.88	40.90	15 May 2020
2013	153,350	(68,100)	129.80	-	85,250	9.23	48.91	7 May 2021
2014	215,280	(77,655)	122.76	-	137,625	10.66	52.00	9 May 2022
2015	524,225	(211,825)	119.03	-	312,400	9.89	50.98	5 May 2023
2016	734,150	(202,505)	119.93	-	531,645	9.36	52.57	3 May 2024
2020 Total	**1,642,380**	**(575,460)**	**120.94**	**-**	**1,066,920**			
Of which vested	1,642,380				1,066,920			
	at 31 Dec. 2018				at 31 Dec. 2019			
2019 Total	4,249,980	(2,558,600)	101.48	(49,000)	1,642,380			
Of which vested	2,250,605				1,642,380			

1 This table also forms part of the Remuneration report 2020 as included in the Supervisory Board Report.

Overview of share units[1]

Year of issue	Outstanding at 31 Dec. 2019	In 2020 Granted	Vested	Forfeited/ expired[2]	Outstanding at 31 Dec. 2020	Share price at date of grant (€)	Expiry date
2017	325,000	-	(291,654)	(33,346)	-	67.33	5 May 2020
2018	243,410	-	(18,932)	(21,339)	203,139	80.04	31 Mar 2021
2019	317,233	-	(20,511)	(28,788)	267,934	97.74	31 Mar 2022
2020	-	232,714	(5,000)	(8,436)	219,278	103.50	31 Mar 2023
2020 Total	**885,643**	**232,714**	**(336,097)**	**(91,909)**	**690,351**		
	at 31 Dec. 2018				at 31 Dec. 2019		
2019 Total	652,120	328,088	(50,749)	(43,816)	885,643		

1 This table also forms part of the Remuneration report 2020 as included in the Supervisory Board Report.

2 Restricted and Performance Share Units may partly vest upon termination of employment in connection with, for example, divestments, retirement or early retirement.

Certain employees in the Netherlands are entitled to employee stock options, to be granted on the first day on which the DSM stock is quoted ex-dividend following the Annual General Meeting of Shareholders. The opening price of the DSM stock on that day is the exercise price of such stock options. Employee stock options can immediately be exercised and have a term of five years.

Overview of stock options for employees

Year of grant	Outstanding at 31 Dec. 2019	In 2020 Granted	Exercised	Average price (€)	Forfeited/ expired	Outstanding at 31 Dec. 2020	Fair value on grant date (€)	Exercise price (€)	Exercise period until
2015	8,985	-	(6,690)	111.57	(2,295)	-	4.50	50.98	May 2020
2016	47,780	-	(21,700)	126.47	(4,035)	22,045	4.38	52.57	May 2021
2017	83,205	-	(34,085)	129.96	(1,670)	47,450	6.14	67.33	May 2022
2018	181,570	-	(83,885)	130.00	(1,350)	96,335	8.50	85.00	May 2023
2019	316,270	-	(149,960)	130.01	(2,910)	163,400	8.88	98.00	May 2024
2020	-	190,630	(71,205)	135.97	(1,535)	117,890	10.26	112.00	May 2025
2020 Total	**637,810**	**190,630**	**(367,525)**	**130.61**	**(13,795)**	**447,120**			
	at 31 Dec. 2018					at 31 Dec. 2019			
2019 Total	784,995	482,600	(609,675)	104.43	(20,110)	637,810			

Measurement of fair value

The costs of share units are measured by reference to the fair value of the DSM share at the date on which the share units are granted, ex-dividend as the share units do not accumulate dividend during the three-year vesting period.

The costs of option plans are measured by reference to the fair value of the options at the date on which the options are granted. The fair value is determined using the Black-Scholes model, taking into account market conditions linked to the price of the DSM share. Stock-price volatility is determined on the basis of historical volatilities of the DSM share price measured each month over a period equal to the expected option life. The costs of these options are recognized in the income statement (Employee benefit costs).

Assumptions determining fair value

The following assumptions were used to determine the fair value at grant date.

Plan assumptions

	2020	2019
Share units		
Risk-free rate	-0.69%	-0.57%
Expected share life in years	3	3
Nominal share life in years	3	3
Share price in €	103.50	97.74
Expected dividend in €	7.20	6.90
Fair value of share granted in €	96.30	90.84
Employee options		
Risk-free rate	-0.74%	-0.59%
Expected option life in years	2.5	2.5
Nominal option life in years	5	5
Share price in €	112.10	98.00
Exercise price in €	112.10	98.00
Volatility	20.0%	20.0%
Expected dividend	2.14%	2.35%
Fair value of option granted in €	10.26	8.88

An amount of €29 million is included in the costs for wages and salaries for share-based compensation (2019: €34 million). The following table specifies the share-based compensation.

Share-based compensation

	2020	2019
Employee stock options	2	4
Share units	19	22
Performance shares	8	8
Total expense	29	34

28 Related parties

Koninklijke DSM N.V. is the group holding company that is listed on the Euronext Amsterdam stock exchange. The financial statements of the company are included in the section Parent company financial statements.

In the ordinary course of business, DSM buys and sells goods and services from/to various related parties in which DSM has significant influence. Transactions are conducted under terms and conditions that are equivalent to those that apply to arm’s length transactions.

Transactions and relationships with related parties are reported in the table below.

Transactions with related parties

	Joint ventures		Associates	
	2020	2019	2020	2019
Sales to	1	1	8	13
Purchases from	1	-	50	52
Loans to	-	-	4	3
Receivables from	1	1	43	42
Payables to	-	-	5	5
Interest from	-	-	1	-
Commitments to	-	-	3	4

DSM may issue guarantees as credit enhancement of associates to acquire bank facilities for these associates. DSM has provided guarantees to third parties for debts of associates and to a third party (a former associate) for an amount of €78 million (2019: €59 million).

Other related-parties disclosures relate entirely to key management of DSM, being represented by the company's Managing Board, Executive Committee and the Supervisory Board. For further details about their remuneration, see Note 13 to the Parent company financial statements.

29 Service fees paid to external auditors

The service fees recognized in the financial statements 2020 for the services of KPMG amounted to €5.7 million (2019: €5.4 million). The amounts per service category are shown in the following table.

	Total service fee		Of which	
	KPMG	KPMG	KPMG NL	KPMG NL
	2020	2019	2020	2019
Audit of the Group financial statements	4.5	4.3	3.0	2.8
Audit of other (statutory) financial statements	0.6	0.5	-	0.1
Other assurance services	0.6	0.6	0.6	0.6
Total assurance services	5.7	5.4	3.6	3.5

The service fees mentioned in the table for the audit of the financial statements 2020 (2019) relate to the total fees for the audit of the financial statements 2020 (2019), irrespective of whether the activities have been performed during the financial year 2020 (2019). KPMG did not provide any non-assurance services (2019: similar). The services rendered by KPMG NL in 2020 in addition to the statutory audits include assurance engagements on non-financial information, on internal controls of DSM Pension Services, government grants and regulatory filings, as well as agreed-upon procedures on certain information for the Remuneration Committee of Royal DSM and the pension fund and their external auditor.

30 Events after the balance sheet date

There were no reportable events after balance sheet date.

Parent company financial statements

Balance sheet at 31 December of Koninklijke DSM N.V. before profit appropriation

x € million	Notes	2020	2019
Assets			
Intangible assets	2	871	428
Property, plant and equipment	3	-	12
Financial assets	4	11,976	10,747
Deferred tax assets	5	132	71
Other deferred items		2	2
Non-current assets		12,981	11,260
Receivables	6	63	101
Cash and cash equivalents		-	1
Current assets		63	102
Total		13,044	11,362
Shareholders' equity and liabilities			
Issued share capital		338	338
Share premium		489	489
Treasury shares		(976)	(905)
Translation reserve	7	(289)	162
Reserve for capitalized development costs	7	223	267
Reserve for participating interests	7	120	116
Revaluation reserve	7	-	5
Hedging reserve	7	(68)	(122)
Other reserves	7	114	51
Retained earnings		7,082	6,711
		7,033	7,112
Net profit for the year		506	758
Less: Interim dividend		(140)	(139)
Undistributed profit		366	619
Shareholders' equity	7	7,399	7,731
Borrowings	8	3,237	2,244
Other non-current liabilities		8	8
Non-current liabilities		3,245	2,252
Current liabilities			
Borrowings	8	-	-
Derivatives		-	1
Other current liabilities	9	2,400	1,378
Current liabilities		2,400	1,379
Total		13,044	11,362

The accompanying notes are an integral part of these parent company financial statements.

Income statement of Koninklijke DSM N.V.

x € million	Notes	2020	2019
Other income	1	20	184
Cost of outsourced work and other external costs		(17)	(88)
Wages and salaries	11	(9)	(70)
Social security and pension charges		-	(8)
Other operating expense		(2)	(10)
Total operating expenses		(28)	(176)
Operating profit		(8)	8
Financial expense	12	(95)	(79)
Profit before income tax		(103)	(71)
Income tax	5	24	23
Share of the profit of subsidiaries	4	585	800
Profit after income tax		506	752
Other results related to associates and joint ventures	4	-	6
Net profit available to equity holders of Koninklijke DSM N.V.		506	758

Notes to the parent company financial statements

1 General

Unless stated otherwise, all amounts are in € million.

Summary of the accounting policies

These separate financial statements have been prepared in accordance with Title 9, Book 2 of the Dutch Civil Code. The accounting policies used are the same as those used in the consolidated EU-IFRS financial statements, in accordance with the provisions of article 362-8 of Book 2 of the Dutch Civil Code.

In these separate financial statements, investments in subsidiaries are accounted for using the net asset value, with separate presentation of the goodwill component under intangible fixed assets. Results on transactions involving the transfer of assets and liabilities between the Company and its participating interests and mutually between participating interests themselves, are eliminated to the extent that they can be considered as not realized. For an appropriate interpretation of these statutory financial statements, the separate financial statements should be read in conjunction with the consolidated financial statements.

