# Royal DSM Integrated Annual Report 2018

NUTRITION · HEALTH · SUSTAINABLE LIVING

DSM
BRIGHT SCIENCE. BRIGHTER LIVING.

# DSM at a glance

### Nutrition

DSM Nutritional Products and DSM Food Specialties form our Nutrition business. DSM Nutritional Products provides solutions for animal feed, food and beverages, pharmaceuticals, early life nutrition, nutrition improvement, dietary supplements and personal care. DSM Food Specialties is a leading global supplier of specialty food enzymes, cultures, probiotics, bio-preservation solutions, hydrocolloids, savory ingredients, and sugar reduction solutions.

### Materials

Our Materials business includes DSM Engineering Plastics, DSM Dyneema, and DSM Resins & Functional Materials. We are a global player in specialty plastics for the electrical components and electronics, automotive, flexible food packaging and consumer goods industries. Our portfolio also includes Dyneema®, the world's strongest fiber™, for protective solutions and commercial marine applications, as well as resins for use in paints and optical fiber coatings, Niaga® technology for circular design, and advanced materials for additive manufacturing/3D printing applications.

### Innovation Center

DSM Innovation Center accelerates the innovation power and speed of our core businesses. It also has a business development role, focusing on areas outside the current scope of our business groups. We have three Emerging Business Areas: DSM Biomedical, DSM Bio-based Products & Services, and DSM Advanced Solar.

## People

**20,977**
~23,000[1]
Workforce (at year-end 2018, excluding affiliates)

**76%**
Employee Engagement Index versus 75% in 2017

**28/72**[2]
Female/male ratio versus 27/73 in 2017

**19%**[3]
Female executives, versus 17% in 2017

**0.33**
Frequency Index of Recordable Injuries versus 0.36 in 2017 (per 100 DSM employees and contractors)

## Brighter living solutions

**62%**[4, 5]
Sales of Brighter Living Solutions versus 62% in 2017

## Planet

**33%**
Greenhouse gas efficiency improvement versus 2008, versus 26% in 2017

**41%**
Purchased electricity from renewable sources versus 21% in 2017

**19%**[4]
Innovation sales, in line with our ambition of ~20%

**5.1%**
Energy efficiency improvement, versus 2015, compared to 3.8%[6] in 2017, >1% average annual ambition

**22**
Water consumption, down from 23 in 2017 (in million $m^3$)

1 At year-end 2018, including affiliates.
2 The companies that are not integrated into the HR systems (approx. 2% of the total workforce) are not taken into account.
3 Going into 2019, the percentage of women in our Executive Committee and Supervisory Board is 43%.
4 Excluding temporary vitamin effect, see table on page 65.
5 For a small percentage of sales (approximately 2% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.
6 The 2017 number has been adjusted positively because of improved data quality.

## Profit

**€ 8,852** [1]

**€ 9,267**

Net sales versus € 8,632 in 2017 (in millions)

**€ 1,532** [1]

**€ 1,822**

Adjusted EBITDA[2] versus € 1,445 in 2017 (in millions)

**+6%** [1]

**+26%**

Adjusted EBITDA[2] growth versus 2017

**13.3%** [1]

**16.8%**

ROCE versus 12.3% in 2017

**+100** [1]

**+450**

ROCE growth (in bps) versus 2017, to 13.3%[1] / 16.8%

**€ 1,126** [1]

**€ 1,391**

Cash provided by operating activities versus € 996 in 2017 (in millions)

**€ 113**

Net debt versus € 742 end of 2017 (in millions)

**€ 1,079**

Total net profit (in millions)

**€ 6.10** [3]

Net earnings per ordinary share, versus € 10.07[4] in 2017

**€ 2.30**

Proposed dividend per ordinary share[5] for 2018, versus € 1.85 for 2017

[1] Excluding temporary vitamin effect, see table on page 65.
[2] See page 174 for reconciliation to EBITDA.
[3] Including temporary vitamin effect, see page 62.
[4] Including gain of €1,250 million on Patheon disposal.
[5] Subject to approval by the Annual General Meeting of Shareholders.

# DSM – Bright Science. Brighter Living™

At DSM, we have a long and rich heritage, and it is on that basis that we now enter a new era as a purpose-led company. Our purpose is fully anchored in our purpose-led, performance-driven strategy: creating brighter lives for all. This will serve the interests of all stakeholders – customers, employees, shareholders and society at large – creating value across three dimensions simultaneously: People, Planet and Profit.

As a company active in Nutrition, Health and Sustainable Living, we address the opportunities that are driven by global megatrends and the United Nations' Sustainable Development Goals (SDGs). We contribute to these with our science-based solutions to create brighter lives for people today and generations to come.

Our bright science has delivered benefits across multiple dimensions, already reaching ~2.5 billion people in the world today in our three focus domains of Nutrition & Health, Climate & Energy and Resources & Circularity.

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

We are proud to be recognized as a positive contributor to a changing world. We have achieved this through working side by side with governments, industry bodies and peers. Working with and for our stakeholders, we will create a brighter future. We are truly excited about what we can achieve together.

**DSM – Bright Science. Brighter Living.™**
Royal DSM is a global, purpose-led, science-based company active in Nutrition, Health and Sustainable Living. DSM's purpose is to create brighter lives for all. DSM addresses with its products and solutions some of the world's biggest challenges while simultaneously creating economic, environmental and societal value for all its stakeholders – customers, employees, shareholders, and society at large. DSM delivers innovative solutions for human nutrition, animal nutrition, personal care and aroma, medical devices, green products and applications, and new mobility and connectivity. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23,000 employees. The company was founded in 1902 and is listed on Euronext Amsterdam. More information can be found at www.dsm.com.

Letter from the CEO,
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DSM and the
Sustainable Development Goals,
see page 10


Strategy 2018
successfully delivered,
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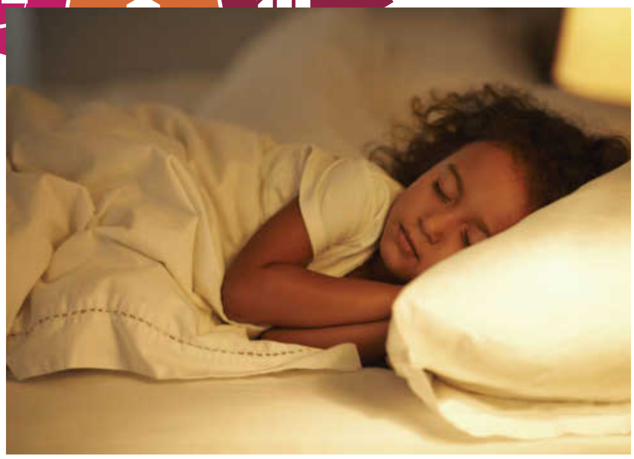
Review of Nutrition, see page 66



Review of Materials, see page 84

Review of Innovation, see page 94

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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 of 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' chapter.

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]

| | 2018 | 2017 |
|---|---|---|
| **People** | | |
| Workforce at 31 December (headcount) | 20,977 | 21,054 |
| Female/male ratio[2] | 28/72 | 27/73 |
| Total employee benefit costs (in € million) | 1,753 | 1,768 |
| Frequency Index of Recordable Injuries (per 100 DSM employees and contractor employees) | 0.33 | 0.36 |
| Employee engagement — favorable score (in %) | 76 | 75 |
| | | |
| **Planet** | | |
| Energy use (in PJ) | 20.8 | 23.6 |
| Energy Efficiency Improvement (in %, baseline 2015) | 5.1 | 3.8[3] |
| Greenhouse gas emissions, market based (scope 1 + 2, in $CO_2$ equivalents (x million tons)) | 1.2 | 1.5 |
| Greenhouse gas efficiency improvement (in %, baseline 2008) | 33 | 26 |
| Water consumption (x million $m^3$) | 22 | 23 |
| | | |
| **Brighter Living Solutions (as % of running business)[4]** | 62 | 62 |
| | | |
| **Profit (in € million)** | | |
| Net sales underlying business[4] / Net sales | 8,852 / 9,267 | 8,632 / 8,632 |
| Adjusted EBITDA underlying business[4] / Adjusted EBITDA[5] | 1,532 / 1,822 | 1,445 / 1,445 |
| EBITDA | 1,754 | 1,348 |
| Adjusted EBIT underlying business[4] / Adjusted operating profit (EBIT)[5] | 1,055 / 1,345 | 957 / 957 |
| Operating profit (EBIT) | 1,245 | 846 |
| Net profit | 1,079 | 1,781 |
| | | |
| Cash provided by operating activities underlying business / Cash provided by operating activities[4] | 1,126 / 1,391 | 996 / 996 |
| Capital expenditure, cash based | 646 | 546 |
| Dividend for DSM shareholders (based on profit appropriation)[6] | 412 | 331 |
| Net debt | 113 | 742 |
| Shareholders' equity | 7,782 | 6,962 |
| Total assets | 13,641 | 12,802 |
| Capital employed | 8,181 | 7,766 |
| Market capitalization at 31 December[7] | 12,961 | 14,454 |
| | | |
| **Per ordinary share in €** | | |
| Net earnings | 6.10 | 10.07 |
| Dividend | 2.30[4] | 1.85 |
| | | |
| **Financial ratios (%)** | | |
| Sales to high-growth economies / net sales underlying business[4] | 43 | 44 |
| Innovation sales / net sales underlying business[4] | 19 | 21 |
| Adjusted EBITDA margin underlying business[4] / Adjusted EBITDA margin[5] | 17.3 / 19.7 | 16.7 / 16.7 |
| Average working capital / annualized net sales underlying business[4] | 18.7 | 18.4 |
| ROCE underlying business[4] / ROCE | 13.3 / 16.8 | 12.3 / 12.3 |
| Gearing (net debt / equity plus net debt) | 1.4 | 9.5 |
| Equity / total assets | 57.3 | 55.2 |
| Cash provided by operating activities / Adjusted EBITDA[5] | 76.3 | 68.9 |

1 For definitions, see 'Explanation of some concepts and ratios' on page 242.
2 For the indexes based on age, nationalities, gender, inflow and outflow, the companies that are not integrated into the HR systems (approx. 2% of the total workforce) are not taken into account.
3 The 2017 figure has been adjusted positively due to improved data quality.
4 Excluding temporary vitamin effect, see table on page 65.
5 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' on page 172.
6 Subject to approval by the Annual General Meeting of Shareholders.
7 Source: Bloomberg.

# Letter from the CEO

Dear reader,
The year 2018 was a very successful year for our company in almost every way. The hard work and engagement of our employees delivered very strong results of which we can all be justly proud.

***Strategy 2018 successfully delivered***
*Delivery and growth*
2018 was an excellent year for DSM in which we delivered again well ahead of our strategic targets, creating significant value in all our businesses. Even when we exclude the benefits from a temporary vitamin effect (due to supply disruptions in the industry), giving us an estimated one-time additional Adjusted EBITDA of € 290 million, we still had again a record 2018 in which we delivered strong organic growth with a significant step-up in profitability. For the so-called 'underlying business' (excluding this temporary vitamin effect), organic growth was 6%, clearly above market, and Adjusted EBITDA was more than € 1.5 billion, being a 6% increase (in fact just over 10% when excluding the negative currency effect) versus last year. The ROCE of underlying business, was 13.3%, up 100 basis points compared to last year and the total net profit was € 1,079 million. Our total sales (including the temporary vitamin effect) increased by 7% to more than € 9 billion with 11% organic growth. Total Adjusted EBITDA was more than € 1.8 billion, up 26%.

With this record year, we completed a very successful three-year period in which we clearly outperformed on our strategic targets as set in Strategy 2018. We stepped up our organic growth rate, our profitability and our financial returns, while simultaneously delivering on our ambitious sustainability targets. Strategy 2018 has been a great success, through which we have created a strong platform to drive continued above-market growth and deliver further improvements in profitability and returns.

Both our Nutrition and Materials businesses contributed to this strong performance. Nutrition's broad, global portfolio in food and feed ingredients, as well as its expanded portfolio of solutions (including premixes and forms), drove strong growth. This enabled us to invest in the future – for example via new nutrition facilities in Poland and India. We were also pleased to announce a global partnership with Mixfit for personalized nutrition. Meanwhile, Materials continued its 'silent transformation', successfully focusing on higher-growth, higher-margin, specialty segments and delivering higher-performing solutions that are innovative, safe and lightweight, as well as being more sustainable and environmentally friendly. We are investing for the time ahead here as well — an example is the investment in global Dyneema® production capacity, and the introduction of Akulon® RePurposed, a polyamide 6 made from recycled fishing nets. In addition, we are investing in major innovation projects in Nutrition as well as Materials. We feature many examples of these innovations throughout this Letter and Report.

As a global company, we are well represented in all major growth areas of the world: 43% of our total sales are from high-growth economies, in line with our stated ambition for a balanced global presence. The execution of extensive cost-reduction and improvement programs delivered run-rate cumulative savings of approximately € 275 million versus the 2014 baseline by the end of 2018. Consistent improvements in capital efficiency were achieved in 2018, with ROCE today at 13.3% (underlying business; as much as 16.8% including the temporary vitamin effect), almost doubling from 7.6% in 2015.

Acting on our commitment to monetize our remaining Pharma and Bulk Chemicals joint ventures, we divested our non-core participating interests in DSM Sinochem Pharmaceuticals and Fibrant in October 2018. Together with our cash generation, this all led to a net debt reduction in 2018 of € 629 million to € 113 million at year-end. We plan to divest our remaining minority shares in AOC Aliancys (18.9%) and AnQore (35%) at the right moment in the coming period. Since 2015, we have monetized our non-core joint ventures in pharma (especially Patheon) and Fibre Intermediates for a total of about € 3 billion, providing the company with a strong financial position and balance sheet. For more information on our full financial performance, see 'Profit' on page 58.

*Science and innovation*
We are leveraging our unique technology capabilities to develop innovative, sustainable solutions. In 2018, we invested 4.5% of sales in R&D and created a strong and refocused innovation pipeline to drive long-term growth. Consequently in 2018, 19% of our sales came from innovations introduced in the last five years, achieving our aspiration of around 20%.

We made good progress on our large innovation projects. The construction of our new USD 200 million facility which will produce the omega-3 fatty acids EPA and DHA from natural marine algae for our Veramaris® joint venture with Evonik is on time and progressing according to plan. We are also preparing for regulatory approval in various markets for our Project Clean Cow, our new innovative feed solution that delivers a more than 30% reduction in emissions of the greenhouse gas methane from cattle. With our fermentative Stevia, now a 50:50 joint venture with Cargill, we bring zero-calorie, cost-effective sweeteners to market faster by combining our respective proprietary technologies. We also successfully launched a new proprietary yeast, as well as an enzyme cocktail, for the production of bio-ethanol from agricultural residues. Our solar business also provides an alternative for fossil resources, through our anti-reflective coatings, which boost solar panel yields, and our endurance backsheets for solar panels, which are fully recyclable and have a lower $CO_2$ footprint than fluorinated backsheets. Another example is a new enzyme for broilers that facilitates digestion, supports better health, and permits the use of less feed. We made great steps with Niaga®, our fully circular carpet project for preventing carpets from ending up in landfill or being incinerated. We are now even applying this design philosophy more broadly to categories beyond carpet: DSM-Niaga together with Royal Auping achieved a breakthrough in the creation of fully recyclable mattresses.

*Sustainability and business*

At DSM, sustainability is not only our core value and a key responsibility; it is also increasingly an important business driver that is fully engrained in our strategy, business and operations. Our approach for bringing about positive change is to *improve, enable* and *advocate.*

*Improve* is all about the impact of our own operations. In 2018, we continued our sustainable approach to our own operations. We apply an internal carbon price of €50 per ton of $CO_2$ to help guide our investments and operational decisions and are making good progress in reducing our own greenhouse gas (GHG) emissions. Our GHG efficiency improved from 26% in 2017 to 33% in 2018 versus our 2008 baseline, strongly outperforming our aspirations. Also, in absolute terms our emissions fell by more than 8% in 2018. Last year 41% of our purchased electricity came from renewable resources, compared with 21% the year before, which puts us on track to achieve 75% in 2030. In addition to this our energy efficiency improved by 1.4% year-on-year, compared with a 1% average annual target.

Not only do we work hard to *improve* our own operations; we also *enable* our customers to do the same with our innovative solutions. We ensure that the solutions we offer are better for people and/or the planet than existing offerings. In 2018, 62% of our sales came from products that have a better environmental (ECO+) and/or social (People+) impact than mainstream solutions. We call these our Brighter Living Solutions. Our innovative solutions are applied within three domains: Nutrition & Health, Climate & Energy and Resources & Circularity. They include our Project Clean Cow, Veramaris®, fermentative Stevia, Niaga®, light-weight materials and green energy projects in solar and bio-based, which enable our customers and the entire value chain to be more sustainable. We took further steps to tackle malnutrition. More than a decade ago, we entered into our partnership with the UN World Food Programme (WFP). We extended this for another three years in 2018, and today reach over 39 million people worldwide annually with essential nutrients. We have now decided to also address nutrient deficiency among at-risk populations by means of local initiatives, for example, through our Africa Improved Foods (AIF) project we started in Rwanda, where together with partners we are working hard to address the issue of malnutrition and stunting by using local sourcing and production.

We continue to *advocate* on issues that define our times and can be addressed by our competences. Malnutrition, Climate and Circularity are therefore the most important issues we address. Among others by our advocacy to address hunger and malnutrition, via the UN, WFP, UNICEF, but also via the Scaling Up Nutrition Global Business Network that we helped to establish, composed of over 400 national and international companies scaling up programs to address malnutrition globally. We were again a positive voice with our participation in organizations such as the World Economic Forum, the Carbon Pricing Leadership Coalition (CPLC, convened by the World Bank and supported by the UN, IMF and OECD), the Corporate Leadership Group, and We Mean Business. We continued our support for the UN Global Compact in 2018 and remain committed to reporting our progress toward this initiative.

We are proud to be recognized as a constructive contributor to a changing world, achieving this by working side by side with governments, industry bodies and peers. We were recognized for the contributions we made during 2018. To mention only a few: we featured in the Fortune Magazine's 2018 'Change the World' list for the third consecutive year. I myself was humbled and honored to be named among World's 50 Greatest Leaders by Fortune Magazine. We were part of Forbes' best employer list globally. Our company was also among the winners of the Ethical Corporation 2018 Responsible Business Awards. We were pleased to be again ranked number one globally by Sustainalytics and we topped the Dow Jones Sustainability World Index for the eighth time.

*Our people and leadership*

The organizational adjustments of the past strategic period have enabled us to develop a stronger, more diverse, results-oriented company and culture. The brainpower, willpower and passion of our employees, who say with pride that working at DSM is about *Doing Something Meaningful,* have made this happen. Our people feel even more inspired, engaged and committed: our annual Employee Engagement Index rating increased from 75% in 2017 to a highest-ever score of 76% in 2018. Almost all elements of our Employee Engagement showed improvement. The most notable increases were seen in career opportunities and opportunities for learning and development.

We continued to focus on improving our performance in inclusion and diversity. Although our work in this area is far from done, it is pleasing to see that today, more nationalities than before are represented across our company, and there is also a better gender balance at management and executive levels, as well as among their direct reports. The same goes for our Supervisory Board. Going into 2019, the percentage of women in our Executive Committee as well as our Supervisory Board is 43%, both meeting the target of 30% prescribed by Dutch legislation in terms of gender balance. Also, the Supervisory Board of DSM Nederland B.V., a subsidiary of Royal DSM, meets the gender balance target (33% female). All these boards have helped us to set the right course, with an innovative mindset, to deliver on our strategic, financial and societal promises. I would like to warmly thank Tom de Swaan, who retired from the Supervisory Board in 2018, for the significant contribution he has made over the course of so many years.

We worked on further improving our safety performance in 2018. We focused on keeping safety awareness high and we developed a new set of global performance indicators to help us more proactively tackle safety observations and prevent incidents from occurring. However, in September 2018, a tragic accident took place at our Tortuga site in Pecém, Brazil, where one of our subcontractors lost his life when opening a container. This has deeply shocked us all. It demonstrates once again that Health and Safety must always remain our top priority, and that we must work to continuously improve our safety performance, day in, day out.

### *Purpose-led and ideally positioned for growth*

We have very successfully implemented our Strategy 2018 and with that made again important steps to transform DSM and future-proof our company. We have built strong businesses. We have become a growth company with ambitious sustainability efforts that creates value for all stakeholders across the three dimensions of People, Planet and Profit. Over the last decade, we have made decisive steps as a *performance-driven and purpose-led company that creates brighter lives for all* with science-based solutions that help build a brighter world for our customers, employees, shareholders and society at large, for people today and generations to come. Ten years ago, many people believed that contributing to a better and a more sustainable world could not go hand in hand with financial returns and profit. Today, we are proving that doing well financially can go together with doing good for the world. We are convinced this will only become more important in the future. Within the next ten years, good financial results will *have* to go hand in hand with purpose, providing companies with their continued license to operate in a broad sense. We currently see a growing belief among our shareholders confirming this view.

### *Strategy 2021*

Our purpose is fully anchored in our strategy. It drives our performance and sets the scope for our growth, financial returns and the evolution of our portfolio. In June 2018, we presented our strategy update, detailing how we will evolve further toward being a purpose-led, science-based company active in Nutrition, Health and Sustainable Living. We will focus on strong platforms for growth, centered on developing innovative solutions addressing Nutrition & Health, Climate & Energy, and Resources & Circularity. Increased customer-centricity and large innovation projects will enable above-market growth. At the same time, we will remain focused on cost control and operational excellence, allowing us to accelerate profit and cash generation. Organic growth will be complemented by acquisitions, predominantly in Nutrition.

We have set two headline financial targets for the period 2019–2021: (1) High single-digit annual percentage increase in Adjusted EBITDA; and (2) ~10% average annual increase in Adjusted net operating free cash flow. We are also stepping up our ambitions regarding the reduction of GHG emissions, increased energy efficiency and increased use of renewable energy.

### *What's next*

We are well placed to move forward and to deliver on our 2021 strategic targets, to drive continued above-market organic growth and deliver further improvements in profitability, returns and sustainability. Working together with our stakeholders, we will create a brighter future. I am truly excited about what we have realized already and can achieve together. On behalf of the Managing Board, I would like to thank everyone who helped make 2018 a great year for DSM: our customers, our business partners, our shareholders, our people, and my colleagues in the Executive Committee, as well as the Supervisory Board.

Feike Sijbesma
CEO/Chairman Managing Board Royal DSM

# DSM and the Sustainable Development Goals

In 2016, the United Nations launched the Global Goals for Sustainable Development (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 in a positive way toward achieving the SDGs.

Our purpose aligns most closely with five of the SDGs, and we show here some examples of our contributions and commitments toward these core SDGs. In addition, we believe that we can contribute to the other SDGs. Information about our engagements can be found throughout this Report, as well as in the Sustainability Statements.

## Nutrition & Health

**We contribute through…**

… our Nutritional Products that support the nutritional requirements both in the developed and developing world.

…our joint venture, Africa Improved Foods in Rwanda, that sources local maize and soy to locally produce fortified porridges, helping local people access the nutrients they need.

…our Food Specialties that reduce salt, fat and sugar in the daily diet.

…our Biomedical devices, which contribute to improved quality of life for surgical patients.

…our leadership, support and technical assistance to the Scaling Up Nutrition (SUN) Business Network, enhancing and accelerating the potential of SMEs that are working to improve the nutritional quality of the food system.

…working with partners to advocate for dietary switches that enable improved health within planetary boundaries.

**Our commitments**

- Together with the United Nations World Food Programme, we will raise awareness for improved nutrition while continuing to develop new food solutions
- We will reach 50 million beneficiaries (pregnant and lactating women and children <2 years old) with nutritional fortification.
- 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

**Our key SDG targets***

2.1 2.2 3.2 3.4 3.9

## Climate & Energy

**We contribute through…**

… our Advanced Solar and biofuel solutions which contribute to the uptake and efficiency of renewable energy sources.

…our high-performance materials which improve energy efficiency in and lower emissions from the automotive, maritime and food sectors.

…our animal feed solutions (such as Project Clean Cow), which promote resource efficiency and reduce greenhouse gas emissions.

…advocating for a shift to a low-carbon economy, including implementing a meaningful price on carbon.

**Our commitments**

- We will reduce our Scope 1 + 2 greenhouse gas emissions by 30% by 2030 (vs. 2016)
- We will improve our energy efficiency by >1% on average annually till 2030
- 75% of our purchased electricity will be from renewable sources by 2030
- We apply an internal carbon price of €50/t $CO_2$eq on our key investments

**Our key SDG targets***

7.2 7.3 13.2 13.3

* The key targets demonstrate how our contributions and commitments link to the SDGs.
The full text of the SDG targets can be found at https://sustainabledevelopment.un.org/sdgs by clicking each of the SDG icons.

## Resources & Circularity

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

**We contribute through…**

... materials that enable a circular economy, such as Niaga®, Akulon® RePurposed and EcoPaXX®.

…supporting the food system through our joint venture, Veramaris®, which replaces wild caught fish in fish feed for aquaculture, and by reducing food waste through packaging and preservation solutions.

…our waterborne resins that have lower VOC emissions.

…our biofuel solutions, which enable fuel production from biomass from agricultural residues.

…working with advocacy partners to scale up circular economy solutions, reduce food waste and promote the role of renewable raw materials.

**Our commitments**

- 'Safe by design' is the leading principle in the development of new and better products and processes
- 80–90% of our waste will be recycled by 2020
- We will improve our air emissions efficiency by 40% by 2020 (vs. 2015)

**Our key SDG targets***

12.2 12.3 12.4 12.5 12.6

# Toward measuring impact on the SDGs

**The Chemical Sector SDG Roadmap**

We joined the World Business Council for Sustainable Development's Chemical Sector SDG Roadmap working group in 2018. In July, this group published a Roadmap that defines the key impact opportunities where the sector can make the most meaningful contribution to the material SDGs and SDG targets of the sector. Importantly, it recognizes the potential for both positive and negative impact on the SDGs.

We support the Roadmap's invitation to the chemical industry to collaborate around efforts to achieve SDG action.

**De Nederlandsche Bank (DNB) working group on SDG Impact Measurement**

We were invited to join the DNB working group on SDG Impact Measurement. This working group brings together a number of Dutch investors, the Global Reporting Initiative and invited companies to define standardized positive SDG impact indicators.

*"We are convinced that companies will increasingly be held responsible for the societal impact of the products and services that they sell. Consequently, the ability to accurately measure impact will only become more important for all companies and we promote all efforts aimed at that goal. As investors we need reliable impact data to report to our own stakeholders,"* states Felix Lanters, Head of Equities, PGGM. *"We are proud that PGGM is part of the Nederlandsche Bank's working group on SDG Impact Measurement and we are pleased that DSM, a purpose-led company that already has impact, has accepted the invitation to share their journey."*

**UBS Impact Measurement for Listed Equities**

Together with Harvard University (Massachusetts, USA), City University of New York (New York, USA) and University of Wageningen (Netherlands), this initiative has the goal of defining impact measurement, through products and services, that cover the impact categories of Climate change and air pollution, Water scarcity, Food security and Health care, aligned to the SDGs. We are working together with Harvard University to refine the impact category on Food security.

# Strategy 2018

**€1,532**[1]

**€1,822**

Adjusted EBITDA[2]
(in millions)
+6%[1] / +26% versus 2017

**13.3%**[1]

**16.8%**

ROCE versus
12.3% in 2017

**+6%**[1]

**+11%**

Organic sales growth
versus 2017

**76%**

Employee
Engagement Index
versus 75% in 2017

**62%**[1,3]

Sales of
Brighter Living Solutions
versus 62% in 2017

2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
7 AFFORDABLE AND CLEAN ENERGY
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

[1] Excluding temporary vitamin effect, see table on page 65.
[2] See page 174 for reconciliation to EBITDA.
[3] For a small percentage of sales (approximately 2% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.

In 2015, we communicated our three-year strategy called Strategy 2018: *Driving Profitable Growth*, which has a strong focus on capturing the full potential of our new business portfolio after the extensive transformation that occurred in the period 2010–2015 and translating this into strong financial results.

Strategy 2018 had two headline financial targets: high single-digit percentage annual Adjusted EBITDA growth and high double-digit basis point annual ROCE growth.

### Strategy 2018: *Driving Profitable Growth*

| | | | |
|---|---|---|---|
| **Two headline financial targets** | High single-digit percentage annual Adjusted EBITDA growth | High double-digit basis point annual ROCE growth | |
| **Clear actions identified to achieve targets** | Businesses aim to outpace market growth in all segments | € 250-300m cost reduction and efficiency improvement programs | Consistent improvements in capital efficiency |
| **Additional items underpinning strategy** | Stepping up sustainability aspirations | Global organizational and operational adjustments | Extract value from Pharma & Bulk Chemicals joint ventures |

To deliver on these targets, we defined clear actions, including outpacing market growth, cost reduction and efficiency improvements, and making a continuous push for consistent improvements in capital efficiency. We initiated extensive cost-reduction and improvement programs with the aim to deliver € 250–300 million in cost savings by the end of the strategic period versus the 2014 baseline.

> “ We have become a growth company with ambitious sustainability efforts across the three dimensions of People, Planet and Profit.”
>
> **Philip Eykerman, DSM Executive Committee**

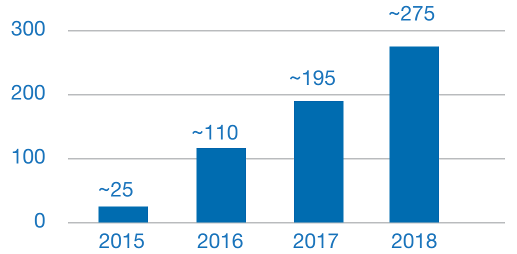
We successfully executed our strategy. With a very strong 2018, we have outperformed our ambitious financial and sustainability targets. We delivered strong organic growth, with greatly improved operational and financial performance and with significant value creation in all our businesses. In addition, we took important steps to monetize our non-core Pharma and Bulk Chemicals joint ventures. Even considering the additional profitability in the Nutrition business driven by an exceptional temporary vitamin effect, 2018 was a strong year.

For the strategic period 2016–2018, we:

- Outperformed on our financial targets on Adjusted EBITDA growth and ROCE growth
- Outpaced market growth in both Nutrition and Materials
- Created a strong and focused innovation pipeline to enhance long-term growth
- Executed extensive cost-reduction and improvement programs which delivered run-rate cumulative savings of ~€ 275 million at the end of 2018 versus the 2014 baseline
- Achieved improvements in capital efficiency
- Extracted significant value from our joint venture partnerships Patheon, ChemicaInvest and DSM Sinochem Pharmaceuticals. The combined proceeds of these divestments were around € 3 billion. We plan to divest our remaining minority shares in AOC Aliancys (18.9%) and AnQore (35%) in the coming period
- Strengthened the organization, enabling a stronger result-oriented company and culture

### Timing of cumulative cost savings[1]

(x € million)




[1] Versus 2014 baseline

Another key part of the strategy was to continue to strengthen our commitment to sustainability by:

- Reducing our own environmental footprint
- Enabling other stakeholders, especially our customers, to be more sustainable
- Advocating on key areas of competence by actively raising awareness and sharing knowledge

By doing so, we continued to work toward the United Nations Sustainable Development Goals, especially SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Production and Consumption) and SDG 13 (Climate Action). For more information, see 'DSM and the Sustainable Development Goals' on page 10 and throughout this Report.

During the execution of our Strategy 2018, we continually monitored, assessed and responded appropriately to societal, macroeconomic and segment-specific developments as they occurred. Our approach to managing both opportunities and risks in our businesses is embedded in our operating and governance model and risk management approach. For more information, see 'Corporate governance' on page 108 and 'Risk management' on page 118.

### Strategy 2018 successfully delivered

*Total DSM financial results*

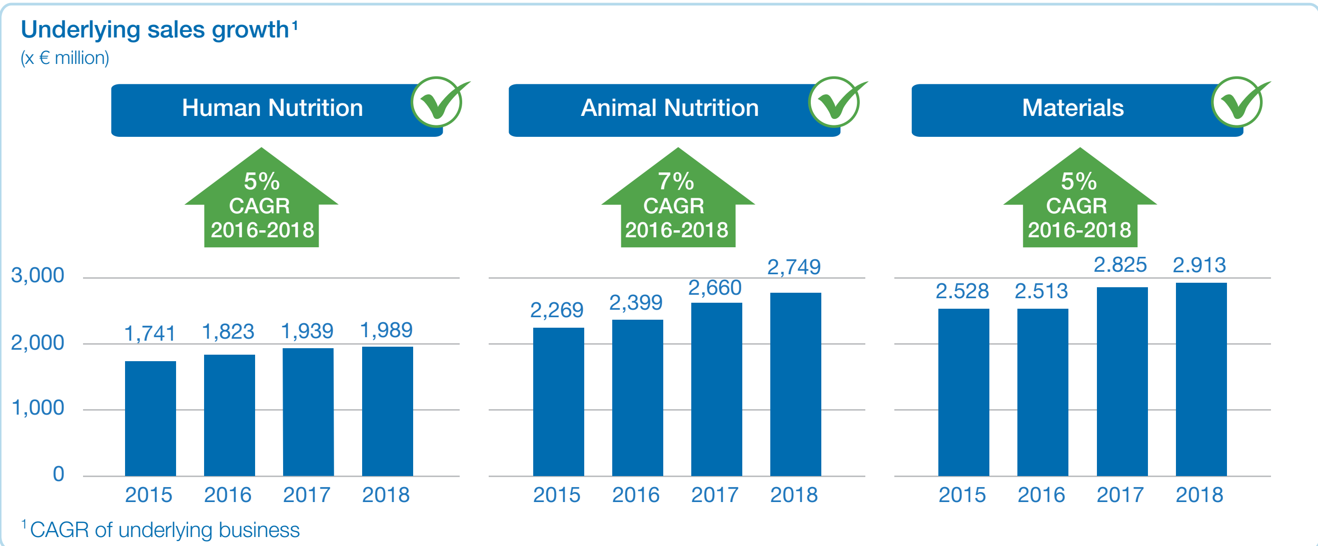
We significantly outperformed our financial targets in 2018. Even considering the estimated impact of the temporary vitamin effect, caused by an extraordinary supply disruption in the industry, we have delivered strong results. In the underlying business[1], we achieved 6% organic growth compared to 2017, with €8,852 million in sales. The Adjusted EBITDA from underlying business was up 6% from 2017, to €1,532 million. Adjusted for currencies, our growth was 10%, above our high single-digit percentage target. Our Return On Capital Employed (ROCE) from underlying business was up 100 basis points, to 13.3%, versus our target of high double-digit basis points.

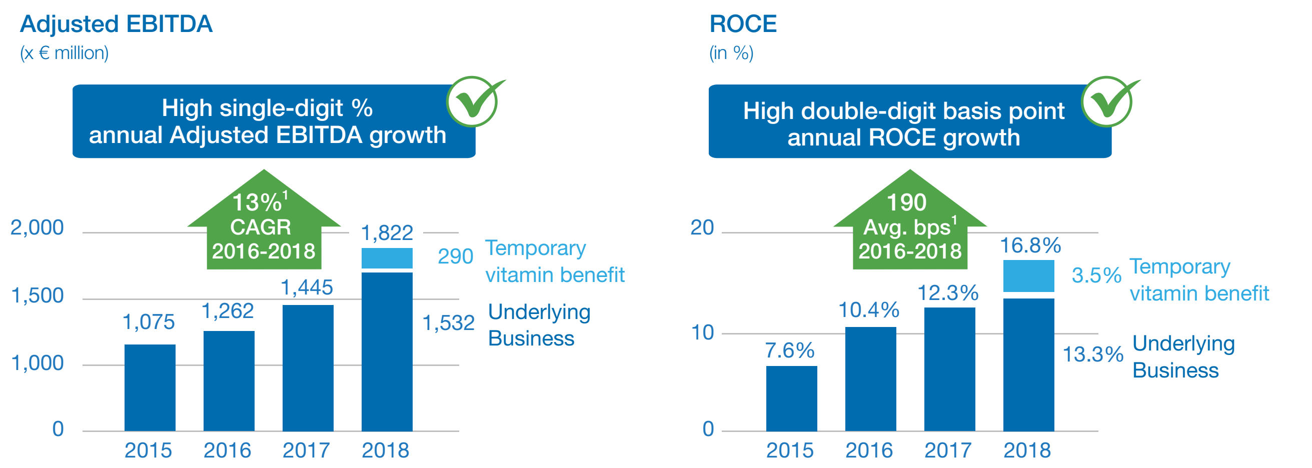
Including the estimated temporary vitamin effect, we realized €9,267 million in sales compared to €8,632 million in 2017, a 7% increase. We achieved a 26% total Adjusted EBITDA growth, up to €1,822 million from €1,445 million in 2017. Our ROCE was 16.8%, up 450 basis points from the previous year. Net profit was €1,079 million.

Over the strategic period 2016–2018, we consistently outperformed our targets. We realized an average Adjusted EBITDA growth of 13% against an average high single-digit percentage yearly target. The same goes for the average high double-digit basis point ROCE growth, which was 190 basis points per year over the period 2016–2018.

In 2018, we delivered strong organic growth, with greatly improved operational and financial performance and significant value creation in all our businesses. Both our Nutrition and Materials businesses contributed to this strong performance. Nutrition's broad, global portfolio in food and feed ingredients, as well as its expanded portfolio of solutions, drove strong growth. Meanwhile, Materials continued its 'silent transformation', successfully focusing on higher-growth, higher-margin, specialty segments and delivering higher-performing solutions that are innovative, safe and lightweight, as well as being more sustainable and environmentally friendly.

[1] Excluding temporary vitamin effect, see table on page 65.






[1]CAGR and average bps of underlying business

| Financial targets 2016–2018 | Realization | |
|---|---|---|
| | **2018** | 2017 |
| High single-digit percentage annual Adjusted EBITDA growth | | |
| - based on underlying business | 6% | 15% |
| - total business | 26% | 15% |
| High double-digit bps annual ROCE growth | | |
| - based on underlying business | 100 bps | 190 bps |
| - total business | 450 bps | 190 bps |

For detailed information on DSM's group financial results in 2018, see 'Profit' on page 58.

*Nutrition financial results*

Our Nutrition business performed strongly, benefiting from a temporary exceptional vitamin effect caused by supply disruptions in the industry. The total temporary vitamin effect was estimated at €415 million for the year, mainly in Animal Nutrition & Health. Sales in the underlying business were up 3% to €5,722 million. The organic sales growth in the underlying business was 7%, with strong volumes, up 4%, as well as price growth of 3%. Nutrition sales growth including temporary vitamin effect, was 10%.

Nutrition continued to deliver on its aspired above-market growth ambition through further leveraging its unique global products and local solutions business model, supported by marketing and sales excellence and customer-led innovation.

Animal Nutrition & Health delivered a strong year, with 8% organic growth in the underlying business versus 2017. This good growth was achieved against a tough comparative year. Business conditions were favorable in almost all regions. Sales to Brazil were softer due to temporary shutdowns, mainly caused by strikes in the second quarter. Prices in the underlying business increased by 4%, driven by pricing initiatives to mitigate higher costs of sourced ingredients and the impact of negative exchange rates. Furthermore, prices were supported by the effects of the 'Blue Skies' policies in China.

Our Animal Nutrition & Health business continued to benefit from our ability to address a wide range of species, as well as from a diversified geographical presence. Markets in animal feed were favorable, with strong demand for poultry, pork and salmon.

Human Nutrition & Health delivered a strong year, with 7% organic growth and 4% volume growth. All regions and segments continued to perform well with an especially strong growth in dietary supplements, i-Health and the pharma segment. Early life nutrition showed solid performance in all regions. Construction started on our second premix solutions facility in Poland, which will be exclusively dedicated to the maternal and infant nutrition market. Sales to food & beverages continued to develop well, driven by tailored multiple-ingredient premix solutions, and supported by marketing & sales excellence and local application know-how. Prices were up by 3%, driven by a combination of a favorable mix due to strong growth in premix and i-Health, as well as benefits from higher prices for premix and advanced formulations, supported by the effects of the 'Blue Skies' policies in China.