Participating interests with a negative net asset value are valued at nil. This measurement also covers any receivables provided to the participating interests that are, in substance, an extension of the net investment. In particular, this relates to loans for which settlement is neither planned nor likely to occur in the foreseeable future. A share in the profits of the participating interest in subsequent years will only be recognised if and to the extent that the cumulative unrecognised share of loss has been absorbed. If the Company fully or partially guarantees the debts of the relevant participating interest, or if has the constructive obligation to enable the participating interest to pay its debts (for its share therein), then a provision is recognised accordingly to the amount of the estimated payments by the Company on behalf of the participating interest.

Information on the use of financial instruments and on related risks for the group is provided in Note 23 of the consolidated financial statements. The Company makes use of the option to eliminate intragroup expected credit losses against the book value of loans and receivables from the Company to participating interests, instead of elimination against the equity value / net asset value of the participating interests.

Other income consists mainly of the charge out of the parent company related corporate overhead and services to the group companies.

Statutory and fiscal seat

The statutory seat of Koninklijke DSM N.V. is Het Overloon 1, Heerlen (Netherlands). A list of Koninklijke DSM N.V.'s participations has been filed with the Chamber of Commerce (Netherlands) and is available from the company upon request, as well as on the company website. DSM is registered in the Dutch Commercial Register under number 14022069.

The company forms a fiscal unity for corporate income tax and VAT purposes together with the group companies in the Netherlands. Each of the companies recognizes the portion of corporate income tax that the relevant company would owe as an independent tax payer, taking into account the tax liabilities applicable to the company.

Change in structure

As per 1 January 2020 the Corporate service activities have been transferred from Koninklijke DSM N.V. to a separate legal entity, DSM Services B.V. As a result, the associated balance sheet and income statement items are no longer part of the financial statements of Koninklijke DSM N.V. The impact on the individual balance sheet items is included in the notes. The income statement represents in 2020 the items which are related to the parent company only.

2 Intangible assets

The carrying amount of intangible assets comprises goodwill on the acquisition of Erber Group in 2020 (€469 million, representing 90% of the total goodwill of € 522 million; the remaining goodwill of €53 million has been recognized by a subsidiary of Koninklijke DSM N.V., as 10% of the shares in the Erber Group have been acquired by that subsidiary), see also Note 3 Change in the scope of the consolidation of the 'Consolidated financial statements', NeoResins in 2005 (€358 million), Crina in 2006 (€8 million) and Pentapharm in 2007 (€36 million). For full information on these assets including the discussion of the related impairment tests, see Note 8 Intangible assets to the 'Consolidated financial statements'. Other intangible assets are related to the Corporate service activities and have therefore been transferred at book value to the services company, see Note 1 General.

Intangible assets of Koninklijke DSM N.V.

	Goodwill	Under construction	Other	Total
Balance at 1 January 2019				
Cost	400	4	85	489
Amortization and impairment losses	-	-	58	58
Carrying amount	**400**	**4**	**27**	**431**
Changes in carrying amount:				
- Capital expenditure	-	3	-	3
- Put into operation	-	(3)	3	-
- Exchange difference	2	-	-	2
- Amortization	-	-	(8)	(8)
Balance at 31 December 2019				
Cost	402	4	88	494
Amortization and impairment losses	-	-	(66)	(66)
Carrying amount	**402**	**4**	**22**	**428**
Changes in carrying amount:				
- Acquisition	469	-	-	469
- Intragroup transfer	-	(4)	(22)	(26)
Balance at 31 December 2020				
Cost	871	-	-	871
Amortization and impairment losses	-	-	-	-
Carrying amount	**871**	**-**	**-**	**871**

3 Property, plant and equipment

On 1 january 2020, all land and buildings owned by Koninklijke DSM N.V. were transferred at their book value (€12 million) to DSM Services B.V. As a result of this transfer no Property, plant and equipment remains at the balance sheet of Koninklijke DSM N.V.

4 Financial assets

	Share in Subsidiaries	Other participating interests	Receivables	Total
Balance at 1 January 2019	10,407	37	36	10,480
Changes:				
- Share in profit	800	-	-	800
- Charged to income statement	-	-	(9)	(9)
- Dividend received	(877)	-	-	(877)
- Capital payments	254	-	-	254
- Net actuarial gains/(losses)	(16)	-	-	(16)
- Change in Fair value reserve	(19)	(1)	-	(20)
- Change in Hedging reserve	21	-	-	21
- Exchange differences	129	-	-	129
- Other	(13)	-	(2)	(15)
Balance at 31 December 2019	10,686	36	25	10,747
Changes:				
- Share in profit	585	-	-	585
- Charged to income statement	-	-		-
- Dividend received	(227)	-	-	(227)
- Capital payments	715	-	-	715
- Acquisition of subsidiaries	392	-	-	392
- Net actuarial gains/(losses)	(19)	-	-	(19)
- Change in Fair value reserve	93	5	-	98
- Change in Hedging reserve	31	-	-	31
- Exchange differences	(453)	-	-	(453)
- Intra-group transfers	130	-	-	130
- Other	(20)	-	(3)	(23)
Balance at 31 December 2020	11,913	41	22	11,976

The Intra-group transfer of €130 million relates to the transfer of the Corporate service departments into a separate legal entity.

5 Deferred tax assets

The deferred tax asset of €132 million relates to net operating losses and temporary differences in the Dutch fiscal unity, of which €44 million is recoverable within 1 year. Main movement of the deferred tax asset in 2020 is a tax income of €24 million was included, which represents an effective tax rate of 23.3% (2019: tax income of €23 million, representing an effective tax rate of 32.4%). Other movements of the deferred tax assets (mainly settlements with group companies and utilization of net operating gain) amounts to €9 million (2019: -€34 million).

The effective tax rate in 2020 was positively impacted by tax exempt income and non-deductible expenses. In 2019 the tax exempt and non-deductible items caused an increase of the effective tax rate, together with some other effects.

6 Receivables

	2020	2019
Receivables from subsidiaries	49	94
Other receivables	14	7
Total	63	101

The carrying values of the receivables are a reasonable approximation of their respective fair values, given the short maturities of the positions and the fact that allowances for doubtful debts have been recognized, if necessary.

7 Shareholders' equity

	2020	2019
Balance at 1 January	7,731	7,782
Net profit for the year	506	758
Exchange differences, net of income tax	(451)	125
Net actuarial gains/(losses) on defined benefit obligations	(20)	(15)
Net fair value changes in Other participating interests	98	(16)
Dividend	(423)	(414)
Repurchase of shares	(309)	(869)
Proceeds from reissue of ordinary shares	206	324
Other changes	61	56
Balance at 31 December	7,399	7,731

For details see the consolidated statement of changes in Note 16 Equity to the 'Consolidated financial statements'.

Legal reserves

In Shareholders' equity, a total amount of -€14 million (2019: €428 million) is included for legal reserves required by Dutch law, of which -€289 million (2019: €162 million) Translation reserve, €223 million (2019: €267 million) reserve for capitalized development costs, €120 million (2019: €116 million) reserve for participating interests and -€68 million (2019: -€122 million) as hedging reserve relating to cashflow hedge accounting. The translation reserve relates to exchange gains and losses arising from the translation of the functional currency of foreign operations to the reporting currency of Koninklijke DSM N.V. The legal reserve for participating interests is recorded to the extent that there are limitations for Koninklijke DSM N.V. to arrange profit distributions from its participating interests. In addition, a revaluation reserve of €0 million (2019: €5 million) has been included for fair value changes of unquoted equity instruments of participating interests owned by DSM; the debit balance of -€6 million in 2020 is recorded as part of Other reserves, which are considered freely distributable reserves.

Other reserves

The Other reserves amounting to €114 million (2019: 51 million) comprise a Fair value reserve of €79 million (2019: €0 million), the debit balance of -€6 million of the legal reserve for fair value changes of unquoted equity instruments of participating interests owned by DSM, and a Reserve for share-based compensation of €41 million (2019: €51 million).

In the 'Consolidated financial statements', the Other reserves consist of the Translation reserve, Fair value reserve, Hedging reserve and Reserve for share-based compensation. See Note 16 Equity to the 'Consolidated financial statements'.

Profit appropriation

According to article 32 of the Articles of Association of Koninklijke DSM N.V. and with the approval of the Supervisory Board, every year the Managing Board determines the portion of the net profit to be appropriated to the reserves. For the year 2020, the net profit is €506 million (2019: €758 million) and the amount to be appropriated to the reserves has been established at €86 million (2019: €333 million). From the subsequent balance of the net profit of €420 million (2019: €425 million), dividend is first distributed on the cumulative preference shares B. At the end of 2020 no cumprefs B were in issue (same as for 2019). Subsequently, a 2.94% (2019: 3.26%) dividend is distributed on the cumulative preference shares A, based on a share price of €5.29 (2019: €5.29) per cumulative preference share A. For 2020, this distribution amounts to €0.16 (2019: €0.17) per share, which is €7 million in total. An interim dividend of €0.06 per cumulative preference share A paid in August 2020, the final dividend will then amount to €0.10 per cumulative preference share A.

The profit remaining after distribution of these dividends on the cumulative preference shares A of €413 million (2019: €417 million) will be put at the disposal of the Annual General Meeting of Shareholders in accordance with the provisions of Article 32, section 5 of the Articles of Association.

The Managing Board proposes a dividend on ordinary shares outstanding for the year 2020 of €2.40 (2019: €2.40) per share. With an interim dividend of €0.80 (2019: €0.77) per ordinary share paid in August 2020, the final dividend will then amount to €1.60 (2019: €1.63) per ordinary share.