In Food Specialties, sales were 9% lower compared to 2017, due to the deconsolidation of Yantai Andre Pectin and negative currency effects. Good sales growth rates in hydrocolloids, enzymes and cultures were partly offset by soft sales in savory ingredients as a result of capacity limitations early in the year that prevented the business from fully capitalizing on the positive market conditions. This resulted in an overall organic growth of 1%.

After a successful initial market introduction in North America in mid-2018, we accelerated our large innovation project for fermentative Stevia by establishing a joint venture with Cargill, as announced last November. Stevia is a zero-calorie, cost-effective sweetener that can substitute sugar in food and beverages.

In Personal Care & Aroma Ingredients, sales were up 8%, with a very strong 11% organic growth, partly offset by 3% less favorable currencies. All personal care product lines, including sun, skin and hair care delivered good above-market growth, whereas aroma ingredients performed very strongly in 2018. Successful commercialization of the innovation pipeline further contributed to a very good year for the business.

For Nutrition, the Adjusted EBITDA growth in the underlying business was up 6% to € 1,117 million compared to the previous year. This was driven by strong volume growth, pricing strength, and contributions from the savings and efficiency improvement programs, partly offset by significant negative foreign exchange effects. The Adjusted EBITDA margin in the underlying business was 19.5%, compared to 18.9% in 2017. The Adjusted EBITDA for total Nutrition was € 1,407 million, up 34% from the previous year, including the estimated total temporary vitamin effect of € 290 million, mainly in Animal Nutrition & Health. The Adjusted EBITDA margin for total Nutrition was 22.9% in 2018, compared to 18.9% in 2017. Over the strategic period, the Adjusted EBITDA was consistently over our aspired range of 18–20%.

*Materials financial results*

In 2018, our Materials business reported 5% organic sales growth, driven by an increase of 2% in volumes and 3% in prices, mainly reflecting commercial pricing initiatives aimed at offsetting higher raw material costs.

DSM Engineering Plastics and DSM Resins & Functional materials delivered 7% and 2% organic growth respectively. The good business conditions and strong end-market demand started to soften in the second half of the year, with some destocking in the value chain at year-end. DSM Dyneema had a very strong performance throughout 2018, with 6% organic growth, driven by continued high demand in personal protection. To fulfill the growing demand, the business started constructing additional production lines in the USA and in the Netherlands.

Total Adjusted EBITDA was up 5% in 2018 to € 512 million, driven by good volume growth and our continuous shift toward a specialty portfolio, and despite a negative currency impact of 2%. The portfolio's silent transformation was also reflected in the 2018 Adjusted EBITDA margin of 17.6%, versus 17.3% in 2017.

*Innovation results*

The DSM Innovation Center has multiple functions within DSM, including accelerating the innovation power of our core businesses and extracting value from our Emerging Business Areas (EBAs). At DSM, we want at least ~20% of our sales to come from innovation sales, which we define as sales from products and solutions introduced in the last five years. In 2018, innovation sales (underlying business) amounted to 19%. This is in line with our aspiration.

DSM Innovation Center sales were up 2%, with 5% organic sales growth largely offset by a weaker US dollar. DSM Biomedical volumes were up driven by strong sales in the drug delivery segment in the second half of the year. DSM Advanced Solar reported slightly lower volumes resulting from a slowdown in demand for solar panels following a policy change by the Chinese government to reduce the number of subsidized solar parks to be installed. DSM Advanced Solar introduced a new generation of solar backsheets which is being well received by the market. DSM Bio-based Products & Services made good progress in 2018, improving the robustness of the production technology for second-generation bio-ethanol and introducing a new generation of enzymes for first-generation bio-ethanol.

The Adjusted EBITDA was relatively stable compared to 2017. In the fourth quarter, we benefited from the collaboration and license agreement with Aerie Pharmaceuticals.

For more information on innovation and R&D, see 'Innovation' on page 94.

| | **2018** | 2017 |
|---|---|---|
| Innovation sales underlying business[1] | 19% | 21% |
| High-growth economies underlying business[1] | 43% | 44% |

[1] Excluding temporary vitamin effect, see table on page 65

*Balanced global footprint*

Sales growth was strong among all regions, with favorable high double-digit growth in Western Europe and single-digit growth in North and Latin America. Sales were good in Latin America and China, despite some temporary shutdowns in Brazil. Solid growth was achieved in China, India and Eastern Europe. All high-growth economies together currently represent 43% of our sales, which is in line with 2017. The share of sales in these economies as a proportion of our total sales gives us a well-balanced global footprint.

*Sustainability results*
At DSM, sustainability is not only our core value and a key responsibility; it is also increasingly an important business driver that is fully engrained in our strategy, business and operations. Our approach for bringing about positive change is to reduce, enable and advocate.

We continued to further embed sustainability across all of our business activities, both in recognition of our responsibility to reduce our environmental footprint and to help our supply chain, customers and partners do the same. In particular, we focused on the areas of nutrition, climate and energy, and the circular and bio-based economy. In 2018, our Brighter Living Solutions accounted for 62%[2] of sales (from underlying business). We are proud to be globally recognized for our leadership in this area. We are pleased to be named as the global leader in ESG (environmental, social and governance) within the chemicals industry by Sustainalytics for the second year in a row. We ranked number one of 135 companies. Our climate change strategy received an A$^{-}$ rating from CDP, the non-profit global environmental disclosure platform. We also maintained our high AA rating from MSCI. In addition, we topped the Dow Jones Sustainability World Index for the eighth time. This ranking means we will continue to have RobecoSAM Gold Class status in 2019.

To read more about our environmental performance, see 'Planet' on page 52.

*Organization and culture*
We adjusted our global organizational and operating model to support our growth. To achieve our strategy, we set targets around employee safety, engagement and diversity.

Our people feel even more inspired, engaged and committed: our annual Employee Engagement Index rating increased from 75% in 2017 to a highest-ever score of 76% in 2018. Almost all elements of our Employee Engagement showed improvement. The most notable increases were seen in career opportunities and opportunities for learning and development.

We continued to focus on improving our performance in inclusion and diversity. Although our work in this area is far from done, it is pleasing to see that the percentage of female executives increased from 17% to 19%, making progress toward 25% by 2020. The number of under-represented nationalities at executive level increased to 60%, achieving our long-term aim of 60%. For more information, see 'People' on page 42.

We worked on further improving our safety performance in 2018. We focused on keeping safety awareness high and we developed a new set of global leading performance indicators to help us to more proactively tackle safety observations and prevent incidents from occurring. The Frequency Index of all DSM Recordable Injuries improved from 0.36 to 0.33. However, in September 2018, a tragic accident took place at our Tortuga site in Pecém, Brazil, where one of our subcontractors lost his life when opening a container. This has deeply shocked us all. It demonstrates once again that Health and Safety must always remain our top priority, and that we must work to continuously improve our safety performance, day in, day out. For more information, see 'What still went wrong in 2018' on page 138.

*Extracting value from our partnerships*
Acting on our commitment to monetize our remaining Pharma and Bulk Chemicals joint ventures, we divested our non-core participations in DSM Sinochem Pharmaceuticals and Fibrant in October 2018. Together with our cash generation, this all led to a net debt reduction in 2018 from € 742 million to € 113 million at year-end. We plan to divest our remaining minority shares in AOC Aliancys (18.9%) and AnQore (35%) in the coming period. Since 2015, we have monetized our non-core joint ventures in pharma (especially Patheon) and Fibre Intermediates for a total of about € 3 billion. For more information, see 'Partnerships' on page 104.

## Strategy review process for the period beyond 2018

In 2018, having achieved EBITDA growth rates and improvements in return on capital employed above the original targets and having made good progress with innovation, cost reduction and efficiency programs at business level, as well as with monetizing our non-core assets, we brought forward our regular strategy review process. In June 2018, we launched Strategy 2021: *Growth & Value - Purpose led, Performance driven*, as outlined in the 'Strategy 2021' chapter on page 22.

The DSM Managing Board (from left to right): Geraldine Matchett (CFO), Feike Sijbesma (CEO/Chairman) and Dimitri de Vreeze.

[2] For a small percentage of sales (approximately 2% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.

# Our purpose is to create brighter lives for all

# We are already reaching* ~2.5 billion people worldwide

* Lives Reached is a measure of consumers reached through consumer products of third parties containing DSM products and solutions, but currently covers only a part of DSM's businesses. As we are a business-to-business organization, the estimate is based on key assumptions relating to the markets covered, sources of information on DSM's market share, number of consumers and consumer consumption information and methodology used to eliminate double counting. For more information, please see 'Explanation of concepts and ratios' on page 243.

# Purpose

### The next step for DSM: a purpose-led company

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. Now we are taking a decisive next step as a purpose-led company, contributing to a brighter world for all with our science-based solutions.

Ten years ago, the general belief was that, as a company, you focused either on profit or on improving the world, but that you could not do both. Today, we see more and more companies, like ourselves, proving that doing well financially can go together with doing well for the world. This will only become more important. Within the next 10 years, good financial results will have to go hand in hand with purpose, otherwise companies will lose their license to operate. Our purpose is therefore fully anchored in our Strategy 2021: *Growth & Value - Purpose led, Performance driven.*

> " We cannot be successful, nor can we call ourselves successful, in a society that fails."

**Feike Sijbesma, CEO/Chairman Managing Board**

### Our purpose is to create brighter lives for all

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

Businesses need to balance the need to generate profitable growth with the need to play a positive role in the world.

Ultimately, 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 brighter future for generations to come. This is important because:

- *Customers* prefer to work with suppliers who share their values
- *Employees* seek meaning in their work and increasingly want to make a positive contribution
- *Shareholders* prefer to invest in companies that demonstrate beneficial social and/or environmental impact alongside a solid financial return
- *Society at large* ultimately determines our license to operate

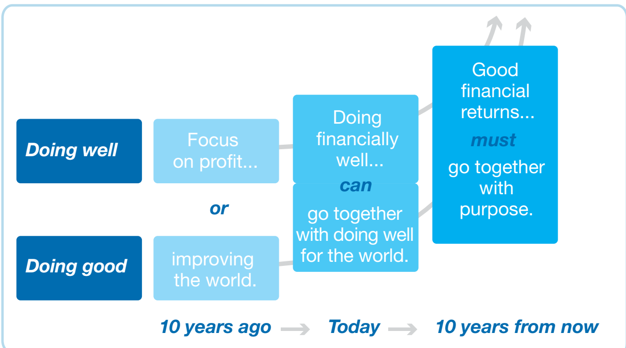
By ensuring that these objectives go hand in hand, we will be more appealing to investors, attract the best talent and the most innovative customers, and build the right relationships with partners and governments around the world.

We are sharpening our focus and connecting our purpose, strategy and culture in order to inspire all our people and stakeholders to achieve more together. We are further evolving into a purpose-led, science-based company in Nutrition, Health and Sustainable Living.

### Acting on our purpose

We make change happen in three ways:
*Improve*: we improve and adapt our own operational impact by further improving safety, decreasing our emissions and stepping up our use of renewable energy
*Enable:* we enable our customers and partners to deliver sustainable and healthy solutions for the planet and society
*Advocate*: we advocate for the future we believe in and fully accept our responsibilities as a member of society

We recognize the increased scale and impact of private companies in the global economy. Therefore, we take an integrated approach to our responsibilities. Our Brighter Living Agenda brings together many existing purpose-led initiatives and creates an actionable framework for further engagement with our stakeholders.




### Purpose drives performance

By focusing on our purpose, we show that it is not only possible but actually beneficial to grow sustainably. We aim to achieve:

- More sustainability: by future-proofing our operations and reducing risk exposure and costs, through working with our value chains to reduce emissions and deal responsibly with energy and other resources

- More growth: by identifying consumer needs and responding with differentiated, science-based innovations, we can make a collaborative contribution to the Sustainable Development Goals together with our customers
- More engagement: by building employee motivation, connecting with ESG-committed investors, and advocating for the future we want for industry and society

### DSM Brighter Living Agenda

#### Improve

**Nutrition & Health**

**Reducing occupational safety incidents and promoting health and well-being in our own workforce**

**Occupational Safety:**
- Safety Frequency Recordable Index <0.25 by 2021

**Employee well-being programs:**
- Vitality
- Skin care protection
- Vitamin supplementation

**Climate & Energy**

**By 2030, our goal is to reduce our own carbon footprint by:**
- 30% absolute reduction in GHG emissions (scope 1 and 2)
- Reducing scope 3 GHG emissions (in our value chain), starting off with suppliers
- Purchasing 75% of our electricity from renewable resources
- Extending the breadth and depth of our internal carbon pricing of €50/ton $CO_2$ equivalent

**Resources & Circularity**

**Unlocking more value from the limited resources that are available by:**
- Executing our Responsible Care Plan addressing waste, water and emissions
- Embedding circular and bio-based thinking into sourcing, operations, innovation and portfolio

#### Enable

**Nutrition & Health**

**Enabling healthy living and diets for all:**
- Replacing salt and sugar
- Addressing nutrient deficiency among at-risk populations (Africa Improved Foods, World Food Programme, Nutrition Improvement)
- Fortifying processed foods
- Sustainable animal proteins
- Plant-based proteins
- Advancing biomedical materials
- Preventing injuries from cuts, stabs and ballistic threats
- Skin care

**Climate & Energy**

**Enabling the low-carbon economy through solutions that help customers cut emissions:**
- Limiting the use of fossil fuels (biofuels, solar)
- Enabling the future of mobility (weight reduction in cars, biofuels)
- Improving digital infrastructure and mobile devices
- Reducing enteric methane emissions from cattle (Project Clean Cow)

**Resources & Circularity**

**Enabling the transition toward a circular & bio-based economy:**
- Reduction of landfill (Niaga®)
- Increased use of bio-based ingredients
- Replacing solvent-based coatings with waterborne and powder coatings
- Solutions to reduce food loss and waste (Pack-Age®, enzymes)
- Eliminating waste from prototyping (3D printing)
- Protecting life in the ocean (Veramaris®, aquaculture feed)
- Akulon® RePurposed
- Balancius™

#### Advocate

**Nutrition & Health**

**Advocating healthy diets within planetary boundaries**

**Active in partnerships to fight malnutrition:**
- World Food Programme
- Global Alliance for Improved Nutrition
- World Vision
- Scaling Up Nutrition
- UNICEF
- Vitamin Angels

**Active in partnerships to address sustainable and healthy nutrition:**
- Food Reform for Sustainability and Health (FReSH), part of World Business Council for Sustainable Development (WBCSD)
- European Institute of Innovation and Technology (EIT) Food
- World Economic Forum (WEF)
- Sustainable Food Initiative

**Climate & Energy**

**Advocating climate action and building the movement for a low-carbon economy**

**Leading roles/engagement in:**
- World Bank Carbon Pricing Leadership Coalition
- WEF CEO Climate Leaders
- WBCSD Climate & Energy
- Taskforce on Climate-related Financial Disclosures
- Renewable Energy 100 (RE100)
- United Nations Global Compact

**Resources & Circularity**

**Advocating the transition from a linear to a circular and bio-based economy**

**Leading roles/engagement in:**
- WEF Platform for Accelerating the Circular Economy (PACE)
- WBCSD Factor10
- Circle Economy, Circular Economy 100 (CE100)
- Ellen MacArthur Foundation

## We cannot do this alone

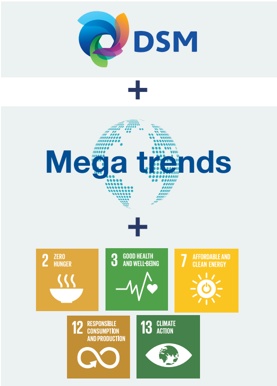
Working with and for our stakeholders, we will create a stronger legacy and a brighter future for generations to come. We are already recognized as a company making a positive contribution to a changing world. We have achieved this thanks to our employees and shareholders, who are committed to creating a better planet for all. By closely collaborating with our customers, we create partnerships and connections that help us solve the biggest global challenges and at the same time help generate a fairer and more prosperous society for all.

# Strategy 2021

Strategy 2021: *Growth & Value - Purpose led, Performance driven*

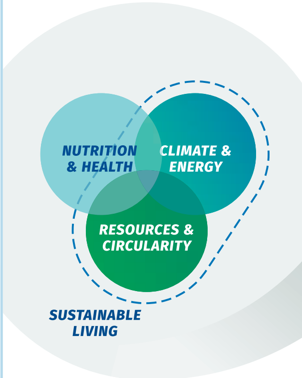
**Our competences and purpose...**

DSM's key competences + addressing megatrends and the UN SDGs:




**provide growth opportunities in the focus domains...**

A science-based company active in Nutrition, Health and Sustainable Living:




**creating a growth company...**


**with targets that underpin our mission.**

Our 2019-2021 targets:

**High single-digit % annual increase in Adjusted EBITDA**

**~10% average annual increase in Adjusted net operating free cash flow**

**+**

**Value-creating M&A**

## Purpose sets scope for further growth and evolution

With Strategy 2021: *Growth & Value - Purpose led, Performance driven*, we will evolve further toward being a purpose-led, science-based company operating in the fields of Nutrition, Health and Sustainable Living. Our strong growth platform, centered on developing innovative solutions addressing Nutrition & Health, Climate & Energy and Resources & Circularity, together with increased customer-centricity and our large innovation projects, will drive above-market growth. At the same time, we will remain focused on cost control and operational excellence, allowing us to accelerate profit growth and cash generation. Organic growth will be complemented by acquisitions, predominantly in Nutrition.

Our Nutrition business will focus on human nutrition (ingredients and solutions for food & beverages, as well as specialty nutrition, nutritional ingredients, consumer-branded products and personalized nutrition), animal nutrition (with premix and specialty solutions), and personal care and aroma ingredients.

Our Materials business will further develop as a high-growth, higher-margin specialty business, and will focus on the categories 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, we can grow faster and reduce our cost and risk profile. We will further step up our ambitions regarding the reduction of greenhouse gas emissions in line with the Paris Agreement, our energy efficiency and our use of renewable energy.

### *Performance to deliver growth and value*

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

We are committed to top-line growth ahead of market, which will be supported by expanded solution offerings that place the customer even more firmly in the center of our activities, as well as by harnessing digital capabilities to increase customer intimacy, improve productivity and efficiency, and support new business models. Approximately 45% of sales will come from high-growth economies.

We will leverage our unique technology capabilities to develop innovative sustainable solutions in Nutrition & Health, Climate & Energy and Resources & Circularity and will invest approximately 5% of sales in R&D to develop differentiating science and technology. Our innovation projects, including Veramaris®, Project Clean Cow, fermentative Stevia and Niaga®, will result in about 20% of sales coming from innovation.

The following table describes the ambitions underpinning our financial targets:

| 2021 targets[1] | Ambitions underpinning our targets[1] | |
|---|---|---|
| High single-digit percentage annual **Adjusted EBITDA** increase | 1. **Sales** | Above-market sales growth (~5%) for Total DSM, Nutrition and Materials |
| | 2. **Adjusted EBITDA margin** | Nutrition: >20%<br>Materials: 18–20% |
| ~10% average annual **Adjusted net operating free cash flow**[2] increase | 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 DSM's 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 expenditures and drawing rights.

Greater efficiencies and a heightened focus on higher-margin specialty solutions will enable new Adjusted EBITDA margin ambitions by 2021 for Nutrition (over 20%) and Materials (18–20%). Organic top-line growth combined with these enhanced margins will drive high single-digit Adjusted EBITDA growth.

We aim to accelerate growth in Adjusted net operating free cash flow, generating an average annual increase of approximately 10%. This results from the ambition to:

- Reduce working capital levels by around 50 basis points annually
- Take a disciplined approach to capital expenditure, with an overall level of spend of approximately 6.5% of sales
- Drive improvements in organic Return on Capital Employed (ROCE) of around 1% annually

Our overall deployment of capital is expected to drive Adjusted Earnings Per Share (EPS) growth ahead of Adjusted EBITDA growth. Our cash allocation policy remains unchanged and has a clear order of priority for cash deployment:

- Disciplined capital expenditure for organic growth: about 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

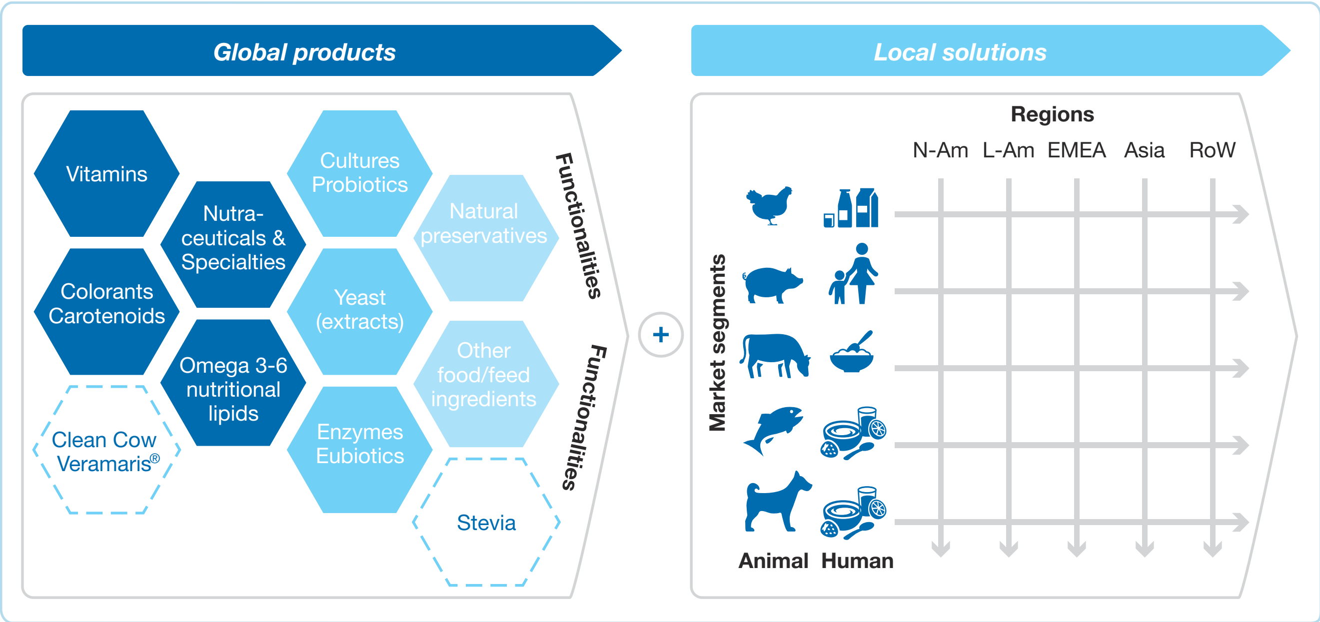
We remain committed to maintaining a strong, investment-grade credit rating.

While keeping our policy of a stable, and preferably rising, dividend unchanged, we propose a dividend increase of about 25% to €2.30 per ordinary share over 2018, as already reflected in the interim dividend over 2018 paid in August 2018. This step-up in dividend is linked to the earnings growth of the underlying business. In line with the targets set for the period 2019–2021, our performance is expected to result in further dividend growth, which could lead to an expected average payout of 40–50% of adjusted earnings.

We will target M&A predominantly in Nutrition, given its unique growth potential, resilience, strong leadership position and potential for value creation.

## Nutrition

We have built a unique, highly integrated, global and broad portfolio in food & beverage, specialty food and feed, and nutritional ingredients and solutions, meeting local needs through our unparalleled network. We possess a diverse and significant premix footprint, with superior formulations and delivery systems, helping to drive sustainable nutritional solutions. This infrastructure is fueled by our complete portfolio of nutritional ingredients, which includes minerals, vitamins, nutritional lipids, eubiotics, enzymes and yeasts, as well as texturants, flavors and cultures. This diversity and level of integration creates a resilient portfolio with limited exposure to single products or customers, while benefiting from the opportunities provided by global megatrends.




Focused on Nutrition & Health, we will continue to aim for above-market growth with targeted, high single-digit Adjusted EBITDA growth and an Adjusted EBITDA margin greater than 20% by 2021. We will complement organic growth with inorganic growth. At the same time, we will further build on the successful initiatives of Strategy 2018, increasingly placing the customer at the center of everything we do, while delivering large, sustainability-driven, innovation projects.

*Animal Nutrition & Health*

We will continue to seek to deliver above-market sales growth through our acCElerate program, increased levels of innovation, and further investment in our business-to-farmer and go-to-market capabilities. The first phase of acCElerate began in 2018, as we sought to align our operating model and organization to deliver the strength of our global capability by meeting increasingly local demand trends, as well as by defining new metrics to assess regional performance.

Subsequent phases of this program will focus on:

- Marketing & Sales excellence (especially building specialist functions to address wider species opportunities and pursue new health solutions)
- Customer-centricity & agility, to place the customer at the heart of everything we do, by improving the end-to-end experience for the customer
- Further investing in our business-to-farmer (e.g. in China) and go-to-market capabilities

In addition, we will pursue radical innovation for core sustainability topics, all of which seek to deliver long-term solutions for the industry with the potential to create significant value for our company and our customers.

*Human Nutrition & Health*

Building on the success of the first two parts of the LiftOff! Program as part of Strategy 2018, we will step up further in Strategy 2021 with a third phase of LiftOff! to drive above-market organic growth through:

- Focusing on customer-centricity and agility, seeking to move closer to the customer by strengthening the value propositions of our products and services, creating end-to-end customer experiences, and enhanced innovation and application capabilities
- Continuing to invest in business-to-consumer to ensure the growth of i-Health beyond the United States, as well as business-to-me (the practice of marketing to the individual based on the desires of that individual) and personalized nutrition

In addition, we will continue to pursue inorganic opportunities in food and beverages as well as dietary supplements, to enhance and complement our already strong market positions.

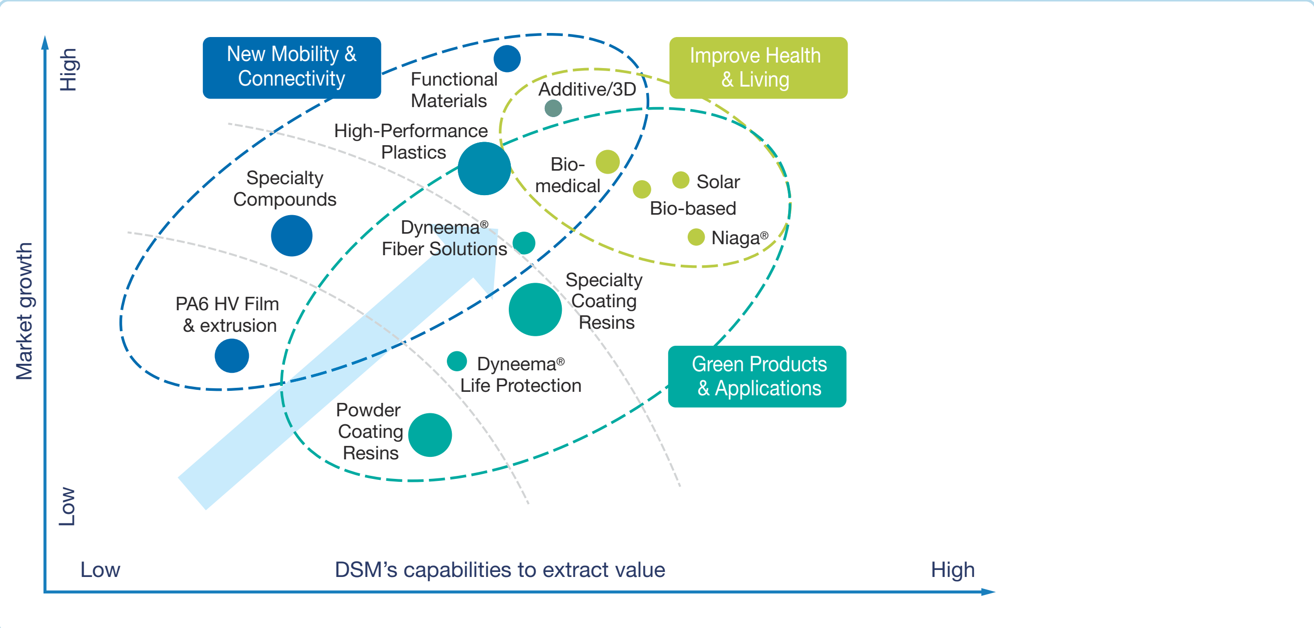
Our business is well positioned to benefit from strong trends, as evidenced by the disruptive value chain shifts we are witnessing, which are leading to new opportunities in Human Nutrition & Health.

In food and beverages, we see an increasing number of local players entering the market in answer to the growing demand for local, healthy products of natural origin with reduced sugar, salt and fat. These new players have generally limited development and production assets and market their products through social media. Global players are facing the challenge of reducing costs in order to remain competitive while innovating their products. This scenario represents a unique opportunity for us. We offer tailored nutritional solutions to local players through our global presence and our R&D competences. At the same time, we help global players reduce their manufacturing and R&D costs with our premix capabilities, but also provide innovative solutions to replace sugar, salt and fat. As an example, our joint venture with Cargill (Avansya) to bring zero-calorie, cost-effective, non-artificial sweeteners to market faster is well positioned to help food and beverage producers deliver the products and brands consumers prefer, with significantly reduced calories.

In specialty nutrition (especially dietary supplements), more health-conscious and educated consumers are increasingly seeking more personalized products based on their lifestyle, diet and genetic make-up, leading to a demand for more individualized advice, delivery systems and diagnostic tools. This requires a more integrated offering beyond the supply of nutritional ingredients alone — one that involves turning scientific know-how into expert advice for the consumer. To help us meet these needs, we are building on our existing business-to-business and business-to-consumer strengths in personalized nutrition and are also acquiring business-to-me learnings from leading startups such as Mixfit, Tespo and Biomarker.

### Materials

We are further future-proofing our Materials business by aligning it toward Sustainable Living, in line with our key focus domains of Climate & Energy and Resources & Circularity. This will further develop Materials into a high-growth, higher-margin specialty business, delivering above-market organic growth, focused on Improved Health & Living, Green Products & Applications and New Mobility & Connectivity.




In Improved Health & Living, we are focusing on the increasing demand for advanced healthcare applications. In addition, we offer solutions that enhance end-user safety and health conditions.

In Green Products & Applications, we are providing solutions that enable customers to cut emissions by using materials that are lighter, stronger, more efficient and more sustainable. We are also increasingly focusing on bio-based, recycled, and fully recyclable solutions.

In New Mobility & Connectivity, we are targeting materials that support the transition from fossil fuel to electric automotive power. We are also addressing the growing need for increased connectivity between products, devices and applications.

Across our businesses, we have intensified our focus on customer-centricity and have implemented several programs that focus on creating a positive experience for our customers.

### Innovation

Innovation is what transforms our 'Bright Science' into 'Brighter Living'. We can leverage our unique technology capabilities for developing innovative sustainable solutions through possessing a 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 Center, providing sustainable alternatives for chemical synthesis, as well as plant/animal-derived ingredients

- Material synthesis and characterization, and the capability to convert this into Sustainable Living applications — supported by our state-of-the-art Materials Science Center

The ability to continually deliver innovative and improved products and solutions to meet our customers' needs drives sales growth. 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, defined as products and applications that have been introduced over the past five years, accounted for 19% of total sales from underlying business in 2018. We aspire to maintain a level of around 20% during the new strategy 2019–2021 period, 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, allocating approximately 5% of sales in R&D.

Our organic growth will be supported by a number of focused, large innovation projects — for example, Project Clean Cow, Veramaris®, fermentative Stevia, enzymes and yeasts for 1.5$^{th}$ and 2$^{nd}$ generation bio-ethanol, Niaga®, Additive Manufacturing, plant-based proteins, bio-agriculture and biomedical adhesion barriers (Actamax™). These solutions are expected to be introduced to the market in the 2019–2025 time-frame. All these innovations seek to meet significant, global sustainability challenges in Nutrition & Health, Climate & Energy and Resources & Circularity. Altogether, we expect these to generate around € 350 million of sales and € 100 million of Adjusted EBITDA from 2021 to around € 1 billion and € 400 million, respectively, from 2025 onward.

As well as supporting innovation in our core businesses, the DSM Innovation Center also aims to develop its Emerging Business Areas (EBAs). These are promising growth platforms outside the scope of our business groups. They comprise DSM Biomedical, which focuses on innovative materials for medical devices; DSM Bio-based Products & Services, which focuses on clean energy from crop residues as well as bio-chemicals with enzymes and yeasts for biomass conversion; and DSM Advanced Solar, which offers yield-boosting solutions for solar energy.

## Enabling programs for accelerated growth

Our enabling programs will underpin and facilitate our ambitions by focusing on key areas such as performance-driven organization, leadership and people, culture, digitalization 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. In terms of organization, we are maintaining cost discipline and further optimizing the support functions. Moreover, we are further developing a customer-centric organization aligned with market/customer segments.

Regarding leadership and people, we are accelerating leadership development for both people and teams, as well as for effectiveness in growing our businesses. We are also embedding a global mindset through further internationalization.

In terms of culture, we introduced The DSM Ways of Working, which describe a daily mindset that enables everyone in our company to make a difference. These are described in more detail in 'People' on page 43.

### *Digitization and digitalization*

Digitization and digitalization drive our growth and improve our efficiency on three levels:

- Customer intimacy: improving top-line results by, for example, customer data analytics, omnichannel apps providing 24/7 customer experiences, and digital collaboration tools
- Operational performance: reducing costs by automation and data analytics to increase productivity in support functions and manufacturing, optimize operational processes, and improve safety, quality and plant reliability
- New business models: supporting entrepreneurship and artificial intelligence. Examples are our partnerships for digital value propositions and our pilots in the areas of personalized nutrition and animal feed

### *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 engrained in our strategy. We are stepping up our sustainability aspirations. By improving the impact of our own operations, enabling sustainable solutions for our customers and advocating sustainable business, we can grow faster and reduce our cost and risk profile. This is integral to our strategy and is detailed in the 'Brighter Living Agenda' on page 20. For more detail, see 'People' on page 42 and 'Planet' on page 52.

## Continued step-up in sustainability leadership

| | | | | | | |
|---|---|---|---|---|---|---|
| **Realization 2018** | ~8%[1] • GHG absolute reduction (vs. 2016) | 1.4%[3] • Energy efficiency improvement year-on-year | 41% • Purchased renewable electricity | 76% • Employee engagement favorable score | 0.33 • Safety Frequency Recordable Index | 62%[4] • Brighter Living Solutions |
| **2021 / 2030 Ambitions** | • 30% absolute reduction by 2030 (vs. 2016)[2] | • >1% average annually till 2030 | • 75% by 2030 | • >75% by 2021 | • <0.25 by 2021 | • >65%[5] by 2021 |

1 We estimate the effect of the underlying structural improvements in absolute GHG emissions to be roughly 8% versus 2016, while the total absolute GHG emission reduction versus 2016 is approximately 18% (from 1.5 million tons to 1.23 million tons).
2 An additional Scope 3 intensity reduction target of 28% by 2030 (versus 2016) has been agreed which, together with our Scope 1 + 2 target, meets the criteria for a Science-Based Target.
3 Our energy efficiency improvement was 5.1% over the past strategic period.
4 Excluding temporary vitamin effect.
5 KPI will be updated as part of the Responsible Care Plan update in 2020.

The Executive Committee (from left to right): Rob van Leen (R&D and Innovation), Dimitri de Vreeze (Materials), Geraldine Matchett (CFO), Chris Goppelsroeder (Nutritional Products), Feike Sijbesma (CEO/Chairman), Judith Wiese (People & Organization) and Philip Eykerman (Food Specialties and Strategy and M&A)

# 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), with a particular focus on developing innovative solutions addressing Nutrition & Health, Climate & Energy and Resources & Circularity.

## Nutrition & Health

The link between nutrition and health has never been clearer. For the first time in human history, diet-related non-communicable diseases have overtaken communicable diseases as the primary cause of deaths worldwide. Malnutrition in its various forms affects more than 30% of the world's population: more than 2.3 billion[1] adults and children are obese or overweight, more than 800 million[2] people go to bed hungry, and approximately two billion[3] suffer from hidden hunger. Our work in Nutrition & Health supports healthy living and nutritious diets for all. We work tirelessly to provide micronutrients as well as to enable the production of sustainably sourced protein in all its forms. We provide solutions for early life nutrition, food fortification, dietary supplementation and easy-to-use personalized nutrition.

We are developing innovative new solutions that help to reduce sugar, salt and saturated fat in processed foods and beverages, such as fermentation-based sweeteners. Meanwhile, our work in sustained-release drug delivery for eye treatment helps people to live healthier lives, our expertise in UV filters helps people to stay safe with sun protection, and our Dyneema® materials help protect against cut, stab and ballistic threats. We have also enabled China's container industry to make the transition away from VOC-containing solvents, which were significantly contributing to the country's air pollution problem.

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

[1] Source: WHO
[2] Source: FAO
[3] Source: IFPRI

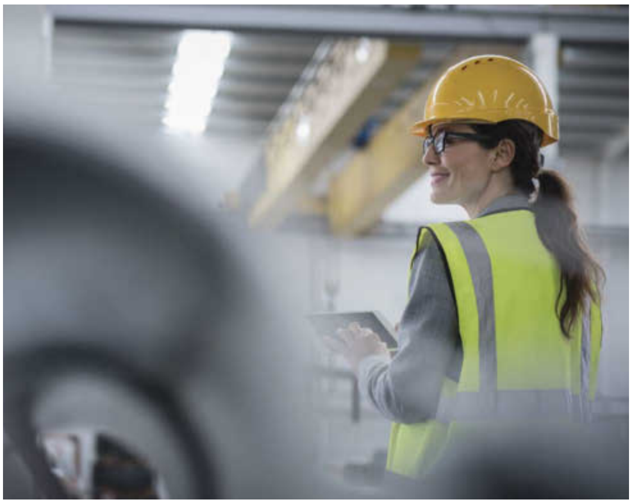
## Climate & Energy

The stability of the world's climate is under threat. If the potentially devastating effects of irreversible climate change are to be avoided, we must dramatically limit greenhouse gas emissions by transitioning to renewable energy and by adopting low-emission solutions and processes. We are enabling the low-carbon economy not just by reducing our own emissions but also by developing solutions to help customers and consumers to cut theirs. In the field of advanced solar, our recyclable backsheet and innovative coating technologies increase output from solar panels.

Together with our partner POET, we are pioneering biofuels using corn crop residue – a renewable alternative to fossil fuels. In animal nutrition, our innovative Project Clean Cow will help to cut emissions of the greenhouse gas methane from cattle. In transportation, our advanced materials help to reduce the weight of cars and thus drive down fuel consumption.