If the Annual General Meeting of Shareholders makes a decision in accordance with the proposal, the net profit will be appropriated as follows.

in € million	2020	2019
Net profit for the year	506	758
Profit appropriation:		
- To be added to the reserves	86	333
- Dividend on cumprefs A	7	8
- Interim dividend on ordinary shares	137	136
- Final dividend distributable on ordinary shares	276	281

8 Borrowings

	2020		2019	
	Total	Of which current	Total	Of which current
Debenture loans	3,237	-	2,244	-
Total	3,237	-	2,244	-

At 31 December 2020, there were six debenture loans (€3,237 million, maturing in 2022, 2024 and from 2025 through 2032).

The repayment schedule for borrowings is as follows.

Borrowings by maturity

	2020	2019
2021	-	-
2022	500	500
2023	-	-
2024 and 2025	997	997
After 2025	1,740	747
Total	3,237	2,244

In agreements governing loans with a residual amount at year-end 2020 of €3,237 million (31 December 2019: €2,244 million), clauses have been included which restrict the provision of security. More information on borrowings is provided in Note 19 to the 'Consolidated financial statements'.

9 Other current liabilities

	2020	2019
Liabilities to subsidiaries	2,308	1,333
Other liabilities	92	45
Total	2,400	1,378

The Liabilities to subsidiaries concerns mainly the current account towards the DSM internal financing company. These liabilities carry a short-term maturity and are interest-bearing. The increase of this current account in 2020 is mainly caused by capital payments, dividend payments, repurchase of own shares, offset by dividend receipts from subsidiaries. The carrying values of the recorded liabilities are a reasonable approximation of their respective fair values, given the short maturities of the positions.

10 Contingent liabilities

Guarantee obligations on behalf of affiliated companies and third parties amounted to €521 million (31 December 2019: €502 million). Koninklijke DSM N.V. has declared in writing that it accepts several liabilities for debts arising from acts in law of a number of consolidated companies (including relating to the Dutch fiscal unity for income tax and VAT). These debts are included in the consolidated balance sheet.

11 Personnel

The average number of employees working for Koninklijke DSM N.V. in 2020 was 2 (2019: 3).

12 Financial income and expense

Financial expense of €95 million (2019: net €79 million) mainly consists of the interest costs on bonds issued and the counterpart of the net investment hedge. See also Note 19 Borrowings and Note 23 Financial instruments and risks to the 'Consolidated financial statements'.

13 Remuneration of Managing Board and Supervisory Board

Disclosure of the total board remuneration is based on section 383 book 2 of the Dutch Civil Code. Furthermore, the members of the Executive Committee (which includes the Managing Board) and the Supervisory Board meet the definition of key management personnel as defined in IAS 24 'Related Parties'. IAS 24 requires disclosure of the total of short-term employee benefits (salary and short-term incentive), post-employment (pension expenditure) and other long-term benefits (none), termination benefits and share-based payment cost (share-based compensation), which are reported in the table below.

Key management personnel compensation and total board remuneration

	2020	2019
Salary	5,145	4,695
Short-term incentive	2,679	2,565
Pension expenditure	956	982
Share-based compensation	7,526	6,494
Other[1]	3,628	2,022
Total key management personnel compensation	**19,934**	**16,758**
Of which: Managing Board remuneration[1, 2]	12,096	7,705
Supervisory Board remuneration	806	826

1 Includes €2,629 million (2019: €1,265 million), subject to article 32bb of the Dutch Wage Tax Act, being an expense to the company due to vesting of share units already granted in previous years.

2 See Remuneration report 2020.

Heerlen, 1 March 2021

Managing Board,

Geraldine Matchett, Co-CEO
Dimitri de Vreeze, Co-CEO

Heerlen, 1 March 2021

Supervisory Board,

Rob Routs, Chair
Pauline van der Meer-Mohr, Deputy Chair
Eileen Kennedy
Thomas Leysen
Erica Mann
Frits van Paasschen
Pradeep Pant
John Ramsay

Other information

Independent auditor's report

To: the Annual General Meeting of Shareholders and the Supervisory Board of Koninklijke DSM N.V.

Report on the audit of the financial statements 2020 included in the Integrated Annual Report

Our opinion

In our opinion:

- the accompanying consolidated financial statements give a true and fair view of the financial position of Koninklijke DSM N.V. (hereafter: Royal DSM) as at 31 December 2020 and of its result and its cash flows for the year then ended, in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code.
- the accompanying parent company financial statements give a true and fair view of the financial position of Royal DSM as at 31 December 2020 and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

What we have audited

We have audited the financial statements 2020 of Royal DSM based in Heerlen. The financial statements include the consolidated financial statements and the parent company financial statements.

The consolidated financial statements comprise:

1. the consolidated balance sheet as at 31 December 2020;
2. the following consolidated statements for 2020: the income statement, the statements of comprehensive income, changes in equity and cash flows; and
3. the notes comprising a summary of the significant accounting policies and other explanatory information.

The parent company financial statements comprise:

1. the parent company balance sheet as at 31 December 2020;
2. the parent company income statement for 2020; and
3. the notes comprising a summary of the accounting policies and other explanatory information.

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. Our responsibilities under those standards are further described in the 'Our responsibilities for the audit of the financial statements' section of our report.

We are independent of Royal DSM in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Audit approach

Summary

Materiality

- Materiality of EUR 45 million
- 5.9% of normalized profit before income tax expense

Group audit

- Audit at (business) group and local entity level resulting in a coverage of 73% of net sales and 79% of total assets

Key audit matters

- Impairment of cash generating units DAS and BP&S
- Accounting for acquisitions of Glycom and Erber
- Announced divestment of Resins and Functional Materials and associated businesses

Opinion

Unqualified

Materiality
Based on our professional judgement we determined the materiality for the financial statements as a whole at EUR 45 million (2019: EUR 45 million). The materiality is determined with reference to profit before income tax expense, normalized for acquisition/divestment related expenses and current year's impairments of the cash generating units DSM Advanced Solar and DSM Bio-based Products & Services to arrive at a normalized level, resulting in a percentage of 5.9% (2019: 5.5%). We consider this normalized profit before income tax expense as the most appropriate benchmark following our analysis of the common information needs of users of the financial statements. For 2020 and 2019, this benchmark has been influenced by the announced divestment of the Resins and Functional Materials and associated businesses. Although included in net profit for the year, the results of these businesses and related activities have been presented separate from continuing operations, and are no longer part of (normalized) profit before income tax expense. In addition, the appropriateness of the materiality was assessed by comparing the amount to consolidated net sales of which it represents 0.6% (2019: 0.6%). We have also taken into account misstatements and/or possible misstatements that in our opinion are material for the users of the financial statements for qualitative reasons.

We agreed with the Supervisory Board that misstatements in excess of EUR 2 million (2019: EUR 2 million) which are identified during the audit, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

Scope of the group audit
Royal DSM is at the head of a group of components. The financial information of this group is included in the financial statements of Royal DSM.

Because we are ultimately responsible for the auditor's report, we are also responsible for directing, supervising and performing the group audit. In this respect we have determined the nature and extent of the audit procedures to be carried out for components reporting for group audit purposes. Decisive were the size and/or the risk profile of the components or operations. Based on our risk assessment, we selected 26 components (2019: 22 components) to perform audits for group reporting purposes on a complete set of financial information. In addition, we selected 16 components (2019: 14 components) to perform specified audit procedures for group reporting purposes on specific items of financial information.

This resulted in a coverage of 73% (2019: 73%) of total net sales and 79% (2019: 76%) of total assets. The remaining 27% of total net sales (2019: 27%) and 21% of total assets (2019: 24%) is represented by a significant number of components ('Remaining components'), none of which individually represent more than 3% of total net sales and 2% of total assets.

For these remaining components, we performed among others analytical procedures to validate our assessment that there are no risks of material misstatement within these components.

Our procedures as described above can be summarized as follows:

Total assets

70%	9%	21%
Full scope audit	Specified audit procedures	Central procedures remaining components

Total net sales

55%	18%	27%
Full scope audit	Specified audit procedures	Central procedures remaining components

We have:

- performed audit procedures at group level in respect of areas such as the annual goodwill impairment tests, other asset impairment assessments, accounting for associates and joint ventures, income tax for the Dutch fiscal unities, acquisitions of subsidiaries, accounting for divestments, restructuring provisions, treasury and shared service centers; and
- used the work of local KPMG and non-KPMG auditors (both 'component auditors') when auditing financial information or performing specified audit procedures at business group and component level.

The group audit team has set materiality levels for the components, which ranged from EUR 2 million to EUR 12.5 million (2019: EUR 5 million to EUR 12.5 million), based on the mix of size and risk profile of the respective components.

The group audit team provided detailed instructions to all business group and component auditors part of the group audit, covering the significant audit areas, including the relevant risks of material misstatement, and the information required to be reported back to the group audit team.

As part of our original audit plan to evaluate the component auditors' communications and the adequacy of their work, we intended to visit the component auditors and component locations in the United States of America, Switzerland, China, Denmark, Spain and the shared service center in India to review selected component auditor documentation. In view of restrictions on the movement of people across borders, and also within significantly affected countries, due to the Covid-19 pandemic, the group audit team considered how to make appropriate changes to the audit plan. Due to the aforementioned restrictions, travelling generally was not practicable, and we only visited in person the component auditors and Royal DSM's locations in Denmark. As a result, we have requested other component auditors to provide us with remote access to audit workpapers to perform these evaluations. In addition, due to the inability to arrange in-person meetings with such component auditors and local management, we have increased the use of alternative methods of communication with them, including issuing additional written instructions, exchange of emails and virtual meetings.

Virtual meetings were held with all component auditors that participated in the group audit. During these (virtual) meetings, we discussed the audit approach and the audit findings and observations reported to the group audit team.

By performing the procedures mentioned above at components, together with additional procedures at (business) group level, we have been able to obtain sufficient and appropriate audit evidence about the group's financial information to provide an opinion about the financial statements.

Our focus on the risk of fraud and non-compliance with laws and regulations

Our objectives

The objectives of our audit with respect to fraud and non-compliance with laws and regulations are as follows.

With respect to fraud:

- to identify and assess the risks of material misstatement of the financial statements due to fraud;
- to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud, through designing and implementing appropriate audit responses;
- to obtain a high (but not absolute) level of assurance that the financial statements, taken as a whole, are free from material misstatement, due to fraud; and
- to respond appropriately to fraud or suspected fraud identified during the audit.

With respect to non-compliance with laws and regulations:

- to identify and assess the risk of material misstatement of the financial statements due to non-compliance with laws and regulations; and
- to obtain a high (but not absolute) level of assurance that the financial statements, taken as a whole, are free from material misstatement, due to such non-compliance when considering the applicable legal and regulatory framework.

The primary responsibility for the prevention and detection of fraud and non-compliance with laws and regulations lies with the Managing Board, with oversight by the Supervisory Board.

Our risk assessment

As part of our process of identifying fraud risks, we evaluated fraud risk factors with respect to fraudulent financial reporting and misappropriation of assets. We, together with our forensics specialists, evaluated the fraud risk factors to consider whether those factors indicated a risk of material misstatement due to fraud.

In addition, we performed procedures to obtain an understanding of the legal and regulatory frameworks that are applicable to Royal DSM and we inquired the Managing Board and the Supervisory Board as to whether Royal DSM is in compliance with such laws and regulations and inspected correspondence, if any, with relevant licensing and regulatory authorities.

The potential effect of the identified laws and regulations on the financial statements varies considerably.

Firstly, Royal DSM is subject to laws and regulations that directly affect the financial statements, including taxation and financial reporting. We assessed the extent of compliance with these laws and regulations as part of our audit procedures on the related financial statement items.

Secondly, Royal DSM is subject to many other laws and regulations for which the consequences of non-compliance could have an indirect material effect on amounts recognized or disclosures provided in the financial statements, or both, for instance through the imposition of fines or litigation. We identified the following areas as those most likely to have such an indirect effect:

- Competition legislation (reflecting Royal DSM’s operations across the world and potential investigations by national competition authorities);
- Health and safety regulation (reflecting the nature of Royal DSM’s production and distribution processes);
- Employment legislation (reflecting Royal DSM’s significant and geographically diverse work force);
- Consumer product law relating to product safety (reflecting the nature of Royal DSM’s diverse product base);
- Environmental regulation (reflecting the environmental clean-up responsibilities related to mainly Royal DSM’s former production and distribution processes).

In accordance with the auditing standards we evaluated the following fraud risks that are relevant to our audit, including the relevant presumed risks:

- fraud risk in relation to revenue recognition (presumed risk), specifically being the risk of manual override with respect to the cut-off of revenue; and
- fraud risk in relation to management override of controls to meet targets and/or expectations (presumed risk).

We communicated the identified risks of fraud throughout our team and remained alert to any indications of fraud and/or non-compliance throughout the audit. This included communication from the group to component teams of relevant risks of fraud identified at group level.

In all of our audits, we address the risk of management override of controls, including evaluating whether there was evidence of bias by management that may represent a risk of material misstatement due to fraud. We refer to the key audit matter ‘Accounting for the acquisitions of Glycom and the Erber Group’, which is an example of our approach related to areas of higher risk due to accounting estimates where management makes significant judgements.

We communicated our risk assessment and audit response to the Managing Board and the Supervisory Board. Our audit procedures differ from a specific forensic fraud investigation, which often has a more in-depth character.

Our response to the risks identified
We performed the following audit procedures (not limited) to respond to the assessed risks:

- We evaluated the design and implementation of internal controls that mitigate fraud risks.
- We performed data analysis on high-risk journal entries and evaluated key estimates and judgements for bias by management, such as estimates relating to goodwill impairment testing and accounting for acquisitions of subsidiaries, including retrospective reviews of prior year's estimates. Where we identified instances of unexpected journal entries or other risks through our data analytics, we performed additional audit procedures to address each identified risk. These procedures also included testing of transactions back to source information.
- We assessed matters included on the Royal DSM alert cases (whistleblower procedures) and fraud incidents, and the results of management's investigation of such matters.
- With respect to the risk of fraud of revenue recognition, we carried out inspection and testing of documentation such as agreements with customers and shipping documents.
- We incorporated elements of unpredictability in our audit.
- We considered the outcome of our other audit procedures and evaluated whether any findings or misstatements were indicative of fraud or non-compliance.
- We obtained audit evidence regarding compliance with the provisions of those laws and regulations generally recognized to have a direct effect on the determination of material amounts and disclosures in the financial statements.

We do note that our audit is based on the procedures described in line with applicable auditing standards. In addition to the requirements of the auditing standards we have performed the following procedures as part of our risk assessment:

- An assessment of DSM's activities with respect to cyber security threats; and
- Data-analyses on revenue and purchase related areas, for a selection of components rotating year over year.

Our procedures to address identified risks of fraud did not result in a key audit matter.

We do note that our audit is not primarily designed to detect fraud and non-compliance with laws and regulations and that the Managing Board is responsible for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to errors or fraud, including compliance with laws and regulations.

The more distant non-compliance with indirect laws and regulations (irregularities) is from the events and transactions reflected in the financial statements, the less likely it is that the inherently limited procedures required by auditing standards would identify it. In addition, as with any audit, there remained a higher risk of non-detection of irregularities, as these may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.

Our key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements. We have communicated the key audit matters to the Supervisory Board. The key audit matters are not a comprehensive reflection of all matters discussed.

These matters were addressed in the context of our audit of the financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Compared to last year the key audit matter with respect to the (announced) divestment of DSM Resins and Functional Materials and associated businesses has been added, because the announcement occurred in 2020.

Impairment of cash generating units DAS and BP&S

Description

As mentioned in Note 8 to the financial statements, the cash generating unit ('CGU') DSM Advanced Solar ('DAS'), is expecting insufficient future cashflows for the solar assets that remain following the announced sale of the solar coating activities to Covestro. Furthermore, the CGU DSM Bio-based Products & Services ('BP&S') is facing an expected subdued market outlook for biofuels, as also evidenced by the ceased activities of POET-DSM as mentioned in Note 10 to the financial statements.

These events are considered indications that the respective assets may be impaired and consequently Royal DSM performed impairment testing in respect of the abovementioned CGUs. As reflected in Note 8 to the financial statements, Royal DSM recognized an impairment of EUR 110 million with respect to its CGUs DAS and BP&S, which mainly relates to intangible assets. Given the financial impact of these events and the determination of the recoverable amounts, the accounting for these impairments is significant for our audit of the financial statements.

Our response

We evaluated the design and implementation of controls with respect to Royal DSM's impairment testing process. We assessed the appropriate identification of DAS and BP&S as separate CGUs. Since the impairment testing is related to CGUs for which insufficient future cash flows are expected, our audit procedures of evaluating the recoverable amount focused on assessing the fair value less costs to sell ('FVLCS'), which was assessed by Royal DSM as immaterial. Our audit procedures included, among others, inspecting board minutes of the decision-making and thus obtaining an understanding of the business rationale of the decisions made. We furthermore assessed the reasonableness of the residual value assumptions, by inspection of management's written plans, inquiry of management involved in the impairment testing process and by inspection of available external information. Finally, we assessed the adequacy of the disclosure (Note 8) to the financial statements.

Our observation

We consider that the impairments are appropriately reflected in the financial statements and we assessed the disclosure (Note 8) to the financial statements as being adequate.

Accounting for acquisitions of Glycom and Erber

Description

As disclosed in Note 3 to the financial statements, during 2020, Royal DSM completed the acquisitions of Glycom A/S and Erber Group. The acquisitions involved a total consideration of EUR 1,579 million and had an aggregated impact on Goodwill and Intangible assets of EUR 862 million and EUR 824 million respectively.

The acquisitions were significant to our audit due to the financial impact and complexity of purchase price accounting including related judgements and assumptions used in the determination of the fair values of assets acquired and liabilities assumed.

Our response

We inspected the agreements and other documents underlying the acquisitions to gain an understanding of the contractual terms and conditions to assess the consideration and the acquired identifiable assets and liabilities. We obtained the reports from the external valuation experts engaged by Royal DSM to assist management with the purchase price accounting and the identification of identifiable assets and liabilities in the respective business combinations. We involved valuation specialists to evaluate management's valuation models, and assumptions used such as growth rates and discount rates to arrive at the fair value of assets and liabilities recognized in the purchase price allocation. Our assessment of key assumptions used by management included a comparison with available external information such as market indices and financial metrics of peer companies.
We also evaluated the adequacy of the disclosure (Note 3) of the acquisitions in the financial statements.

Our observation

We consider that the outcome of the purchase price accounting is reasonable. The acquisitions are adequately disclosed in Note 3 to the financial statements.

Announced divestment of Resins and Functional Materials and associated businesses

Description

As disclosed in Note 3 to the financial statements, on 30 September 2020, Royal DSM announced their agreement to sell the Resins and Functional Materials and associated businesses ('RFM business') to Covestro, subject to certain conditions and approvals. Management concluded that the RFM business classifies as held for sale and should be presented as discontinued operations.

This event is significant to our audit because the assessment of the classification as asset held for sale and discontinued operations is complex, the transaction and its accounting is non-routine and involves a certain level of management judgement. These include, amongst others, determining the date of classification of the RFM business as held for sale and the presentation of its results separately as discontinued operations. This involves determining whether charges from other DSM group companies to the RFM business should be presented as part of continuing or discontinued operations. Furthermore, upon classification of the RFM business as discontinued operation, management had to measure this business at the lower of the carrying amount and its fair value less cost to sell.