7 AFFORDABLE AND CLEAN ENERGY

13 CLIMATE ACTION

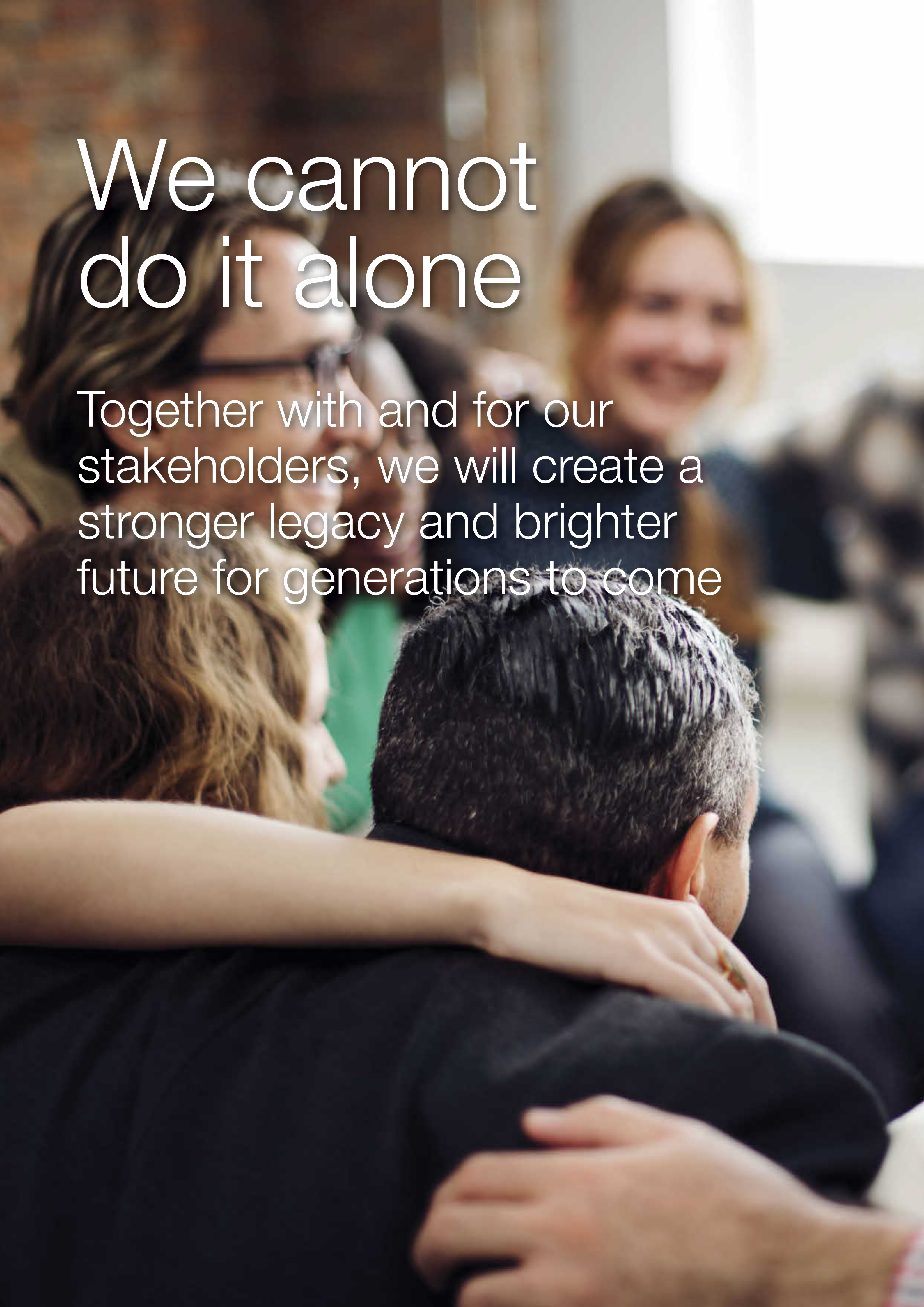


## Resources & Circularity

The world's resources are finite, and with a population projected to grow to 9.8 billion people by 2050, some estimates suggest we will need four planet Earths by then to sustain them. 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 an effective circular and bio-based economy founded on closed-loop solutions.

An excellent example of this is our Niaga® technology, which allows carpets, mattresses and furnishing products to be fully recycled while reducing energy use by approximately 90% and eliminating the need for water. We use discarded fishing nets collected along the coastlines of India as the raw material to produce our recycled polyamide Akulon® RePurposed. Our Veramaris® joint venture is producing an algae-based omega-3 fatty acid solution that replaces the need to use caught fish as the basis for fish feed, preserving wild fish stocks and making aquaculture truly sustainable.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



# We cannot do it alone

Together with and for our stakeholders, we will create a stronger legacy and brighter future for generations to come

# How we create value for our stakeholders

## Capital inputs

### People

- Employees
- Training & development
- Stakeholder engagement & Public Private Partnerships
- Philanthropy & sponsoring

### Planet

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

### Profit

- Shareholder equity
- Borrowings
- Partnerships & open innovation
- Purchased goods & services
- Manufacturing asset base

## DSM's business


## Value outcomes

### People

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

### Planet

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

### Profit

- Financial performance (Adjusted EBITDA & ROCE growth)
- Dividend
- Contribution to business success for customers & suppliers
- Contribution to civil society via tax
- Patents & royalties

### Human capital

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.

### Societal & relationship capital

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

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

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.

## Impact

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

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

- *Driving Profitable Growth* through science-based sustainable solutions
- Sustainable returns to investors
- Positive contribution to economic growth in the countries & markets in which we operate

## SDGs


### Intellectual capital

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

We have unique competences in life sciences and materials sciences and connect these to deliver innovative solutions that nourish, protect and improve performance.

This 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
- Societal & relationship capital
- Natural capital
- Financial capital
- Intellectual capital
- Manufactured capital

Since 2002, we have reported on our performance in terms of People, Planet and Profit, and so the six capitals shown here continue to be clustered accordingly.

Our organizational and operating model is made up of market-facing business groups focused on the primary business functions (Innovation and R&D, Direct Sourcing, Manufacturing & Operations, and Marketing & Sales), global support and functional excellence departments, and regional organizations.

We seek to minimize risk and take advantage of the opportunities around megatrends, thereby transforming the capital inputs into value and positive impact. A key part of our strategy, aside from our financial targets, is to continue to strengthen our commitment to sustainability. We especially try to have a positive impact through our engagement related to the Sustainable Development Goals (SDGs). We engage with all 17 SDGs, especially on the five shown in this figure. For more information, see 'DSM and the Sustainable Development Goals' on page 10 and throughout this Report.

## Stakeholders

Our purpose can only be realized together with our stakeholders. Through empowering our employees, engaging with our customers and suppliers, and with the support of our investors, we combine doing well financially with doing good for society. 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.

*Employees*

Our employees represent more than 110 nationalities, working at more than 210 sites and offices in 46 countries worldwide. We empower our employees to contribute to the success and growth of our company, and reward and celebrate their contributions. We aspire to provide an incident- and injury-free working environment for everyone, including our contractors.

For information on how we engage our employees, see 'People' on page 42.

*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 'Review of business' starting on page 66. For information on how we engage with our customers, see 'Customers' on page 145.

*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' on page 148 and elsewhere in this Report.

*Suppliers*

Our supply chain consists of more than 35,000 suppliers. Our suppliers are important partners for achieving our purpose, and we work closely with them through our Supplier Sustainability Program.

For more information on how we work with our suppliers, please see 'Suppliers' on page 146.

*Society*

We engage with society on many levels. In addition to the engagements we have with scientific research institutions, NGOs, local communities and governments, we also engage in philanthropic events and sponsorship activities.

We collaborate with renowned universities and science institutes. These engagements include financial support, the sharing of knowledge, research and facilities, and lectures.

Our work with NGOs and similar organizations contributes to solutions for the world's societal challenges and helps us to achieve our purpose.

Engaging with the communities in which we operate is important for raising awareness about what we are doing, and how our solutions address societal needs. We engage and inform our local stakeholders through open days, news bulletins, social media and other initiatives.

Achieving the SDGs can only be done with the active participation of and cooperation with governments. We engage with governments directly as well as through coalitions and trade associations. As stated in our Code of Business Conduct, we do not make political donations.

For more information on how we engage with these stakeholders, see 'Society' on page 148.

## Materiality

In order to assess material topics that are both of interest to society and have impact on our businesses, we annually refresh our materiality analysis. In 2018, we performed a light update of our materiality matrix to reflect any changes in the relative position of various topics. A more extensive analysis will be performed in 2019 as part of our new Strategy 2021: *Growth & Value - Purpose led, Performance driven.*

Our refresh in 2018 consisted of a survey conducted among business and functional leaders to capture shifts in societal interest and business impact. The results were presented and discussed with the Sustainability Leadership Team. This was later fine-tuned through interviews with the Executive Committee. The matrix was compared with the Corporate Risk Assessment to make sure all relevant topics had been captured from a materiality and/or risk perspective. Finally, it was approved by the Managing Board.

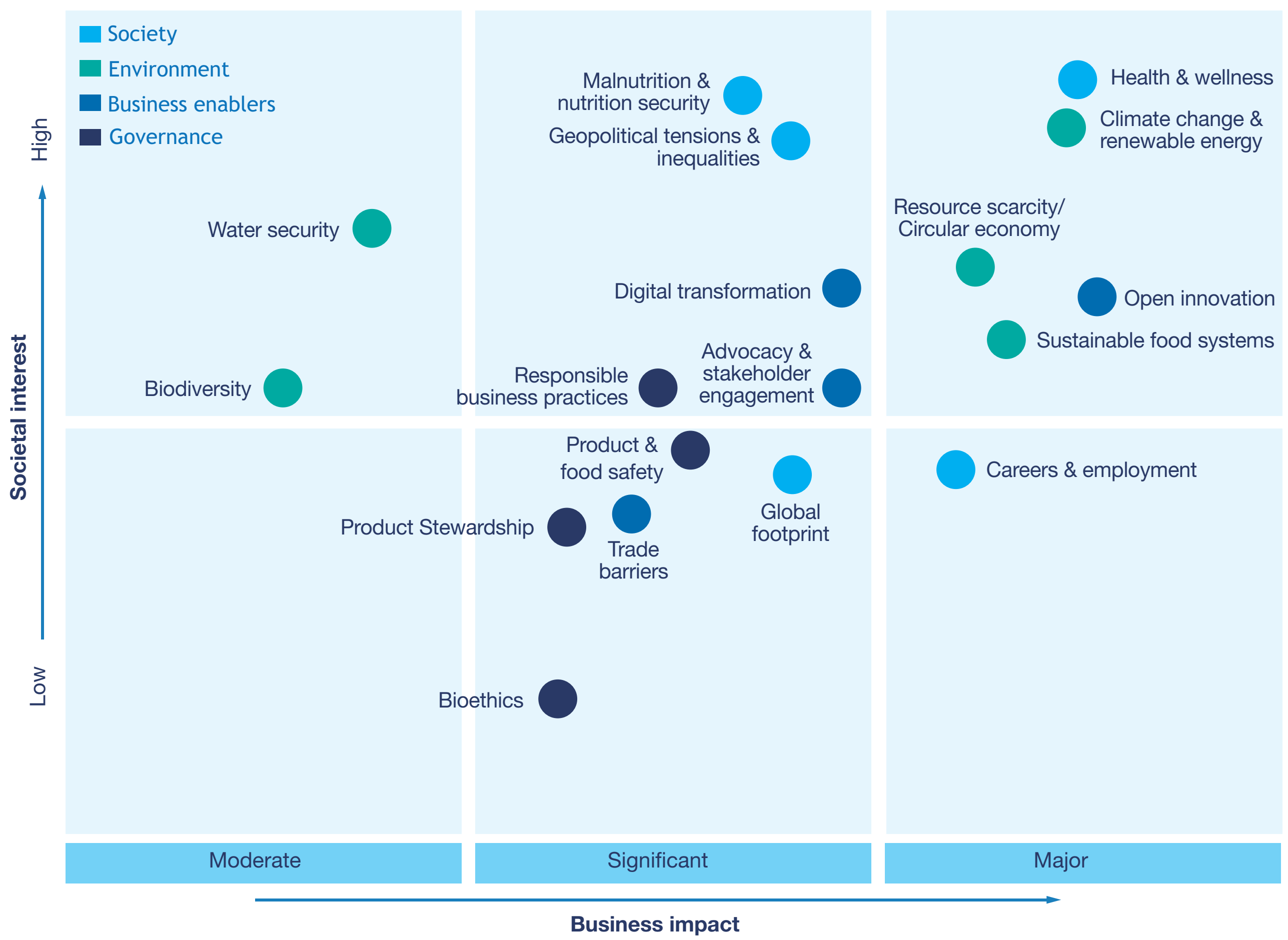
*Changes in 2018*

A light refresh was performed in 2018. No new topics were added to the matrix, and no topics were deleted. The topic 'Emerging economies' has been renamed 'Global footprint' and 'Resource scarcity / Circular & bio-based economy' has been renamed 'Resource scarcity / Circular economy'. The relationship between 'Geopolitical tensions & inequalities' and 'Trade barriers' has been further clarified, with the former capturing the indirect impact of the latter.

For more information on Materiality, 'Management approach for material topics' on page 150.

For more information on our position on relevant societal issues, see the company website.

Materiality matrix 2018



## Collaborative platforms and networks

We collaborate with like-minded peers 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 for a transition to more sustainable economic models on material topics that align to our focus areas of Nutrition & Health, Climate & Energy and Resources & Circularity. Collaborative platforms and networks such as these can result in progressive new measurement and performance methods, as well as roadmaps for business contributions toward the Sustainable Development Goals (SDGs). In this section, we describe some of the most significant initiatives.

*World Economic Forum (WEF)*
We are a strategic partner of WEF and we actively participated in their meetings throughout 2018, including the annual meeting in Davos. We continued to strengthen our presence at regional events, including in Africa, Latin America and Asia, to highlight key partnerships and initiatives concerning nutrition, circularity and climate change. We engaged in many projects and initiatives of WEF, including the Partnership to Accelerate the Circular Economy (PACE), Future of Proteins and Bio-Innovation.

In 2018, we joined the Global Future Council on the New Social Contract as part of our involvement in the Future of Education, Gender and Work, and our CEO Feike Sijbesma co-chaired the Consumer Governors and chaired the Alliance of CEO Climate Leaders. The Alliance published an open letter ahead of COP24 urging governments to be more ambitious in addressing climate change.

*World Business Council for Sustainable Development (WBCSD)*
We are a member of WBCSD and participate in different working groups and coalitions. We are part of the Climate Policy Working Group and our VP Sustainability sits on the WBCSD Climate & Energy Program Board. We also joined the Taskforce for Climate-related Financial Disclosures (TCFD) Preparer Forum for the chemical sector, which kicked off late in the year.

We are a founding member of Food Reform for Sustainability and Health (FReSH), a coalition between WBCSD and EAT, a foundation focused on food systems that aims to transform global food systems. We are a member of the Program Board and we co-lead a number of workstreams. In 2018, two 'Science to Solutions' events were organized between top scientists, civil society and business delegates to discuss complex scientific challenges related to the food system. A new study, 'Sustainable and Healthy Diets' on sustainable and healthy dietary guidelines and food intake in 12 countries, and the report 'Consumption Behavior and Trends' were completed and published.

We are part of the Leadership Group of the global campaign 'below50' from the Low Carbon Technology Partnerships initiative (LCTPi), a multi-stakeholder platform led by the WBCSD that presents the opportunities for large-scale development and deployment of low-carbon technologies. In 2018, the below50 policy webtool was released, a tool offering insights into local policies that increase the use of low-carbon fuels and drive greater climate ambition.

Together with over 30 leading companies across 16 sectors, we joined in a new circular economy initiative, Factor10, in 2018. Factor10 aims to reinvent the way that businesses produce, use, and dispose of the materials that make up global trade by moving away from the traditional 'take-make-dispose' economic model to one that is regenerative by design. As Co-Chair of the program, we will focus on circular metrics, as well as on developing circular blueprints for the built environment, automotive and bio-economy sectors.

We collaborated with eight other companies, the American Chemistry Council, CEFIC and WBCSD on the Chemical Sector SDG Roadmap in 2018. The roadmap, published in July, details the impact categories and action points where the chemical sector has the highest potential to make an impact on the SDGs.

*Accounting for Sustainability (A4S)*
Our CFO Geraldine Matchett continued her active role as Co-Chair of the A4S CFO Leadership Network. This network brings together leading CFOs to help embed the management of environmental and social 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 Taskforce for Climate-related Financial Disclosures recommendations.

In 2018, we contributed in particular to the A4S Culture project, which aims to create a shift in the culture of the finance profession in organizations that already have a strong focus on sustainability. This includes showing finance professionals why and how they can play a part in delivering sustainability initiatives by motivating, empowering and inspiring them to make the required changes. In November, the Culture project delivered the A4S Essential Guide to Finance Culture, a guide on how to integrate sustainability into the finance and decision-making process.

*Carbon Pricing Leadership Coalition (CPLC) convened by the World Bank*
In April, our CEO Feike Sijbesma co-chaired the High-Level Assembly of the CPLC for the third and final year. 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 $CO_2$eq when reviewing large investments. Mr. Sijbesma, who serves the World Bank Group as a Climate Leader since 2017, also assumed the role of co-chair of the High-Level Leadership Forum on Carbon Pricing and Competitiveness.

At various high-level events throughout the year, such as the Annual Meeting of the World Economic Forum in Davos, and New York Climate Week, Mr. Sijbesma shared our experience with carbon pricing. He called on other businesses to implement an internal carbon price and advocated for embedding a price on carbon in global financial systems.

*Ellen MacArthur Foundation*
CE100 is the Foundation's global platform that brings together companies, emerging innovators, universities and cities to accelerate the transition toward a circular economy. In 2018, together with Essity, IKEA and Tetra Pak we published a report on renewable materials for a low-carbon and circular future. This report was presented to the European Parliament at the end of the year. The report shares the authors' vision for a low-carbon and circular future, which aims to serve as input for the mandates of the upcoming European Parliament and Commission.

*Circle Economy*
In 2018, we continued our membership of Circle Economy, a Dutch social enterprise that emphasizes practical and scalable solutions in the transition toward a circular economy. We joined their Circle Textiles Programme (with DSM Dyneema) and their Circle Built Environment Programme (with DSM Advanced Solar). We started a trial with Circle Assessment, a digital tool that enables organizations to accelerate the practical implementation of the circular economy. Workshops and lunch sessions were organized at DSM in collaboration with Circle Economy to increase employee awareness and knowledge about the topic.

*RE100*
Our engagement with RE100, the world's leading campaign to scale corporate sourcing of renewable power, continued throughout 2018. We participated in the learning opportunities, conferences and advocacy opportunities offered to us in the EU, US and China. As part of our RE100 commitment, we shared our insights through webinars, presentations and other engagements including our journey with fellow RE100 members AkzoNobel, Google and Philips to jointly source power from wind energy projects in the Netherlands. For more information on renewable energy, please see 'Planet' on page 52.

*We Mean Business*
We Mean Business activates hundreds of companies and investors to commit to low-carbon initiatives. Our VP Sustainability sits on the Business Advisory Board. In 2018, we continued to work together on the Carbon Pricing Corridors project led by CDP, CPLC and We Mean Business. This project aims to enable large market players to define the carbon prices needed for industry to meet the Paris Agreement. We also worked on a number of advocacy and communications activities around 'below50' and renewable energy.

*Dutch Sustainable Growth Coalition (DSGC)*
The DSGC is a CEO-led coalition of eight Dutch multinational corporations which aim 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 2018, the Coalition assessed new fields for collaboration such as clean shipping and the circular economy. Moreover, they engaged with future leaders by hosting a community dinner at the 2018 One Young World Summit.

*Catalyst*
Catalyst is a non-profit organization that promotes inclusive workplaces for women. We are a Global Supporter of Catalyst. Our CEO Feike Sijbesma continued his role on the Board of Directors and our CFO Geraldine Matchett her role on the European Advisory Board. We are also represented on the Catalyst Japan Advisory Board.

Our CTO shared with the Catalyst global community his experiences on women in the scientific workplace, with his daughter sharing her perspective on young women in science. At the Catalyst Award dinner in New York City (New York, USA), our colleagues shared their views and personal stories on what it means to be a working woman in DSM with Mr. Sijbesma and the President of DSM North America.

*One Young World (OYW)*
The One Young World Summit gathers 1,800 young leaders from around the world, empowering them to make lasting connections to create positive change for sustainable development. In 2018, our CEO Feike Sijbesma joined the first OYW Global Advisory Board, which aims to support and champion the growing community, and gave a keynote address. We were one of the largest business partners for the 2018 Summit in The Hague (Netherlands), sending 43 young talents representing all businesses and regions, and sponsoring five young leaders and social entrepreneurs from Africa who are working on the topic of malnutrition via our DSM Brighter Living Scholarship. On their return, our delegates will act as intrapreneurs to engage fellow colleagues on purpose-led projects.

*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 through product innovations

such as fortified rice and a product aimed at people living with HIV/AIDS. Together, we make a difference to millions of people. The DSM-WFP partnership was extended for a further three years in 2018. The next phase of the partnership will put even greater emphasis on raising awareness for improved nutrition while continuing to develop new scientific and technical solutions — one of which is a major project to continue developing fortified rice, a crucial staple food in the developing world.

In 2017, WFP reached 39.4 million beneficiaries with food that had been improved by the DSM-WFP partnership. Additionally, we collaborate on training and development initiatives and on employee fundraising campaigns.

*UNICEF*

The DSM-UNICEF partnership has been in place since 2013. The partnership with UNICEF and *Sight and Life* continued through the year, supporting the Government of Nigeria in realizing its vision of scaling up the micronutrient powder (MNP) program nationally, reaching people suffering from malnutrition. In Nigeria, the partnership will build national capacity to scale up the program and will advocate for domestic resources to scale and sustain the interventions. Together, we aim to directly impact the lives of one million children in Nigeria, by providing access to MNP.