Our response

We inspected the contractual agreements and other relevant documents underlying the announced divestment in order to understand key terms and conditions and to assess the accounting impact. Our audit procedures included, among others, an assessment of the appropriateness of the classification of the RFM business as held for sale and the presentation of its results as discontinued operations.

This included evaluating management's judgements over the identification of the disposal group, assessing the date as of which the RFM business is classified as held for sale, assessing the valuation of the assets of the RFM business at the lower of the carrying amount and fair value less cost of disposal, and testing the presentation of the RFM business in the financial statements. We evaluated the recognition and presentation of the results of the RFM business as discontinued operations in the financial statements by testing the allocation to continuing or discontinued operations, and by evaluating management's assumptions in allocating charges from other group companies to the RFM business.

Finally, we assessed the adequacy of both the presentation as assets held for sale and discontinued operations and the disclosure (Note 3) of the announced divestment in the financial statements.

Our observation

We consider that the measurement of the RFM business, as well as the presentation of its assets and liabilities as held for sale and its results as those from discontinued operations, is adequately reflected and disclosed in Note 3 to the financial statements.

Report on the other information included in the Integrated Annual Report

In addition to the financial statements and our auditor's report thereon, the Integrated Annual Report contains other information.

Based on the following procedures performed, we conclude that the other information:

- is consistent with the financial statements and does not contain material misstatements; and
- contains the information as required by Part 9 of Book 2 of the Dutch Civil Code.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing these procedures, we comply with the requirements of Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard 720. The scope of the procedures performed is less than the scope of those performed in our audit of the financial statements.

The Managing Board is responsible for the preparation of the other information, including the information as required by Part 9 of Book 2 of the Dutch Civil Code.

Report on other legal and regulatory requirements

Engagement

We were engaged by the Annual General Meeting of Shareholders as auditor of Royal DSM on 7 May 2014, as of the audit for the year 2015 and have operated as statutory auditor since that financial year.

No prohibited non-audit services

We have not provided prohibited non-audit services as referred to in Article 5(1) of the EU Regulation on specific requirements regarding statutory audits of public-interest entities.

Description of responsibilities regarding the financial statements

Responsibilities of the Managing Board and the Supervisory Board for the financial statements

The Managing Board is responsible for the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code. Furthermore, the Managing Board is responsible for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, the Managing Board is responsible for assessing the Royal DSM's ability to continue as a going concern.

Based on the financial reporting frameworks mentioned, the Managing Board should prepare the financial statements using the going concern basis of accounting unless the Managing Board either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so. The Managing Board should disclose events and circumstances that may cast significant doubt on Royal DSM's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing Royal DSM's financial reporting process.

Our responsibilities for the audit of the financial statements

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

A further description of our responsibilities for the audit of the financial statements is included in appendix of this auditor's report. This description forms part of our auditor’s report.

Amstelveen, 1 March 2021

KPMG Accountants N.V.

P.J. Groenland – van der Linden RA

Appendix:
Description of our responsibilities for the audit of the financial statements

Appendix

Description of our responsibilities for the audit of the financial statements

We have exercised professional judgement and have maintained professional scepticism throughout the audit, in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit included among others:

- identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than the risk resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Royal DSM’s internal control;
- evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Managing Board;
- concluding on the appropriateness of the Managing Board’s use of the going concern basis of accounting, and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on Royal DSM’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor’s report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause a company to cease to continue as a going concern;
- evaluating the overall presentation, structure and content of the financial statements, including the disclosures; and
- evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are solely responsible for the opinion and therefore responsible to obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the financial statements. In this respect we are also responsible for directing, supervising and performing the group audit.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit. In this respect we also submit an additional report to the Supervisory Board in accordance with Article 11 of the EU Regulation on specific requirements regarding statutory audits of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor’s report.

We provide the Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Supervisory Board, we determine the key audit matters: those matters that were of most significance in the audit of the financial statements. We describe these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

Assurance report of the independent auditor

To: the Annual General Meeting of Shareholders and the Supervisory Board of Koninklijke DSM N.V.

Report on the audit of the Sustainability Information 2020 included in the Integrated Annual Report

Our opinion

We have audited the sustainability information in the sections 'Key data', 'Co-CEO letter, 'Our approach to the Sustainable Development Goals', 'Report by the Managing Board', consisting of the sections Purpose, Strategy, Case studies, Stakeholders, People, Planet, the 'Non-financial reporting policy' and the 'Sustainability Statements', as included in the Integrated Annual Report for the year 2020 (hereafter: the 'Sustainability Information') of Koninklijke DSM N.V. (hereafter 'Royal DSM'), based in Heerlen, the Netherlands.

In our opinion, the Sustainability Information is prepared, in all material respects, in accordance with the GRI Sustainability Reporting Standards and Royal DSM's internally developed supplemental reporting criteria as disclosed in the section Non-financial reporting policy of the Integrated Annual Report.

Basis for our opinion

We performed our audit on the Sustainability Information in accordance with Dutch law, including 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 Assurance Engagements (ISAE) 3000 'Assurance Engagements Other than Audits or Reviews of Historical Financial Information'. This engagement is aimed to obtain reasonable assurance. Our responsibilities in this regard are further described in the 'Our responsibilities for the audit of the Sustainability Information' section of our report.

We are independent of Royal DSM in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence). Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

We believe the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Reporting criteria

The Sustainability Information needs to be read and understood together with the reporting criteria. Royal DSM is solely responsible for selecting and applying these reporting criteria, taking into account applicable law and regulations related to reporting.

The reporting criteria used for the preparation of the Sustainability Information are the GRI Sustainability Reporting Standards and Royal DSM's internally developed supplemental reporting criteria as disclosed in the section Non-financial reporting policy of the Integrated Annual Report.

The GRI Sustainability Reporting Standards are the most widely adopted global standards for sustainability reporting and are used by Royal DSM for reporting publicly on its Sustainability Information.

Materiality

Based on our professional judgement we determined materiality levels for each relevant part of the Sustainability Information as included in Royal DSM's Integrated Annual Report. When evaluating our materiality levels, we have taken into account quantitative and qualitative considerations as well as the relevance of information for both stakeholders and Royal DSM.

Scope of the group audit

Royal DSM is the head of a group of components. The Sustainability Information incorporates the consolidated information of this group of components.

Our group audit procedures consisted of audit procedures at corporate and component level. Our selection of components in scope of our assurance procedures is primarily based on the component's individual contribution to the consolidated Sustainability Information. Furthermore, our selection of components considered relevant reporting risks and geographical spread.

By performing our procedures at corporate and component level, we have been able to obtain sufficient and appropriate assurance evidence about Royal DSM's reported Sustainability Information to provide an opinion about the Sustainability Information.

Our key assurance matter

Key assurance matters of our audit are those matters that, in our professional judgement, were of most significance in our audit of the Sustainability Information. We have communicated the key assurance matter to the Managing Board and the Supervisory Board. The key assurance matter is not a comprehensive reflection of all matters discussed.

This assurance matter was addressed in the context of our audit of the Sustainability Information as a whole and we do not provide a separate opinion on this matter.

The sustainability indicator on Royal DSM's solutions labeled as Brighter Living Solutions was determined to be a key assurance matter as the assessment is inherently subject to assumptions and management judgement, whereas the determination of other important sustainability indicators on Safety, Health and Environment and Human Resources require such judgement to a lesser extent.

Brighter Living Solutions

Description
Royal DSM reports on Brighter Living Solutions ("BLS"), which are products and services that have specific environmental or social benefits compared to mainstream reference solutions.

The related KPI is defined as net sales from BLS as a percentage of total net sales of Royal DSM. BLS was significant to our audit since we identified that it serves as a material indicator for Royal DSM to report on the environmental and social impact of its solutions and because the assessment of solutions to qualify as BLS is inherently subject to assumptions and judgement.

Our response
We evaluated the reporting process, internal controls and the applicable definitions and criteria. We interviewed Royal DSM's staff members involved in the BLS assessment process to understand the application of these definitions and criteria and we challenged the underlying evidence, such as the life cycle assessments and expert opinions for solutions classified as BLS and assessed the calculation of the BLS percentage. Finally, we assessed whether the criteria, assumptions and definitions are adequately explained in the Integrated Annual Report and on the website of Royal DSM.

Our observation
We consider that the definitions and criteria for BLS as described in Royal DSM's internally developed supplemental reporting criteria, in the Non-financial reporting policy, are appropriately applied and that the assumptions are adequately explained. We also consider the disclosure on BLS as being adequate.

Limitations to the scope of our audit

The Sustainability Information includes prospective information such as ambitions, strategy, plans, expectations and estimates. Inherently the actual future results are uncertain. We do not provide any assurance on the assumptions and achievability of prospective information included in the aforementioned sections of Royal DSM's Integrated Annual Report.

References to external sources or websites in the Integrated Annual Report are not part of the Integrated Annual Report itself nor the Sustainability Information as audited by us. Therefore, we do not provide assurance on this information.

Responsibilities of the Managing Board and the Supervisory Board for the Sustainability Information

The Managing Board of Royal DSM is responsible for the preparation of the Sustainability Information in accordance with the GRI Sustainability Reporting Standards and Royal DSM's internally developed supplemental reporting criteria as disclosed in the section Non-financial reporting policy of Royal DSM's Integrated Annual Report, including the identification of stakeholders and the definition of material matters. The choices made by the Managing Board regarding the scope of the Sustainability Information and the reporting policy are summarized in the section 'Non-financial reporting policy' of the Integrated Annual Report.

Furthermore, the Managing Board is responsible for such internal control as it determines is necessary to enable the preparation of the Sustainability Information that is free from material misstatements, whether due to fraud or error.