In 2018, the partnership with UNICEF and *Sight and Life* was extended through to 2021 and India was added as a focus country. The partners will support the UNICEF India nutrition program by seeking to engage private-sector stakeholders as part of the government of India's Social Movement on Nutrition program, from 2019 onwards. The cooperation in India will focus on raising awareness to mobilize the private sector around nutrition literacy.

*World Vision International*

Our partnership with World Vision and *Sight and Life*, titled 'Joining forces for last mile nutrition' aims to impact the well-being of people at risk of micronutrient deficiencies and influence key stakeholders. We leverage our scientific excellence, technical expertise and extensive customer base to facilitate the development and supply of innovative nutrition, formulation and fortification.

In Rwanda, the partners worked on a pilot for a more efficient supply chain for local maize production, working with farmers and other stakeholders on improving the raw material quality and access in Rwanda for Africa Improved Foods. The results of the first pilot were positive, and the next phase will focus on scale-up.

Together we initiated project EGGciting, focusing on eggs as an important nutrition source. The project will kick off in 2019, and will increase the availability, accessibility, and consumption of eggs at the household level in Sulawesi by addressing bottlenecks in the supply chain and driving demand on the consumer side to improve nutrition. Furthermore, a social business distribution model is being scoped, to further help reach this goal.

*Partners in Food Solutions*

Partners in Food Solutions, an independent non-profit organization, 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, Hersey, Bühler and Ardent Mills, with promising entrepreneurs and other influencers in the food ecosystem. The six corporate partners have empowered hundreds of entrepreneurs to work toward a stronger, more resilient food value chain across the African continent.

DSM has an active network of almost 50 employees using their technical, business and communications skills to work directly with small and growing food processors. Our employee volunteers are proud to engage in positive and meaningful assignments to strengthen food security and foster economic development in Africa.

*Scaling Up Nutrition*

The SUN Business Network (SBN) — co-hosted by the Global Alliance for Improved Nutrition and the UN World Food Programme — is the private-sector branch of the Scaling Up Nutrition (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 located in 18 countries and includes more than 400 companies, mostly SMEs. Our CEO Feike Sijbesma is a member of the Lead Group of the SUN Movement and Co-Chair of the Advisory Group of the Network. Our VP of Nutrition in Emerging Markets and Public Private Partnerships is on the Operations Committee of the SBN.

Via the network, as well as the WFP partnership, we supported a number of SBN projects in Zambia, Zimbabwe and Malawi. Together with the SBN global team, we initiated and organized the first ever Nutrition Africa Investor Forum (NAIF), reframing the dialogue around nutrition and raising its profile as an impact investment opportunity. As an SBN global member, we are supporting 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 its members. We advocate for business to take a leading role on these important issues.

*Africa Improved Foods*

Africa Improved Foods (AIF) is a joint venture between the Government of Rwanda and a consortium of Royal DSM, the

Dutch development bank (FMO), the DFID Impact Acceleration Facility managed by CDC Group plc and the International Finance Corporation (IFC), the private sector arm of the World Bank Group. AIF sources local soy and maize from over 24,000 farmers across Rwanda to locally produce nutritious fortified food products that meet the nutritional needs of vulnerable population groups such as pregnant and breast-feeding mothers, older infants, and young children. The Kigali factory also supports over 300 skilled workers with well-paid industrial jobs, providing employees with schooling and income.

In 2018, AIF celebrated its first anniversary. The facility has an annual capacity of 45,000 metric tons, which allows it to feed over two million people per year on a consistent basis, making it one of the largest food manufacturers in East Africa. AIF was recognized for its contribution to economic growth and sustainable development, winning awards such as the Rwanda Development Board's Exporter of the Year 2018 and Swiss Green Economy Symposium's UN Sustainable Development Goals Award 2018. A recent impact study conducted by the University of Chicago (Illinois, US) for IFC, concluded that the net incremental value added of AIF to the Rwandan economy between 2016-2031 amounts to USD 758 million. It is further estimated that AIF will contribute USD 85 million to Rwanda's foreign exchange position and add USD 142 million worth of value to East Africa through regional purchases over the same period.

*MANDI*

DSM has been further expanding MANDI (Making A Nutrition Difference to India), a socio-commercial business delivering local nutritious products that are affordable and aspirational, including fortified food and staple products, such as rice and lentils, as well as vitamin and mineral supplements. India is home to over 500 million inhabitants that are malnourished, distributed across all social-economic classes. In 2018, MANDI's strategy was reviewed. MANDI works with various partners. In 2018, a successful distribution partnership was set up with the Dharma Life Foundation.

For information about other nutrition initiatives and partnerships, such as Nutrition Improvement and *Sight and Life*, see 'Nutrition' on page 66 and 'Philanthropy and sponsorships' on page 157.


DSM's delegation at the One Young World Summit in The Hague (Netherlands)

## External recognitions

We are proud when our efforts are recognized by others. Below is a selection of some awards and recognitions that DSM received from NGOs and trade organizations, customers, suppliers and academia in 2018. A full list of our recognitions can be found on the company website.

In June, DSM was awarded the 2018 *Best Female Leadership Companies* by the Shanghai Daily in China together with other global industry leaders. Our corporate culture stood out among the contestants.

In July, DSM received the *Best Stakeholder Engagement and Materiality Award at the Sustainable Business Awards 2018* ceremony in Singapore organized by Global Initiatives.

In August, *Fortune Magazine* revealed that for the third consecutive year, DSM again made Fortune Magazine's *Change the World list*, an annual recognition of companies that have a positive social impact through their core business strategy. *Fortune Magazine* also named DSM's CEO Feike Sijbesma as one of the "*World's Greatest Leaders*" earlier in the year.

In August, our DSM China President, Dr. Jiang Weiming was selected in *Fast Company China's 100 Most Creative People in Business for 2018*. Fast Company recognized his innovative spirit and sharp business acumen.

In September, DSM was again among the leaders in the *Management Scope Corporate Impact Index*. DSM scored particularly high on sustainability, and also achieved a high score on relationship with the outside world.

In October, DSM was awarded a position on *Forbes' The World's Best Employers 2018 list*. Earlier in the year, we were also awarded a position on their *America's Best Midsize Employers 2018 list*.

In October, DSM received the *Responsible Business of the Year Award from Ethical Corporation* who highlighted the position of sustainability at the heart of our strategy.

In October, DSM was awarded the *Henri Sijthoff prize from 'Het Financieele Dagblad'* (Dutch financial newspaper) for the best annual report by a company listed on the AEX stock exchange in the Netherlands.

In December, DSM was named in the '2017–2018 *Most Respected Companies in China' list by The Economic Observer*. The award recognizes companies that have demonstrated excellence in areas including financial performance, operations and management, innovation and corporate social responsibility. DSM was nominated for the second year in a row.


DSM at the award ceremony for the '2017–2018 Most Respected Companies in China' list by The Economic Observer, held at Tsinghua University

## ESG Ratings and Benchmarks

At DSM, sustainability is at the heart of our business. Sustainability is our core value; we see it as a key responsibility and an important business driver. Our efforts and performance are recognized externally (see, 'External recognitions'). We are also included in several Environmental, Social, Governance (ESG) Benchmarks and Ratings (see table below), of which in most we score as (sector) leader.

The ESG benchmark sector is experiencing rapid growth. In contrast to the financial world, where IFRS, for example, has defined a global financial reporting standard, there is no global standard for value creation and the ESG dimensions, yet. We recognize that it is impossible for companies to participate in every ESG benchmark.

We are currently prioritizing our active participation in these, and high on our list are benchmarks that are recognized, valued and used by our stakeholders, including our investors, that are transparent in their methodology, rely primarily on publicly accessible information, will not create additional administrative work, and provide participating companies with sufficient feedback to enable them to make meaningful year-on-year improvements. In that context DSM will also review its continued active participation in some indices.

In 2018 we also renewed key sustainability and environmental targets, such as greenhouse gas emissions, energy efficiency and renewable energy. These are described in detail elsewhere in this report and reported transparently also based on the Global Reporting Initiative (GRI) standards.

In May, DSM was assessed as an ESG (Environmental, Social, Governance) leader within the chemicals industry by Sustainalytics, ranking number 1 out of 135 companies.

In April, DSM maintained an AA rating from MSCI. MSCI highlighted DSM's Corporate Governance as a strength in the company's performance.

In September, DSM was once again named the leader in its industry group in the Dow Jones Sustainability World Index. The company has been recognized among the DJSI leaders for 15 years running and held the number one position in the sector eight times.

In September, DSM was again confirmed as a constituent of the FTSE4Good Index. We have held a position on this list since 2004.

In November, DSM was again awarded a Gold CSR Rating by EcoVadis. Our score of 75 points, up 6 points versus 2017, puts us in the top 1% of companies assessed on the platform in our industry.

For our climate strategy, and water governance and strategy in 2018, DSM was assessed as $A^-$ for Climate and $B^-$ for Water by CDP.

# People

**76%**

Employee Engagement Index versus 75% in 2017

**28/72**[1]

Female/male ratio versus 27/73 in 2017

**19%**[2]

Female executives versus 17% in 2017

**72%**

Inclusion Index versus 71% in 2017

**0.33**

Frequency Index of Recordable Injuries versus 0.36 in 2017 (per 100 DSM employees and contractors)

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

10 REDUCED INEQUALITIES

[1] The companies that are not integrated into the HR systems (approx. 2% of the total workforce) are not taken into account.

[2] Going into 2019, the percentage of women in our Executive Committee and Supervisory Board is 43%.

We aspire to a high-performance company and culture that aligns with our purpose. Our success is built on the engagement, commitment and capabilities of our people. To secure our ambitions for the future, we seek to attract and retain people with diverse backgrounds and talents who will turn our strategy into action, while developing themselves. Above all, we aspire to be an injury- and incident-free organization.

The key material topics for People are:

- Health & wellness (covered in Safety, health & wellness)
- Careers & employment
- Responsible business practices

For more information about our People performance, see 'Sustainability statements – People' on page 143. See also 'How we create value for our stakeholders' page on 32 and 'Stakeholders' page on 34.

## People and organization strategy

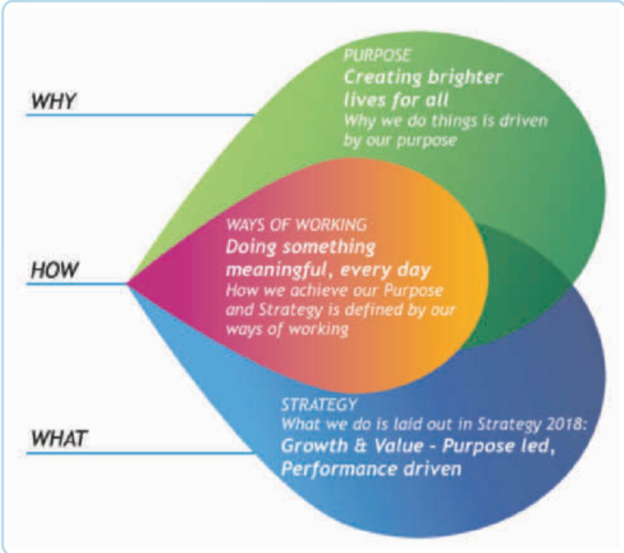
In line with the strategy update, we have developed a people and organization strategy for DSM for the coming years. We will focus on six strategic levers:

- **Operating model:** ensuring efficiency and growth through globally leveraged functions, shared services and value-chain-focused business groups, with the opportunity to integrate acquisitions when needed
- **Customer-centricity:** putting the customer first in how we focus, organize and build capabilities
- **Internationalization & diversity:** developing a talent base that is as global and diverse as the markets and customers we serve
- **Leadership & development:** developing people in line with our growth aspirations as a business, with people managers playing a vital role
- **Team by team:** engaging teams effectively to ensure high performance, collaboration and agility
- **Culture / The DSM Ways of Working:** Doing Something Meaningful, every day, that contributes to delivering our strategy

## Culture / The DSM Ways of Working

In line with the update of our strategy, we have also reviewed our One DSM Culture Agenda and developed it into a new culture agenda called 'The DSM Ways of Working'. We are a purpose-led, performance-driven company. How we deliver our purpose and strategy is supported by The DSM Ways of Working. Doing Something Meaningful, every day starts with us as individuals, by doing the right things in our daily jobs.

The DSM Ways of Working describe the mindset that enables everyone in DSM to make a difference, and drives accelerated business growth. The DSM Ways of Working build on three behaviors – Customer passion inspires innovation, Accountability and agility spark success, and Inclusiveness brightens our future.




### Customer passion inspires innovation

We always put our customers first. We know our customers and make their success our business.
We combine curiosity, technology, and outside-in thinking to bring their needs and our innovation together. By creating meaningful solutions, we deliver value for our customers, every day.

### Accountability and agility spark success

We deliver on our promises and respond to challenges quickly. Clear expectations, trust and freedom to act allow us to make responsible judgements and flourish, every day.
We live safety unconditionally — I care, we care, every day.

### Inclusiveness brightens our future

We value uniqueness and foster a sense of purpose and belonging. We embrace all aspects of diversity to enrich our thinking. Connectivity allows us to collaborate effectively without boundaries. We are stronger together, every day.

All our employees globally will be onboarded with The DSM Ways of Working. We started the process in June 2018 at leadership level and will continue to engage different DSM audiences in several phases. Throughout 2019 and 2020, The DSM Ways of Working will be embedded in our key people processes to ensure a consistent employee experience. Progress will be measured as of 2019.

## Safety, health & wellness

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| *Occupational safety* | | | |
| - Frequency Index REC | 0.25 in 2020 | 0.33 | 0.36 |
| - Frequency Index LWC | | 0.11 | 0.16 |
| *Process safety* | | | |
| - PSI Rate | 0.15 in 2020 | 0.22 | 0.19 |
| *Occupational health cases* | | 29 | 14 |

### *Occupational and process safety*

Employee health includes safety at work. We strive to be an incident- and injury-free company. At the end of the day, people should leave work exactly as they came, if not better. So it is with deep regret that we report a fatal accident that occurred at our DSM Nutritional Products (Tortuga) site in Pecém (Brazil).

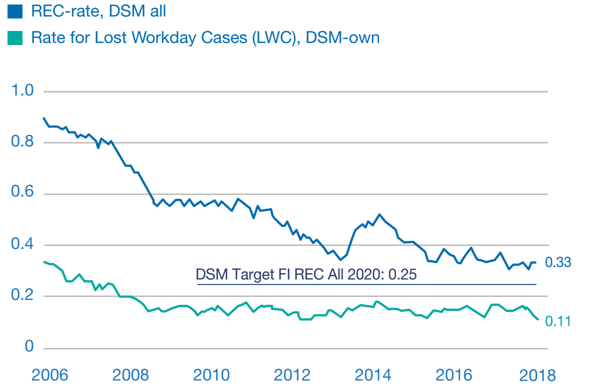
Both occupational and process safety are extremely important to us. Occupational safety is the safety of people (employees and contractors). Process safety is the safe operation of facilities. We set targets, define actions and monitor safety performance as described in the DSM Responsible Care Plan 2016–2020. We report our occupational and process safety performance with frequency indexes. For a full description of these indexes, see 'Explanation of some concepts and ratios' on page 242.

### *Occupational safety*

In 2018, the Frequency Index of all DSM Recordable Injuries improved from 0.36 to 0.33, with the majority of our sites injury-free. This demonstrates that zero incidents are achievable. Still, we must further intensify our efforts in the coming years to meet our ambitious target of 0.25 by 2020. Our focus will be on those sites where improvements are needed. The Frequency Index of Lost Workday Cases for DSM employees improved to 0.11 in 2018 versus 0.16 in 2017.

The Frequency Index of Recordable Injuries among contractors further deteriorated to 0.51 in 2018 versus 0.46 in 2017. A factor in this trend is the increase in contractors relative to DSM employees in plant maintenance and upgrade activities. To counter this trend, we will increase our focus on contractor supervision. However, we also see encouraging signs in contractor safety. The Blue Sky project at our Jiangshan production facility (Jiangsu Province, China) was completed in 2018: it reported only one health incident (heat stroke) and no safety incidents. The project required approximately 2.2 million contractor man-hours and 2,000 employees on site at peak times.

**Frequency Index of Recordable Injuries**
12-month moving average




In 2018, we focused on keeping safety awareness high through our Living Safety Campaign 'I Care, We Care'. This campaign offered global guidance through quarterly themes and locally relevant programs at site level. The initiatives to strengthen leadership and create capabilities that had begun in 2017 continued. A series of workshops and intensive training efforts increased awareness and focus on safety. During 2018, 1,066 leaders and managers completed intensive safety trainings, which is an increase of 84% versus 2017. Special attention was given to the safety onboarding of new executives.

A new set of global leading performance indicators was developed throughout the year. These enable us to more proactively tackle safety observations, preventing incidents from occurring. We expect to start reaping the benefits in 2019. These indicators are aligned with the key items that emerged from the safety-first workshops from the 'I Care, We Care' program.

Despite our efforts, a tragic accident took place in September 2018 at DSM's Tortuga site in Pecém (Brazil), where a contractor lost his life. This has shocked all of us at DSM and we are supporting the affected family through this difficult time. This stresses once again that Health & Safety must always remain our top priority: we must ensure that people come home safely and must continuously improve our safety performance every day. The root causes have been thoroughly investigated and the lessons learned are being implemented. We have included transport and warehouse safety in our revision of the DSM Life Saving Rules to improve standards of warehouse safety across the whole of our company. We are committed to the safety of all workers, including the safety of our contractors.

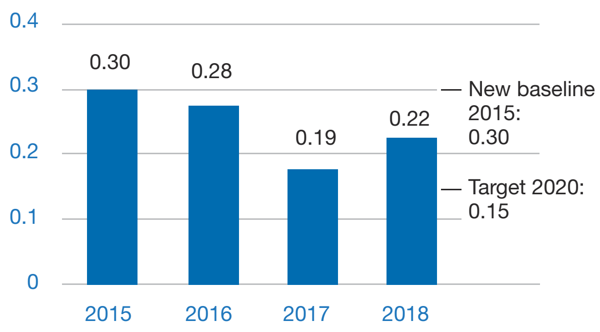
The incidents that still occur, along with the severity of their consequences, signal the challenge to ensure that everyone, all of the time, uses safe working practices that prevent accidents. Efforts in further building risk recognition capabilities and competences, as well as standardization of high-risk working activities, will continue in 2019.

*Process safety*

Process safety incidents are rare but can have a major impact on people and the environment. Process safety is measured via the Frequency Index of Process Safety Incidents (PSI), and we have a target for 2020 of 0.15.

**Frequency Index of Process Safety Incidents**

12-month moving average




The Process Safety Incident rate deteriorated from 0.19 in 2017 to 0.22 in 2018. Most incidents were related to the unintentional release of substances from plants or storage facilities and were remediated without further consequence. The increase in the PSI rate is due to a better understanding of managing and reporting PSIs in one of our businesses. We are focusing our efforts on the incidents highlighted by this process in order to reverse the trend. There was a small number of other incidents, which are described in the chapter 'What still went wrong in 2018' on page 138.

Additional training efforts, in combination with applying more strict qualification criteria, are being rolled out to increase the competences of people executing key roles in process safety management. We will convert existing good practices (guidance notes) into mandatory standards to improve standardization and bring focus to effective implementation.

*Employee health*

At DSM, we believe in a positive culture of health at work. This increases the intrinsic motivation of employees to make healthy, sustainable lifestyle choices. Our health management system is based on prevention, primary care and promotion.

DSM has an extensive industrial hygiene program which also addresses physical hazards and exposure to hazardous substances. Through the design of our processes and products, as well as providing proper protective equipment, we aim to prevent occupational illness. Primary care is provided by site-based medical professionals and also includes emergency preparedness and first aid. Promotion of good health is continuously addressed through a wide range of health promotion activities and is reflected in our Safety, Health and Environment policies.

An example of both health promotion and health prevention within our company is our Vitality@DSM program. Vitality@DSM is a voluntary program that helps employees track and assess their physical, social and mental well-being. We had approximately 1,000 participants in 2018. 68% of the participants reported low lifestyle-related risks, 32% of the participants reported moderate to high risks. Participants received customized advice to help improve their overall well-being, support early intervention before disease and maintain employability. According to the group report, due to interventions and changes of lifestyle made by the target group we save approximately 1% per year from reduced productivity loss.