The Supervisory Board is, amongst other things, responsible for overseeing Royal DSM's sustainability reporting process.

Our responsibilities for the audit of the Sustainability Information

Our responsibility is to plan and perform our assurance engagement in a manner that allows us to obtain sufficient and appropriate assurance evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not have detected all material misstatements due to fraud or error.

Misstatements can arise from fraud or errors and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users taken on the basis of the Sustainability Information. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We apply the 'Nadere Voorschriften Kwaliteitssystemen' (Regulations for Quality management systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have exercised professional judgement and have maintained professional skepticism throughout the audit, in accordance with the Dutch Standard 3810N, ethical requirements and independence requirements.

Our audit included among others:

- Performing an analysis of the external environment and obtaining an understanding of relevant social themes and issues, and the characteristics of Royal DSM;
- Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the Sustainability Information. This includes the evaluation of the results of the stakeholders' dialogue and the reasonableness of estimates made by management of Royal DSM;
- Obtaining an understanding of the systems and processes for collecting, reporting and consolidating the Sustainability Information, including obtaining an understanding of internal control relevant to our audit, but not for the purpose of expressing an opinion on the effectiveness of Royal DSM's internal control;
- Evaluating the procedures performed by the internal audit department;
- Identifying and assessing the risks of whether the Sustainability Information is misleading or unbalanced, or contains material misstatements, whether due to errors or fraud. Designing and performing further audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk that the Sustainability Information is misleading or unbalanced, or the risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from errors. Fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. These further procedures included among others:
  - Interviewing management and relevant staff of Royal DSM at corporate, business group and component level responsible for the sustainability strategy, policies and results;
  - Interviewing relevant staff of Royal DSM responsible for providing the information for, carrying out internal control procedures on, and consolidating the data in the Sustainability Information;
  - Determining the nature and extent of the audit procedures at corporate and component level. For this, the nature, size and/or risk profile of these components were decisive. Based thereon we selected the components to visit. In view of restrictions on the movement of people across borders, and also within significantly affected countries, due to the Covid-19 pandemic, we considered how to make appropriate changes to the audit plan. Due to the aforementioned restrictions, travelling generally was not practicable in the current environment and we conducted our visits to components mostly remotely. The visits were aimed at, on a component level, validating source data and evaluating the design, implementation and operation of controls and validation procedures;
  - Obtaining assurance information that the Sustainability Information reconciles with underlying records of Royal DSM;
  - Evaluating relevant internal and external documentation, on a test basis, to determine the reliability of the information in the Sustainability Information; and
  - Performing an analytical review of the data and trends.

- Evaluating the consistency of the Sustainability Information with the information in the Integrated Annual Report which is not included in the scope of our audit;
- Evaluating the overall presentation, structure and content of the Sustainability Information; and
- Considering whether the Sustainability Information as a whole, including the disclosures, reflects the purpose of the reporting criteria used.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant findings, including any significant findings in internal control that we identify during our audit.

Amstelveen, 1 March 2021

KPMG Accountants N.V.

P.J. Groenland – van der Linden RA

Special statutory rights

DSM Preference Shares Foundation

The DSM Preference Shares Foundation was established in 1989.

By virtue of DSM's Articles of Association, 375,000,000 cumulative preference shares B can be issued. The listing prospectus of 1989 stated that if, without the approval of the Managing Board and Supervisory Board, either a bid is made for the ordinary shares or a significant participation in ordinary shares is built up, or such an event is likely to occur, then these preference shares B may be issued, which shall have the same voting rights as the ordinary shares.

Under an agreement entered into in 1999, and subsequently amended, between the DSM Preference Shares Foundation and DSM, the Foundation has the right to acquire such preference shares (call option) to a maximum corresponding to 100% of the capital issued in any form other than preference shares B, less one.

The objective of the Foundation is to promote the interest of DSM, and the enterprise maintained by DSM and all parties connected therewith, whereby influences that would threaten the continuity, independence or identity, contrary to the aforementioned interests, are resisted to the maximum extent possible.

The purpose of the agreement with the Foundation is, among other things, for the Foundation to allow DSM the opportunity to determine its position, for example with regard to a possible bidder for DSM shares or a party or parties tempting to obtain (de facto) control, to examine any plans in detail and, to the extent applicable, to look for (better) alternatives. Preference shares B will not be outstanding longer than necessary. As soon as there are no longer any reasons for the preference shares B to remain outstanding, the Managing Board will convene a General Meeting of Shareholders and recommend the cancellation of the preference shares B that are still outstanding.

The Foundation acquired no preference shares B in 2020.

The DSM Preference Shares Foundation is an independent legal entity within the meaning of article 5:71, first paragraph, under c of the Dutch Act on Financial Supervision *(Wet op het financieel toezicht).*

On 31 December 2020, the Board of the Foundation was composed as follows:

Gerard Kleisterlee, Chair
Cees Maas, Deputy Chair
Bas Kortmann

Important dates

Annual General Meeting of Shareholders

The Annual General Meeting of Shareholders is to be held on Thursday, 6 May 2021 at 14:00 hours CET.

Important dates

Publication of first-quarter	Wednesday, 5 May 2021
Ex-dividend quotation	Monday, 10 May 2021
Publication of second-quarter	Tuesday, 3 August 2021
Publication of third-quarter	Tuesday, 2 November 2021

DSM figures: five-year summary

All figures are including discontinued operations unless stated otherwise, see also Note 3 Change in the scope of the consolidation.

Balance sheet

x € million	2020	2019	2018	2017	2016
Assets					
Intangible assets	4,455	3,515	3,090	3,058	3,188
Property, plant and equipment	3,774	4,040	3,511	3,313	3,325
Deferred tax assets	239	217	248	281	355
Share in associates and joint ventures	93	155	205	227	586
Derivatives	61	27	14	16	-
Other financial assets	317	265	263	475	463
Non-current assets	8,939	8,219	7,331	7,370	7,917
Inventories	1,879	2,019	1,993	1,848	1,800
Current receivables	1,488	1,698	1,738	1,690	1,653
Derivatives	48	19	21	41	40
Current investments	43	688	1,277	954	944
Cash and cash equivalents	871	800	1,281	899	604
Assets held for sale	1,096	-	-	-	-
Current assets	5,425	5,224	6,310	5,432	5,041
Total assets	14,364	13,443	13,641	12,802	12,958
Equity and liabilities					
Shareholders' equity	7,399	7,731	7,782	6,962	6,072
Non-controlling interests	88	104	33	103	108
Equity	7,487	7,835	7,815	7,065	6,180
Deferred tax liabilities	433	296	254	259	278
Employee benefit liabilities	414	413	413	356	490
Provisions	123	120	116	151	128
Borrowings	3,479	2,464	2,272	2,551	2,552
Derivatives	1	7	3	4	14
Other non-current liabilities	163	145	197	188	158
Non-current liabilities	4,613	3,445	3,255	3,509	3,620
Employee benefits liabilities	42	43	46	39	40
Provisions	61	48	37	53	54
Borrowings	107	189	380	77	853
Derivatives	13	18	51	20	239
Current liabilities	1,787	1,865	2,057	2,039	1,972
Liabilities held for sale	254	-	-	-	-
Current liabilities	2,264	2,163	2,571	2,228	3,158
Total equity and liabilities	14,364	13,443	13,641	12,802	12,958

Income statement

x € million	2020	2019	2018	2017	2016
Net sales	9,038	9,010	8,852[1]	8,632	7,920
Adjusted EBITDA[2]	1,650	1,684	1,532[1]	1,445	1,262
EBITDA	1,476	1,586	1,754	1,348	1,146
Adjusted operating profit (EBIT)[2]	1,011	1,075	1,055[1]	957	791
Operating profit (EBIT)	736	954	1,245	846	657
Financial income and expense	(67)	(92)	(101)	(104)	(133)
Income tax expense	(129)	(152)	(194)	(115)	(89)
Share of the profit of associates and joint ventures	(32)	54	129	1,154	194
Net profit for the year	**508**	**764**	**1,079**	**1,781**	**629**
Net profit attributable to non-controlling interests	2	6	2	12	8
Net profit available to equity holders of Koninklijke DSM N.V.	**506**	**758**	**1,077**	**1,769**	**621**
Dividend on cumulative preference shares	(7)	(8)	(8)	(8)	(4)
Net profit available to holders of ordinary shares	**499**	**750**	**1,069**	**1,761**	**617**
Key figures and financial ratios					
Capital employed	10,560	9,311	8,181	7,766	7,889
Capital expenditure:					
- Intangible assets and Property, plant and equipment	622	623	653	586	485
- Acquisitions	1,579	585	50	264	16
Disposals	46	44	335	1,546	87
Depreciation, amortization and impairments	740	632	509	502	489
Net debt	(2,577)	(1,144)	(113)	(742)	(2,070)
Dividend	420	425	412	331	310
Workforce at 31 December, headcount	23,127	22,174	20,977	21,054	20,786
Employee benefit costs (x € million)	1,848	1,811	1,753	1,768	1,752
Financial ratios[2]					
ROCE in %	10.3	12.0	13.3[1]	12.3	10.4
Net sales / average capital employed	0.92	1.01	1.11[1]	1.11	1.04
Current assets / current liabilities	2.40	2.42	2.45	2.44	1.58
Equity / total assets	0.52	0.58	0.57	0.55	0.48
Gearing (net debt / equity plus net debt)	0.26	0.13	0.01	0.10	0.25
Adjusted EBIT / net sales in %	11.2	11.9	11.9[1]	11.1	10.0
Net profit / average Shareholders' equity available to holders of ordinary shares in %	6.8	10.0	24.7	28.0	11.1
Adjusted EBITDA / financial income and expense	24.6	18.3	15.2[1]	13.9	9.5

1 2018 adjusted for the temporary vitamin effect for comparison reasons of €415 million in sales, €290 million in adjusted EBITDA and €290 million in adjusted operating profit, including associated ratios.