In 2018, we continued to promote the Global Corporate Challenge, a team-based approach to stimulate increased physical activities, improved nutrition, sleep and psychological well-being of our employees. Although the number of participants declined compared to 2017, 83% of the participants in 2018 achieved the recommended daily levels for physical effort of 10,000 steps per day (up from 77% in 2017). Due to these efforts, 68% of the participants reported that they experienced reduced stress levels at home or at work and 51% of the participants reported an increase in productivity or concentration.

Local wellness initiatives are actively encouraged. For example, in the Netherlands we are making all our premises smoke-free, we offer healthy choices in the company restaurants and we focus on prevention of work stress.

*Occupational health cases*

Despite our efforts in the area of occupational health, the number of reported health cases increased from 14 in 2017 to 29 in 2018. We reported in 2017 that several employees at our Jiangshan site (Jiangsu Province, China) indicated they were suffering from hearing loss. These cases have been thoroughly investigated and 15 cases of hearing loss have been included in the overall figure. The remaining cases were mainly related to ergonomics at the workplace as well as skin irritation (two cases) during lab work.

Privacy concerns or cultural factors may influence employees' willingness to report and discuss personal health issues, so some occupational health cases may go unreported. We continue to raise awareness about stress and other occupational health risks and to encourage transparency.

## Careers & employment

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| Employee Engagement | 75% by 2020 | 76% | 75% |
| *Inclusion & Diversity* | | | |
| - Female executives | 25% by 2020 | 19% | 17% |
| - Under-represented nationalities | 60% by 2020 | 60% | 56% |
| - Inclusion Index | | 72% | 71% |
| *Learning and Development* | | | |
| - Training hours per employee[1] | | 6 | n.a. |

[1] 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 is no relevant figure available for 2017.

*Workforce engagement*
Having an engaged workforce is essential for our success, now and in the future. The DSM Employee Engagement Survey, run annually since 2007, helps us understand how our employees feel at work and where we need to improve. Our goal is to ensure that people are proud to work at DSM and have the opportunity to contribute and excel at what they do. The Engagement Index measures four attributes: commitment, pride, advocacy and satisfaction. In 2017, we switched to a shorter version of the survey that still collects essential information about safety, engagement, inclusion and other key themes.

The 2018 survey was sent to all employees and was available in 21 languages. The 2018 response rate of 87% (up five percentage points) was the highest we have recorded since we started measuring employee engagement. The Engagement Index was 76% (up one percentage point) in 2018, a new record for us.

At global DSM level, we saw an improvement of at least one percentage point on 19 out of the 22 questions. There was a notable increase in the area of career opportunities, a topic that was defined as a focus area from the 2017 survey. We have recorded a three percentage point increase on the question “I am satisfied with career opportunities at DSM”. We also saw an increase in perceived opportunities for learning and development (up two percentage points) and regular development conversations (up one percentage point). We believe that there is still further room for improvement on these three topics, so they will remain a focus area for the coming year.

> “ At DSM, we believe that everybody's contribution counts in creating a thriving business and, at the same time, brighter lives for all. We all take great pride in Doing Something Meaningful, every day. ”
>
> **Judith Wiese, DSM Executive Committee**

*Inclusion & diversity*
Our inclusion & diversity activities focus on two main topics:

- Increasing representation of women and under-represented nationalities at executive level and throughout our management pipeline to fuel innovation and growth in every country where we operate
- Creating an inclusive work environment in which each employee can contribute

By 2020, we aim for 25% of our executives to be female and for at least 60% of our executives to come from under-represented nationalities. We achieved an improvement in both areas in 2018 thanks to continued focus and commitment on the part of all businesses and functions. The percentage of female executives in 2018 reached 19% (2017: 17%), while the number of under-represented nationalities at executive level increased to 60% (2017: 56%), achieving our 2020 aim of 60% ahead of schedule.

The targets to increase the diversity of our talent pipeline below executive level also focus both on gender and nationality mix. Both measures saw a positive trend across all our businesses and functions in 2018, with female representation increasing by three percentage points and under-represented nationalities increasing by two percentage points.

In line with Dutch legislation, the diversity policy for the Executive Committee, Managing Board and Supervisory Board aims for at least 30% male and at least 30% female members. In addition, it aims for no more than 50% of the Executive Committee and Supervisory Board to be drawn from one nationality. For more detail, see 'Corporate governance' on page 108.

With the appointment of Patricia Malarkey as Chief Innovation Officer, our Executive Committee's gender diversity percentage will be 43%, while the number of nationalities has been further diversified. In 2018, the gender diversity percentage was 29%, with a maximum of 43% drawn from one nationality, in line with our target of not having more than 50% drawn from one nationality. Our Managing Board, consisting of one female and two male members, is fully aligned with the figure of 30% prescribed by Dutch legislation in terms of gender balance. Our Supervisory Board is also well balanced, in terms of both gender and nationalities, and is in line with Dutch legislation in this regard. More than one third (43%) of its members are women. Furthermore, in the Supervisory Board of DSM Nederland B.V., a subsidiary of Royal DSM, one of the three members is female (33%).

In 2018, DSM addressed unconscious bias in our Women Inspired Network activities. Unconscious bias refers to the unconscious assumptions and attitudes we all have that influence our behavior. This focus supports our employees to understand how we can become more aware of our behavior. On International Women's Day, we held a global DSM campaign titled 'Women in Science and Technology – Unconscious Bias' to highlight the role of women in science, technology, engineering and mathematics, and promote the work we do to improve inclusion in the company. The November 2018 People Manager campaign helped people managers to understand what they can do to combat unconscious bias. More than 20 female and male employees participated in the Women's International Networking Conference in Rome (Italy).

In addition, a workshop was designed to address inclusion and diversity, with a specific focus on unconscious bias. The workshop's objective is to create more inclusive teams by improving awareness about the importance of inclusion and diversity and to define actions on how to overcome unconscious bias. The first workshops were delivered in 2018, with the full roll-out planned for 2019.

Our inclusion efforts, monitored via the Employee Engagement Survey's Inclusion Index, increased from 71% in 2017 to 72% in 2018. Employees have shared they feel more comfortable sharing their ideas (up one percentage point) and they are more involved in decisions that affect their work (up two percentage points). We are proud of this increase and will continue to focus our efforts in creating an even more inclusive work environment in DSM.

Going forward, we will also continue to address the geographical distribution of executives and other key functions, keeping a keen eye on nationality balance. From 2019, we will focus on improving the representation of non-Europeans in the executive group to further reflect our global footprint. As the long-term target for nationality mix has already been reached, we will redefine our goals for nationality balance as of 2019.

### *Leadership and development at DSM*

### Developing our talent

At DSM, we believe that learning and development fuels the growth of our employees and leaders. Creating the conditions in which our people can learn and develop faster will enable us to grow. In 2018, we continued to increase our emphasis on learning through the 70:20:10 principle: 70% learning through experience (such as guided on-the-job assignments), 20% learning through others (such as peer-group learning and mentoring), and 10% learning through formal sources (such as classroom training and digital learning). By this approach, we are creating a culture of continuous learning in which people learn from experience, feedback, reflection, experiments, and mistakes, and not just from training courses.

We work in close cooperation with leading international business schools and global learning content providers — such as Duke Corporate Education, IMD, Ashridge Executive Education, Vlerick Business School, and CrossKnowledge — to design and deliver high-quality learning activities for our employees around the world. The European Foundation for Management Development (EFMD) awarded us the EFMD Excellence in Practice Gold Medal 2018 for Professional Development in recognition of our partnership with Vlerick Business School on our learning journeys to drive Marketing & Sales Excellence.

The learning platforms that are available to all our employees feature easily accessible online learning catalogs, learning resources and courses that are available via smartphone apps, and online tooling to identify and select on-the-job experiences. The new global learning management system introduced in 2017 began to replace local legacy systems across the globe during 2018, with finalization planned for 2019.

### Learning and development through experiences with Experience Maps and X-Time

In 2018, we introduced the concept of 'Experience Maps', to facilitate learning through (on-the-job) experience. The Experience Map describes a variety of broadening and functional experiences that can create impactful learning. Employees and people managers use the Experience Map to strengthen their development conversations and to plan and accelerate experience-based development that is aligned with individual career goals, interests and potential. In 2018, Experience Maps were launched for the functional areas Finance, IT, and People & Organization.

Also in 2018, we piloted the 'X-Time' platform in the US. It enables employees who are seeking development experiences to look for available on-the-job experiences throughout the company. X-Time serves as an online project marketplace designed to connect people and drive results at DSM. Managers who are seeking resources and capabilities for specific projects can post roles on the easy-to-navigate online marketplace and connect with employees across the company. Employees participating in an X-Time experience can commit up to 10% of their time to this project — enough time to make a meaningful contribution while continuing to meet their current obligations. Through X-Time, employees can build new capabilities and relationships which will enrich their development and careers.

### Learning and development through others with Bright Mentoring

Mentoring plays an important role in learning through others. We revamped the Bright Mentoring initiatives across all regions in 2018, creating a consistent experience for all mentors and mentees worldwide. Bright Mentoring consists of a global mentoring program, regional mentoring programs, and a new reverse mentoring initiative. Program participants can stay connected to one another, share best practices, and learn from each other through connection point webinars as well as our internal social media platform. In 2018, over 120 employees participated in the global mentoring program, while our regional mentoring programs involved more than 600 participants across all regions, including almost 90 participants with a cross-regional mentoring relationship.

The reverse mentoring program was initiated by the Inclusion & Diversity Council to foster inclusion and diversity at DSM. Almost 50 people participated in this program. The Reverse Bright Mentoring program connects senior DSM executives as mentees to bright talents as mentors. In the reverse mentoring relationship, the bright talent in an early stage of her or his career provides mentoring to a more senior leader to offer skills and share knowledge from different perspectives (such as generation, gender and culture).

### Developing our leaders & people managers

Developing both our leaders and our people managers remains a key priority for us at DSM. The DSM Leadership Model, introduced in 2012, provides a common vision and language for leadership at our company and specifies the behaviors we expect from our leaders and people managers. It remains fully embedded across the organization and continues to be a foundational element of new learning and development initiatives.

DSM's Leadership Transition Programs support our managers in their development through each transition in their careers. Based on pilots in 2017, we launched three blended learning journeys across all regions in 2018: Leading Self, Leading Others and Leading Leaders. Key elements of these learning journeys are a strong online learning environment and pre- and post-work involving participants' managers to ensure strong commitment and follow-up. The programs are delivered by a joint team of external facilitators, company senior executives, designated talents, and internal talent development consultants to maximize the relevance of the experience to everyday working life at DSM.

In 2018, we continued our online campaign 'People Manager 2018'. Every month, this campaign highlights a topic that is of relevance for our people managers. Our peer group learning sessions 'Meet, Share and Learn' were offered at critical moments in the P&O cycle: Goal-Setting, Talent Review, Development Conversations, and Performance Reviews.

### *Strengthening our talent pipeline*

Talent development is a key priority for the leadership of our company. To further grow our business, we need to develop all our people so that they achieve their full potential. At DSM, talent development focuses on building a sustainable talent pipeline that is diverse, global, with the right balance of deep expertise and broad leadership. Core to our approach is the belief that talent is in everyone: what matters is looking at what kind of potential you have, and the best development path to reach your full potential.

### Attracting and selecting talent

Attracting the right talent is crucial when building a sustainable talent pipeline. In 2018, DSM was included in the Forbes list of the World's Best Employers, recognized as a thought leader on candidate engagement by Gartner, and also featured as a finalist in the LinkedIn Talent Awards.

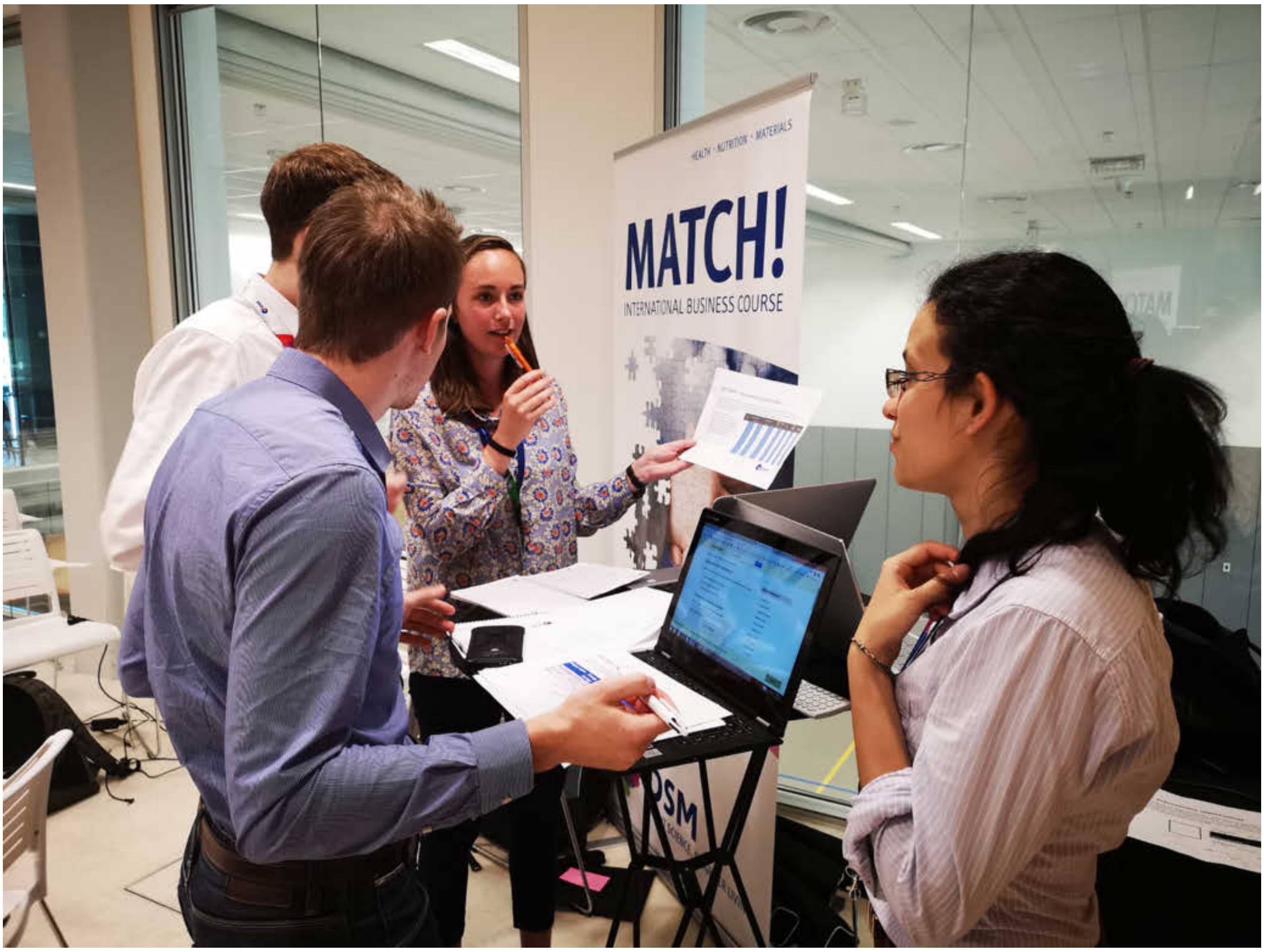
We continued to drive digital innovation within the Global Talent Acquisition organization by launching a new digital hiring platform. This platform enables us to meet the needs of the modern talent marketplace with video interviewing software and assessments. Our hiring intelligence platform is transforming the way we discover, hire, and develop talent. We proactively identified more than 800 high-quality candidates using artificial intelligence sourcing tools and employer brand marketing campaigns within DSM Engineering Plastics, the procurement function, and the Nutrition cluster.

We invested in upskilling the organization, with people managers trained in the (he)Art of Hiring, including training on unconscious bias and inclusion & diversity. We offered more than 400 internships, and more than 300 early career hires participated in our MATCH! and other graduate talent programs around the world. We hired over 3,000 employees via our regional recruitment teams in 2018. We also enhanced the candidate experience, with a candidate satisfaction rating of 92% globally — our highest ever.

## Identifying and developing future talent

One of the key focus areas for strengthening our talent pipeline is to identify a broader pool of emerging leaders — early career talent who could be stretched into accelerated career development. Development for emerging leaders continues, and this is the most diverse group from a gender and nationality perspective. Our first emerging leader pool of 2016 shows an overall positive picture, with a retention rate of 88%.

Our emerging leaders are also generally in fast-track mode, with 70% in their current position for less than three years and 42% promoted one or more levels since their designation. The emerging leader pool increased by 28% in 2018 compared to 2017. Within our senior talent group, which continued to increase in size and diversity, we saw retention rates of over 90%. This trend was complemented by very good career moves, including some cross-business redeployments, which are key to helping us develop senior leaders with broader experience and skills sets. Going forward, our focus will be on broadening the experience opportunities of our talents, as this is key to strengthening our pipeline.



A turnover rate of 9.5% in our executive pipeline has enabled us to increase the diversity and geographical spread of our executive population. The overall succession strength for our business and functional leadership teams remained stable compared to 2017. Going forward, we will have to maintain our focus on this topic throughout 2019, with a particular emphasis on succession planning.

*Total rewards*

Our total rewards strategy aims to support the realization of our business objectives through monetary and non-monetary rewards. It serves as a reference frame for compensation and benefit plans and programs across the organization, and is designed to:

- Ensure a consistent and fair approach in our reward programs across employee segments and geographies, contributing to a consistent employee value proposition around the globe
- Support the further development toward a high-performance organization and culture, help to attract, engage and retain high caliber employees and to reinforce desired behaviors
- Get the maximum out of our investments in rewarding talents

In 2018, we reviewed our total rewards strategy to align it with the recent strategy update. This review also aligns the possible contributions of reward tools, products and services to the six strategic levers as highlighted in the renewed people & organization strategy. An example is the inclusion of customer-centricity in our incentive schemes.

In 2018, further steps were made to align and standardize salary structures on a global scale using a set of shared basic principles. This helps to further enhance the use of a global platform to manage salary adjustments in a consistent way.

Major steps have been made in aligning and deploying global sales incentive plans within the outlines of the Sales Compensation Framework. New tooling has been introduced allowing the business to improve goal setting, monitor progression in sales results and subsequent incentive pay, and to steer on predefined KPIs during the year.

A global annual cash incentive framework for non-sales, known as the Short-Term Incentive (STI) Framework, was introduced, with a phased roll-out started in the last quarter of 2018. The new Framework replaces a broad variety of existing plans, emphasizing that we are one company working toward the same business objectives. The new STI Framework:

- Better aligns pay and performance and focuses on the achievement of business objectives by aligning objectives top-to-bottom within the organization
- Significantly reduces the number of STI plans, enabling more efficient and consistent plan/program management and administration (global tooling)

*Driving performance*

### Individual performance evaluations

Regular performance evaluations play an important role in ensuring we are performance driven. Over 14,000 employees have access to the digital evaluation tool for performance reviews. All other employees participate in performance evaluations on paper or with other local systems. Our approach to target-setting focuses on 'Fewer, Bigger, Better Goals' that are measurable, relevant and challenging.

### Continuous Improvement in operations

One of the ways in which we drive organizational performance is by fostering a culture of continuous improvement across manufacturing sites and supply chain environments. This mindset is driven by the DSM Integral Continuous Improvement (DICI) journey, which is currently running in 83% of our Manufacturing and Supply Chain organizations. The premix locations are currently excluded from the DICI scope.

We focus on empowering all our people, so they can make the many small improvements that can have a significant impact on operations and on our employee engagement — unleashing the talent in everyone. This journey is being executed together with one common way of working, which enables us to share and learn across sites and businesses much faster than before.

A group of operators in Waalwijk (Netherlands) had the ambition that each operator should have the motivation and the power to optimize his own workplace. They engaged all shifts in mini kaizen workshops which resulted in many practical improvements: reduced workload, batch time reduction, better ergonomics and yield improvements. This example of changing the mindset of the work force by using the DICI methodology won the DSM Operations Continuous Improvement Award, presented by Managing Board member Dimitri de Vreeze.