2 In presenting and discussing DSM's financial position, operating results and cash flows, DSM uses certain Alternative performance measures (APMs) not defined by IFRS. These APMs are used because they are an important measure of DSM's business development and DSM's management performance. A full reconciliation of IFRS performance measures to the APMs is given in Note 2 Alternative performance measures.

Information about ordinary DSM shares

per ordinary share in €	2020	2019	2018	2017	2016
Adjusted net profit	4.43	4.64	5.84	3.92	2.90
Net profit	2.91	4.27	6.10	10.07	3.52
Operating cash flow	8.67	7.84	7.89	5.65	5.79
Dividend:	2.40	2.40	2.30	1.85	1.75
- Interim dividend	0.80	0.77	0.77	0.58	0.55
- Final dividend	1.60	1.63	1.53	1.27	1.20
Pay-out including dividend on cumulative preference shares as % of Adjusted net profit	55	52	40	48	61
Dividend yield (dividend as % of average price of an ordinary DSM share)	1.9	2.3	2.7	2.8	3.3
Share prices on Euronext Amsterdam (closing price):					
- Highest price	148.55	117.90	92.98	81.66	64.18
- Lowest price	87.52	69.54	68.98	57.20	41.40
- At 31 December	140.80	116.10	71.44	79.67	56.96
Number of ordinary shares outstanding (x 1,000):					
- At 31 December	172,219	172,449	175,651	174,643	175,002
- Average	171,536	175,731	175,323	174,795	175,100
Daily trading volumes on Euronext Amsterdam:					
- Average	518	635	732	676	787
- Lowest	64	75	130	238	152
- Highest	1,900	2,242	2,617	2,110	2,554

Explanation of some concepts and ratios

GENERAL

Biosciences[1]
Biosciences are any of the sciences that deal with living organisms.

Brighter Living Solutions
Brighter Living Solutions (BLS) is DSM's program for the development of sustainable, innovative solutions with environmental and/or social benefits, creating shared value for our stakeholders. Brighter Living Solutions are products, services and technologies that, considered over their life cycle, offer a superior environmental impact (ECO+) and/or a superior social impact (People+) when compared to the mainstream alternative for the same application. The impact of Brighter Living Solutions can be realized at any stage of the product life cycle, from raw materials through the manufacturing process to potential re-use and end-of-life disposal.

Within the program, DSM conducts an annual 'Product Category Sustainability Review' for all product categories. This review identifies environmental and social impact differentiators and risks for each of our product categories and confirms the mainstream reference solution. To substantiate the identified differentiators DSM uses comparative Life Cycle Assessments (LCAs) and/or expert opinions to determine whether a product has a superior performance and can be identified as a Brighter Living Solution.

Superior environmental and/or social impact: Eco+ and People+
ECO+ qualifications are made based on a comparative Environmental LCA using ISO-standards to evaluate environmental footprint, or documented expert opinion by business managers and internal sustainability experts.

The People+ qualifications are made based on our People LCA methodology, which has been developed in line with industry-leading initiatives such as the Roundtable for Product Social Metrics, or an expert opinion. The People LCA method helps to identify social impacts of products on the dimensions health, comfort and well-being, working conditions, and community development.

More information and definitions can be found on the company website.

FFP
EN 149 is a European standard of testing and marking requirements for filtering masks covering the nose, mouth and chin and may have inhalation and/or exhalation valves. This standard defines three classes of such particle half masks, called FFP1, FFP2 and FFP3, (FFP = Filtering Face Piece) according to their filtering efficiency.[2]

Integrated Reporting <IR> Framework – Value Creation model
The Value Creation diagram is based on the International Integrated Reporting Council's Integrated Reporting <IR> framework and gives an overview of how we create value for our stakeholders based on six capital inputs.

Human capital (People)
We employ skilled and talented people from diverse backgrounds. We strive to provide employees with a safe and inspiring workplace as well as with the tools and training they need to be effective and to develop their abilities. We reward employees with competitive benefit packages.

1 Source: The Free Dictionary
2 Source: Wikipedia

Societal & relationship capital (People)
We engage with various stakeholders to ensure close alignment between our aims and societal needs. We generate value for stakeholders outside our direct value chains of employees, suppliers, customers and end-users; these include employees' families, governments, local communities and civil society.

Natural capital (Planet)
We recognize that the world is an interconnected system of resources. For us, this represents a responsibility and a business opportunity. We aim to improve the environmental impact of our supply chain, operations and products and services, while developing innovative solutions that deliver sustainability benefits to customers and beyond.

Financial capital (Profit)
Providers of capital – shareholders and bondholders, banks and the financial markets – supply funds that we use in our business to create value, driving growth and delivering sustainable returns.

Intellectual capital (Profit)
We manufacture and distribute high-quality products and services safely, efficiently and responsibly, and strive to develop valuable, collaborative and long-term relationships with customers and suppliers. We pursue open innovation, connecting and collaborating with partners and investing in start-ups.

Manufactured capital (Profit)
We have unique competences in life sciences and materials sciences and connect these to deliver innovative solutions that nourish, protect and improve performance

PEOPLE

Equal pay and gender pay gap
Equal pay is a legal requirement for men and women to be paid the same for performing the same or similar work or work that has been rated as being of equal value (by job evaluation). The gender pay gap zooms in on the difference between what men typically earn overall in an organization compared to women, irrespective of their role or seniority.

Eubiotics
The general term 'Eubiotics', is related to the Greek term 'Eubiosis' and relates to feed ingredients that support an optimal balance of microbiota in the gastrointestinal tract of livestock animals. They promote efficient gut performance so as to produce well-nourished animals that get the most from their feed, while at the same time sustaining their health and welfare and protecting the environment.

Frequency Index (FI)
The Frequency Index is a way to measure safety performance. The number of accidents of a particular category per 100 employees per year.

Inclusion Index
The Inclusion Index is a subset of items in the Employee Engagement (Pulse) Survey to specifically measure Inclusion. Inclusion is: "A working environment where all employees are a full and equal member of a team; where diverse perspectives are valued, and investment is made in their development; where people are respected and able to contribute as they are and not having to conform; where they can reach their potential, and where they can speak up without fear of retribution."

Lives Reached
Lives Reached is a measure of consumers already reached through consumer products of third parties containing DSM products and solutions. This measure addresses key end-markets representing more than 25% of DSM's total sales. These end-markets cover our business segments — Nutrition, Materials and Innovation Center.

The number of Lives Reached is calculated for each market separately and then aggregated. As a business-to-business company, our products reach end-consumers via third parties, so calculations per market are performed at global level.

Consumer touch points are assumed to be unrelated, and overlap is eliminated using statistical methods (De Morgan's Law and Probability Theory — Independence). The actual overlap may be larger or smaller than calculated based on this assumption.

Key assumptions are used to perform these calculations and include DSM's market share, total consumer markets, share of wallet and consumer consumption behavior. These assumptions are made based on external market data where available, supplemented with market and business intelligence insights.

For more information on Lives Reached, see the company website.

Living wage

The remuneration received for a standard working time by an employee in a particular place sufficient to afford a decent standard of living for the employee and his/her family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs, including provision for unexpected events.

LWC rate DSM-own

The Lost Workday Case (LWC) rate DSM-own is the number of lost workday cases per 100 DSM employees in the past 12 months: LWC rate = 100 * (number of LWCs (past 12 months) / average effective manpower (past 12 months)).

Occupational Health Case

This refers to any abnormal condition or disorder requiring medical treatment — other than one resulting directly from an accident — caused by, or mainly caused by, repeated exposure to work-related factors.

PSI rate

The PSI rate is the number of Process Safety Incidents per 100 DSM employees and contractor employees in the past 12 months: PSI rate = 100 * (number of PSIs (past 12 months) / average effective manpower including contractor employees (past 12 months)).

REC rate DSM-all

The REC rate DSM-all is the number of recordable injuries per 100 DSM employees and contractor employees in the past 12 months: REC rate = 100 * (number of RECs (past 12 months) / average effective manpower including contractor employees (past 12 months)).

Safety, Health and Environment (SHE)

DSM's policy is to maintain business activities and produce products that do not adversely affect safety or health, and that fit with the concept of sustainable development. The company does this by setting the following objectives: to provide an injury-free and incident-free workplace; to prevent all work-related disabilities or health problems; to control and minimize the risks associated with DSM's products for their whole life cycle and to choose production processes and products such that the use of raw materials and energy is minimized; to evaluate and improve DSM's practices, processes and products continuously in order to make them safe and acceptable to its employees, the customers, the public and the environment.

United Nations Global Compact

A strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption.

United Nations' Universal Declaration of Human Rights

On 10 December 1948, the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights. Following this historic act, the Assembly called upon all Member countries to publicize the text of the Declaration and "to cause it to be disseminated, displayed, read and expounded principally in schools and other educational institutions, without distinction based on the political status of countries or territories."

PLANET

Biofuel
A fuel which is derived from renewable organic resources, as distinct from one which is derived from non-renewable resources such as crude oil and natural gas.

Carbon footprint
The total set of direct and indirect greenhouse gas emissions expressed as CO_2eq.

Carbon price
The price that is paid to emit one ton CO_2eq into the atmosphere. DSM implements an internal carbon price of €50/t CO_2eq.

Circular economy
Circular economy refers to an economy that is restorative and in which materials flows are of two types: biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are designed to circulate at high quality without entering the biosphere throughout their entire lifecycle.

CO_2
Carbon dioxide, a gas that naturally occurs in the atmosphere. It is part of the natural carbon cycle through photosynthesis and respiration. It is also generated as a by-product of combustion. Carbon dioxide is a greenhouse gas.

Chemical Oxygen Demand (COD)
COD is an indicator of the degree of pollution of waste water by organic substances.

Eco-efficiency
Eco-efficiency is a concept (created in 1992 by the WBCSD) that refers to the creation of more goods and services while using less resources and creating less waste and pollution throughout their entire life cycle. In the context of DSM's SHE targets, eco-efficiency relates specifically to the reduction of emissions and energy and water consumption, relative to the production volumes of DSM's plants.

Energy
Primary energy is energy that has not yet been subjected to a human engineered conversion process. It is the energy contained in unprocessed fuels.

Final (consumed) energy is the energy that is consumed by end-users. The difference between primary energy and final consumed energy is caused by the conversion process between the two as well as any transmission losses.

Essential for life
Essential for life refers to products that have a proven beneficial nutritional or pharmaceutical effect when used at the officially recommended dose.

Greenhouse gas emissions (GHG)
Scope 1: Direct GHG emissions
Direct GHG emissions occur from sources that are owned or controlled by the company (i.e., emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.).

Scope 2: Indirect GHG emissions
Indirect GHG emissions relate to the generation of purchased energy (i.e., electricity, heat or cooling) consumed by the company. Purchased energy is defined as energy that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where the energy is generated.

Scope 3: Value chain emissions
Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Location-based emissions
Reflects the average GHG emissions intensity of grids on which electricity consumption occurs (using mostly national grid-average emission factor data). Corresponding emission factor: in most cases, the country emission factor.

Market-based emissions
Reflects GHG emissions from electricity supplies that companies have purposely chosen (or their lack of choice) and contracted. Corresponding emission factors:

- Supplier specific emission factor (provided by the supplier)
- Residual emission factor (country-based grid factor, corrected for allocated purchased electricity from renewable resources)

Greenhouse gas emissions (GHG) efficiency improvement
The GHGE efficiency improvement is the amount of GHG emissions per unit of output (specific emissions) in a given year compared to the specific emissions in the prior year. GHGE efficiency improvements are one of the ratios in the Long-Term Incentive part of the Managing Board remuneration and relate to a three-year period.

GRI
The Global Reporting Initiative (GRI) has developed Sustainability Reporting Guidelines that strive to increase the transparency and accountability of economic, environmental, and social performance. The GRI was established in 1997 in partnership with the UN Environment Programme. It is an international, multi-stakeholder and independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines. These Guidelines are for voluntary use by organizations for reporting on the economic, environmental, and social dimensions of their activities, products and services.

Guarantee of origin (GO)
A guarantee of origin is defined in EU Directive 2009/28/EC as “an electronic document which has the sole function of providing proof to a final customer that a given share or quantity of energy was produced from renewable sources as required by Article 3(6) of Directive 2003/54/EC.” The requirements of a GO are explained in Article 15 of the same Directive.

Levelized Cost of Energy (LCOE)
LCOE is a figure used to compare the average cost of energy coming from different sources. It measures the cost of energy production over the lifetime of an asset like a photovoltaic panel.

Loss of Primary Containment (LOPC)
Loss of Primary Containment is an unplanned or uncontrolled release of material from the container that is in direct contact with the material.

Net-zero emissions
The Intergovernmental Panel on Climate Change states: “Net-zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon)”.

NO_x
Nitrogen oxides. These gases are released mainly during combustion and cause acidification.

Renewable resource
A natural resource which is replenished by natural processes at a rate comparable to, or faster than, its rate of consumption by humans or other users. The term covers perpetual resources such as solar radiation, tides, winds and hydroelectricity as well as fuels derived from organic matter (bio-based fuels).

SO_2
Sulfur dioxide. This gas is formed during the combustion of fossil fuels and causes acidification.

VOC
Volatile organic compounds. The term covers a wide range of chemical compounds, such as organic solvents, some of which can be harmful.

Water use and water consumption
Water use includes water used for 'once-through cooling' that is returned to the original water source after use. Water consumption is the portion of water used that is not returned to the original water source after being withdrawn.

PROFIT

General
In calculating financial profitability ratios, use is made of the average of the opening and closing values of balance sheet items in the year under review.

The financial indicators per ordinary share are calculated on the basis of the average number of ordinary shares outstanding (average daily number). In calculating Shareholders' equity per ordinary share, however, the number of shares outstanding at year-end is used.

In calculating the figures per ordinary share and the 'net profit as a percentage of average Shareholders' equity available to holders of ordinary shares', the amounts available to the holders of cumulative preference shares are deducted from the profits and from Shareholders' equity.

Adjusted net operating free cash flow
The cash flow from operating activities, corrected for the cash flow of the APM adjustments, minus the cash flow of capital expenditures and drawing rights.

Capital employed
The total of the carrying amount of intangible assets and property, plant and equipment, inventories, trade receivables and other receivables, less trade payables, other current liabilities, investment grants and customer funding.

Capital expenditure
This includes all investments in intangible assets and property, plant and equipment.

Disposals
This includes the disposal of intangible assets and property, plant and equipment as well as the disposal of participating interests and other securities.

Earnings before interest, tax, depreciation and amortization (EBITDA)
EBITDA is the sum of operating profit plus depreciation and amortization. Adjusted EBITDA is the EBITDA adjusted for material items of profit or loss coming from acquisitions/divestments, restructuring and other circumstances that management deem it necessary to adjust in order to provide clear reporting on the development of the business.

Earnings per ordinary share
Net profit attributable to equity holders of Koninklijke DSM N.V. minus dividend on cumulative preference shares, divided by the average number of ordinary shares outstanding.

High-growth economies
High-growth economies relate to the following regions: Latin America, Middle East, Asia (excluding Japan) and Eastern Europe.

Innovation sales
Innovation sales are defined as sales from products and applications that have been introduced in the last five years.

Net debt
Net debt is the total of current and non-current borrowings less cash and cash equivalents, current investments and the net position of derivatives.

Operating working capital
The total of inventories and trade receivables, less trade payables. See also Working capital.

Organic sales growth
Organic sales growth is the total impact of volume and price/mix. Impact of acquisitions and divestments as well as currency impact are excluded.

Return on capital employed (ROCE)
Adjusted operating profit from continuing operations as a percentage of average capital employed.

Temporary vitamin effect
DSM's best estimate of the effect on sales and Adjusted EBITDA of the exceptional supply disruptions in the industry that started toward the end of 2017 and ended in the third quarter of 2018, including derived measurements.

Total shareholder return (TSR)
Total shareholder return is capital gain plus dividend paid.

Underlying business
Sales and Adjusted EBITDA (including derived measurements), corrected for DSM's best estimate of the temporary vitamin effect.

Working capital
The total of inventories and current receivables, less current payables. See also Operating working capital.

List of abbreviations

ADR	American Depositary Receipts
AFM	The Dutch Authority for the Financial Markets
API	Active Pharmaceutical Ingredients
APM	Alternative performance measures
CDP	The new name for the Carbon Disclosure Project
CE	Conformitè Europeenne
Cefic	Conseil Européen des Fédérations de l'Industrie Chimique (European Chemical Industry Council)
CGU	Cash Generating Unit
COA	Corporate Operational Audit department
CoBC	Code of Business Conduct
COD	Chemical Oxygen Demand
CPLC	Carbon Pricing Leadership Coalition
CRA	Corporate Risk Assessment
CRP	Corporate Research Program
CSD	Corporate Strategy Dialogue
CSR	Corporate Social Responsibility
DHA	Docosahexaenoic Acid
DNP	DSM Nutritional Products
DSGC	Dutch Sustainable Growth Coalition
DSP	DSM Sinochem Pharmaceuticals
EBA	Emerging Business Area
EBIT	Earnings Before Interest and Taxes (Operating Profit)
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EEI	Energy Efficiency Improvement
EPA	Eicosapentaenoic Acid
EPS	Earnings per share
EVP	Executive Vice President
FIFO	First in, first out
FTE	Full-time equivalent
FVTPL	Fair value through profit and loss
FVOCI	Fair value other comprehensive income
GHG	Greenhouse gas
GHGE	Greenhouse gas emissions
GMO	Genetically Modified Organisms
GRI	Global Reporting Initiative
HMPE	High modulus polyethylene
IAS	International Accounting Standards
IASB	International Accounting Standards Board
ICF	Internal Control Framework
IFRIC	International Financial Reporting Interpretation Committee
IFRS	International Financial Reporting Standards
ILO	International Labour Organisation
IP	Intellectual Property
LCA	Life Cycle Assessment
LoR	Letter of Representation
LTI	Long-Term Incentive
LWC	Lost Workday Case
NCI	Non-controlling interests
NGO	Non-Governmental Organization
NPS	Net Promoter Score
OCI	Other Comprehensive Income
OECD	Organisation for Economic Co-operation and Development
PDN	Stichting Pensioenfonds DSM Nederland
PPA	Purchase Price Allocation; also Power Purchase Agreement
PPE	Personal Protective Equipment; also Property, Plant and Equipment
PRA	Process Risk Assessment; also Personal Protective Equipment
PSI	Process Safety Incident
PV	Photovoltaic
R&D	Research & Development
REACH	Registration, Evaluation, Authorisation and Chemicals Restriction of Chemicals
ROCE	Return on Capital Employed
SDG	Sustainable Development Goal
SHE	Safety, Health and Environment
SHIBOR	Shanghai Interbank Offered Rate
SPP	Sustainable Procurement Program
STI	Short-Term Incentive
SUN	Scaling Up Nutrition Movement
TCFD	Taskforce on Climate-related Financial Disclosures
TSR	Total Shareholder Return
UHMWPE	Ultra-high-molecular-weight polyethylene
UN	United Nations
VOC	Volatile Organic Compound
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum
WFP	United Nations World Food Programme