In Belvidere (New Jersey, USA), the team utilized coaching and feedback in supporting the learning process of all site employees. They boosted the continuous improvement culture by measuring behavior in 'High Impact' moments, providing feedback — in the moment and one-on-one — and developing coaches in the site organization. This resulted in big improvements in the culture at their fermentation plant — very positive Gemba walks, more effective meetings, people feel listened to and feel more inspired by their supervisors.

## Responsible business practices

*International Labour Standards*

We apply the International Labour Standards of the International Labour Organisation. We respect the role of works councils and collective bargaining and work with these groups in the countries and regions in which they are present. We develop social plans and severance programs in the event of significant reorganizations. We promote employee empowerment and human rights protection and maintain dialogues with employees and representative bodies to enable this.

*Human rights*

Our purpose as a company means that respecting human rights is fundamental to achieving the sustainable societal advances to which we aspire. We believe that the basic rights and freedoms to which all people are entitled — human rights — should be understood, respected and promoted by all companies as the cornerstone of socially responsible business.

We have a long-standing commitment to international declarations and the relevant instruments to safeguard these, including:

- The UN Universal Declaration of Human Rights
- The UN Guiding Principles on Business and Human Rights (the Ruggie Framework)
- The ILO International Labour Standards
- The OECD Guidelines for Multinational Enterprises

We have been a signatory to the UN Global Compact since 2007.

Our commitment to human rights is defined in our position paper on the company website. The development of our human rights policy helps embed the responsibility for respecting human rights into the programs, policies and daily operations of all business functions and regions. Our global whistleblower policy (DSM Alert) is in place so that employees and external stakeholders can report any perceived violations of human rights as well as violations of laws and regulations. In 2018, we mapped the potential human rights impacts of our business activities through a global risk assessment. A human rights steering committee was additionally set up to further strengthen the governance structure. The cross-functional steering committee will create a more integrated and coordinated approach, supervising progress on human rights both within our company and in our supply and distribution chains. The steering committee is chaired by Judith Wiese, the EVP Group People & Organization.

In addition to the steering committee, a working group launched the first initiative to translate the outcome of the global risk assessment into a human rights action plan during 2018. The working group is composed of representatives of the various functions on the steering committee. This action plan focuses on:

- Further embedding human rights (integrating human rights policies into relevant business processes and raising awareness of these policies)
- Risk management (impact assessment in operations in high-risk countries, with a specific focus on vulnerable groups)
- Supply chain (onboarding and support systems where needed)

We regularly review our rewards framework to make sure it meets the standards of our total rewards strategy and fair remuneration. In 2018, we focused on our commitment to equal pay and a living wage. We define comparable pay and remuneration for men and women for doing work that requires equivalent qualifications and skills. We have further elaborated our position on equal pay in an equal pay statement on the company website. In addition, a reporting process was developed to execute a gender pay gap ratio and living wage analysis. We will establish the process to obtain and validate the required data to ensure consistent, accurate and transparent reporting.

Beyond our own operations, potential labor and human rights impacts are handled through our Supplier Sustainability Program (SSP). We assess suppliers for potential human rights issues through Together for Sustainability / EcoVadis sustainability assessments and audits. Read more about our SSP and how we manage potential human rights impacts within our supply chain on page 146. For more information on the steps we have taken relating to Modern Slavery in our supply chain, please see the company website.

# Planet

**62%**[1,2]

Sales of Brighter Living Solutions versus 62% in 2017

**41%**

Purchased electricity from renewable sources versus 21% in 2017

**33%**

Greenhouse gas efficiency improvement versus 2008, versus 26% in 2017

**5.1%**

Energy efficiency improvement, versus 2015, compared to 3.8%[3] in 2017, >1% average annual ambition

**A$^-$ RATING**

CDP Climate, ranked no.1 Sustainalytics and no.1 in our DJSI industry group

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

15 LIFE ON LAND

[1] Excluding temporary vitamin effect, see table on page 65.
[2] For a small percentage of sales (approximately 2% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.
[3] The 2017 number has been adjusted positively because of improved data quality.

We take our global environmental and social responsibilities very seriously. This extends beyond our own operations to include those of our suppliers, customers and end-users. We address our environmental responsibilities through our portfolio of Brighter Living Solutions, our Safety, Health & Environment (SHE) policy, and our position on issues such as product stewardship, industrial biotechnology and biodiversity. We focus on improving our environmental footprint, enabling our customers to do the same, and advocating on our key environmental topics. Our Brighter Living Solutions — solutions that are better than the mainstream reference solution for people and/or the planet — account for 62% of our net sales (excluding the temporary vitamin effect).

Our operations network spans more than 110 commercial production facilities in over 40 countries. The DSM Responsible Care Plan 2016–2020, an essential part of our company strategy, describes our environmental targets and what actions we are taking. Our approach supports the Sustainable Development Goals (SDGs), especially SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).

This chapter addresses our approach on several topics from our materiality matrix:

- Climate change & renewable energy
- Resource scarcity / Circular economy
- Water security
- Biodiversity
- Product stewardship

For more detailed information about our Planet performance, see 'Sustainability statements – Planet' page on 144. See also 'How we create value for our stakeholders' page on 32 and 'Stakeholder engagement' on page 145.

## Climate change & renewable energy

In 2015, the Paris Agreement first established the urgent need to take action on greenhouse gas (GHG) emissions to limit temperature increases to well below 2°C. In Strategy 2021, we revised our GHG emissions target in order to bring it in line with the Paris Agreement. Our new target, announced in 2018, is a 30% absolute reduction of our scope 1 + 2 emissions by 2030 versus our 2016 baseline. This is below a 2°C pathway. We will achieve this target through a wide-ranging number of actions across all our operations, including: (1) renewable electricity: 50% of purchased electricity to be sourced from renewables by 2025, increasing to 75% by 2030; and (2) energy efficiency improvement: an average year-on-year improvement of at least 1% until 2030.

An additional scope 3 intensity reduction target of 28% by 2030 versus our 2016 baseline has been agreed which, together with our scope 1 + 2 target, meets the criteria for a Science-Based Target. DSM's climate change strategy received an A- rating from CDP in 2018.

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| *Greenhouse gas (GHG)* | | | |
| GHG emissions scope 1 + 2 market-based (million tons) | | 1.2[1] | 1.5 |
| GHG emissions scope 1 + 2 location-based (million tons) | | 1.4[1] | 1.6 |
| GHG emissions scope 3 (million tons) | | 11.3 | 13.1[2] |
| GHG efficiency improvement versus 2015 | 25% in 2025 | 16.6% | 8.1% |
| GHG efficiency improvement versus 2008 | 40–45% in 2025 | 33% | 26% |
| *Energy* | | | |
| Primary energy use (PJ) | | 20.8 | 23.6 |
| Energy efficiency improvement versus 2015 | > 10% in 2025 | 5.1% | 3.8%[3] |
| Purchased electricity from renewable sources | 50% in 2025 | 41% | 21% |

1 Including a one-time effect of large plant shutdowns in 2018, estimated at roughly 150 kt. These effects will not take place in 2019.
2 Adjusted using updated emission factors and assumptions.
3 The 2017 figure has been adjusted positively because of improved data quality.

In support of our ambition to substantially reduce our carbon footprint we have introduced new measures which we apply to all growth projects. Starting from 2019, business growth projects must either be GHG-neutral or else be compensated for. In addition, to encourage investments in low-carbon and carbon-free technologies, we use an internal carbon price of €50/t $CO_2$eq in the valuations of key investment projects.

### *Scope 1 + 2 GHG emissions*

We actively manage our absolute GHG emissions reduction, GHG efficiency and energy efficiency.

Our scope 1 + 2 market-based GHG emissions decreased from 1.50 in 2017 to 1.23 million tons of $CO_2$eq in 2018. Our GHG efficiency improved from 26% in 2017 to 33% in 2018 versus our 2008 baseline[3]. In addition to improvement actions, a large part of the result is due to planned maintenance shutdowns (contributing approximately 150 kt $CO_2$eq). The effect of the shutdowns is temporary, impacting the year in which the shutdown was executed. The increased use of renewable energy (contributing approximately 80 kt $CO_2$eq) resulted in a significant permanent improvement of our GHG emissions. The energy efficiency improvement measures also contributed to the improved GHG performance. Projects included a switch at DSM Nutritional Products' site in Kingstree (South Carolina, USA) from a solvent-based to a water-based technology, requiring less energy and, consequently generating a smaller environmental footprint.

Taking all these different factors into account, we can split the development of the absolute GHG emissions into an underlying structural improvement (such as contributions from renewable electricity, and energy efficiency gains) and some one-time effects from major plant shutdowns (such as maintenance). The structural improvement gains will vary year-on-year depending on the potential renewable electricity initiatives and the magnitude of the improvement projects executed within the company. We estimate the effect of the underlying structural improvements in absolute GHG emissions to be roughly 8% in 2018 versus 2016. The absolute GHG emission reduction (the sum of the structural and one-time effects) amounts to approximately 18% in 2018 versus 2016.

The overall balance shows that we are well on track to achieve the targets defined in the Responsible Care Plan 2016–2020, thanks to our investments in greenhouse gas efficiency improvements and energy improvements.

> “ We cannot address climate change alone. We play our part by improving our own footprint, enabling our customers to do the same, and advocating for progress on this important issue.”
>
> **Feike Sijbesma, CEO/Chairman Managing Board**

*Energy transition*

Our energy efficiency improvement was 5.1% in 2018 versus our 2015 baseline. The annual improvement for 2018 versus 2017 was 1.4%.

[3] For 2017, the GHG efficiency improvement is based on market-based emissions. For the period before 2017, market-based emissions were not measured, so the GHG efficiency improvement is based on location-based emissions.

Our efforts to reduce our energy utilization and greenhouse gas emissions were supported by a range of improvement proposals from the business groups which were implemented during 2018. This program encompasses projects for saving heat, fuel and electricity with a total greenhouse gas improvement potential expected to yield 30kt in greenhouse gas reduction and energy efficiency improvements of 2% annually as of 2019.

Projects carried out as part of this program in 2018 included one at our DSM Nutritional Products site in Dalry (UK), where an optimization of the distillation column resulted in a significant reduction of steam usage, and another at our DSM Dyneema site in Laiwu (Shandong Province, China), where multiple small optimizations were made to the air compression and cooling networks.

*Renewable energy*

DSM is a 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 by 2030 and 100% at the earliest possible opportunity.

In 2018, we have been making significant progress toward our target of renewable electricity. The percentage of purchased electricity from renewable sources increased from 21% in 2017 to 41% in 2018, clearly a step-change increase due to contractual agreements. In the Netherlands, Windpark Bouwdokken commenced full production in April, while the larger Windpark Krammer went operational in stages throughout 2018. An additional contract brought the coverage of purchased electricity from renewable sources in the Netherlands to 100%. At our DSM Nutritional Products manufacturing sites in Switzerland, approximately 50% of the electricity comes from renewable sources. Our Power Purchase Agreement in the US is currently providing an estimated 40% of our requirements from wind power.

We also look for opportunities to replace fossil fuels used in our processes. The biomass cogeneration plant at our DSM Nutritional Products site in Sisseln (Switzerland) is the first major success in this area. This plant replaces the site's old natural gas-fired cogeneration plant. Our partners, ENGIE and EWZ, have built the biomass plant, which they will own, operate and maintain. The plant will commence production in early 2019, and is scheduled to result in 48 kt $CO_2$eq reduction per year (of which about 80% is for us and 20% for other partners).

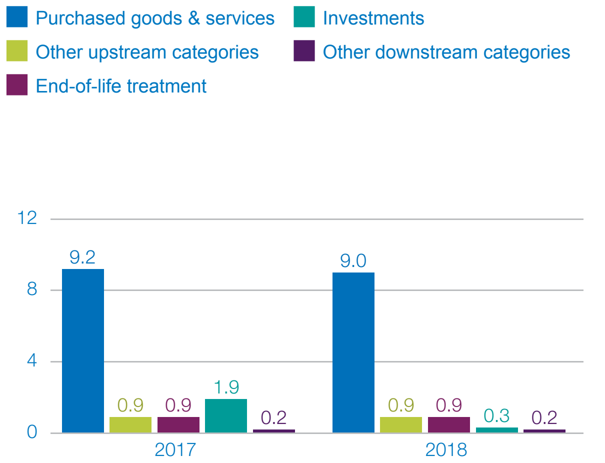
*Scope 3 GHG emissions*

Our scope 3 emissions amounted to approximately 11.3 million tons $CO_2$eq in 2018. This figure is based on calculations using adjusted emission factors, extrapolations and updated assumptions. In 2018, a detailed re-assessment of scope 3 categories was carried out. The 2017 figures have been recalculated using the same approach.

The largest adjustments took place in emissions from 'End-of-life treatment of sold products'. Revised verified landfilling assumptions, exclusion of bio-based and inorganic products, and adjustment of emissions from incineration as per the Guidance for Accounting and Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, provided by the World Business Council for Sustainable Development, led to a significant restatement of this category. The figure for 'Purchased goods and services' was adjusted using updated emission factors.

Our emissions in 2018 decreased by 1.8 million tons primarily due to the divestment of participations in former DSM businesses (DSM Sinochem Pharmaceuticals, and caprolactam business via ChemicaInvest). The main scope 3 category in the 2018 figures is 'Purchased goods and services' which slightly decreased compared to 2017.

**Scope 3 GHG Emissions**
in $CO_2$eq, million tons




A supplier emission reduction program called CO2REDUCE has been developed in cooperation with several key suppliers. Increased engagement is a core element in our defined supplier program. During our inaugural Supplier Partnership Day in the Netherlands, which was held in September, our commitment to reduce carbon emissions from suppliers was a central theme, generating a clear call to action. This event was attended by more than 75 prominent key suppliers and featured a keynote address from Christiana Figueres (the former Executive Secretary of the United Nations Framework Convention on Climate Change).

We also develop products for the circular and bio-based economy to further reduce scope 3 emissions. See 'Stakeholder engagement' on page 145 and 'Resource scarcity / Circular economy' elsewhere in this chapter.

*Avoided emissions*
Brighter Living Solutions can have benefits at any stage in the value chain. Avoided emissions refers to the emissions-related environmental benefits that occur downstream in the use phase of our products

For example, DSM Engineering Plastics supply products into the automotive industry, where they replace metals and other materials to achieve weight savings. These weight savings reduce vehicle fuel consumption and associated greenhouse gas emissions. Products sold in 2018 to this market will avoid the emissions of approximately 806 kt $CO_2$eq over the average lifespan[4] of the vehicles.

VevoVital® is one of our many solutions in animal nutrition, a eubiotic added to pig diets that delivers proven benefits including improved feed conversion and increased weight gain. This reduces feed intake, one of the largest contributors to the environmental impact of pig farming, which reduces emissions. In 2018, sales of VevoVital® avoided an estimated emission of 263 kt $CO_2$eq.

*Other emissions to air*

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| Air emissions efficiency improvement versus 2015 | 40% by 2020 | 45% | 41% |
| *Air emissions (x 1,000 tons)* | | | |
| - VOC | | 4.9 | 6.6 |
| - $NO_x$ | | 0.5 | 0.7 |
| - $SO_2$ | | 0.09 | 0.28 |

Although we already achieved our 2020 target in 2017, we continued our efforts to reduce air emissions in 2018, consistent with our sustainability values. For example, a large project to reduce VOC emissions at our largest manufacturing site in Jiangshan (Jiangsu Province, China) was implemented during the second half of the year. This VOC treatment system targets an above-90% reduction in VOC emissions at this site.

## Resource scarcity / Circular economy

While valuable materials are leaking away from our economy, the Earth's resources are finite and there is a growing pressure on the availability of those resources. Meeting the needs of current and future generations in a way that is sustainable for people and the planet requires moving away from a linear to a circular use of resources. That is why we are committed to securing the future availability of natural resources and unlocking more value from the limited resources available. By

[4] According to IHS, the average age of a vehicle in Europe is 11 years. In the US, it is slightly longer.

working closely together with our peers and industry experts, we continue to develop closed-loop, circular solutions. These maintain materials and products at their highest value for the longest possible time while improving our own impact, enabling customers to deliver sustainable solutions, and advocating to create a sustainable business environment.

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| *Renewable raw materials* | | | |
| Renewable raw materials | | 14.3% | 15.4% |
| *Waste* | | | |
| Waste recycled | 80-90% in 2020 | 83% | 84% |
| Non-hazardous waste (kt) | | | |
| - Recovered | | 82 | 104 |
| - Incineration[1] | | 11 | 12 |
| - Landfill | | 18 | 16[2] |
| Hazardous waste (kt) | | | |
| - Recovered | | 45 | 40 |
| - Incineration[1] | | 34 | 23 |
| - Landfill | | 3 | 3 |

1 Includes incineration with and without heat recovery.
2 The 2017 figure has been adjusted positively because of improved data quality.

Resources & Circularity are a key part of Strategy 2021. We aim to take sustainability into consideration at every stage in the value chain, by embedding circular & bio-based thinking into our sourcing, operations, innovation and portfolio, and enabling 'closed loop' solutions through advocacy and partnerships. Our scientific expertise and innovative power are helping us develop materials that have a wider environmental and societal impact.

We are enabling the transition toward a circular & bio-based economy by:

- Reducing the use of critical resources over the value chain
- Replacing scarce, hazardous, and potentially harmful resources with safe and renewable alternatives
- Extending the lifetime of products with improved durability or shelf-life
- Designing for recyclability
- Recovering waste streams by viewing waste as a resource

*Renewable raw materials*
DSM believes that the use of sustainable resources is an essential step in securing future resource availability but that it also has environmental benefits in reducing the ecological footprint. The renewable raw materials we use include waste from agriculture, yeasts and enzymes, carbohydrates and natural oils and acids. In 2018, the share of spend on renewable raw materials decreased to 14.3% versus 15.4% in 2017. The percentage decrease is due to product mix changes, while the absolute amount is comparable to the average of the past few years.

An example of our use of renewable raw materials is EcoPaXX®, DSM's bio-based, high-performance polyamide (PA410). It offers outstanding performance in the most demanding of environments, including excellent chemical resistance and low moisture absorption, combined with a very high melting point (highest of all bio-plastics) and high crystallization rate. EcoPaXX® is 100% carbon neutral from cradle to gate: the amount of carbon dioxide emitted during the production is offset by the amount absorbed in plant growth, and in particular by *Ricinus communis,* the tropical castor bean plant that makes up some 70% of EcoPaXX®. This provides a perfect opportunity for manufacturers who want to combine sustainability with performance.

*Waste*
Our definition of waste recycled is the percentage of total waste related to normal operations that is recycled or, if this is not possible, incinerated off-site with heat recovery. We pay careful attention to meeting local waste management legislation. Waste statistics are mainly influenced by volumes, the product mix and improvement projects. We saw a small decline to 83% recycled waste in 2018, having transformed a former recycled waste stream into a product stream. The progress is still in line with our ambition level of 80–90% in 2020.

Projects executed in 2018 include the implementation of a landfill-reduction project at DSM Nutritional Products in Mairinque (Brazil) — enabling an expected reduction of waste to landfill of 0.9 kt per year — and a project at DSM Nutritional Products in Dalry (UK), where an upstream waste stream was repurposed to produce fertilizers. We are investigating the possibilities for shifting a downstream waste stream, which has already decreased in volume due to the upstream waste initiative, away from landfill.

### Water security

Water is essential to life. It is also essential to the viability of our business, and we recognize that this precious resource will come under increasing pressure in the face of climate change and growing global demand. We are committed to measuring, tracking and continually improving our water stewardship as well as our position as a global sustainability leader within the chemical sector. As part of this commitment, DSM is a signatory to the CEO Water Mandate, a UN Global Compact initiative that mobilizes business leaders to advance water stewardship, sanitation, and the SDGs, in partnership with governments, peer institutions, civil society, and others. In 2018, we received a B- rating from CDP for our water governance and management strategy.

| | Aspiration | 2018 | 2017 |
|---|---|---|---|
| *Sustainable water management* | | | |
| Water risk assessments | 90% in 2020 | 100% | 100% |
| Water consumption (million $m^3$) | | 22 | 23 |
| Water use (million $m^3$) | | 114 | 114 |
| *Emissions to water* | | | |
| COD (kt) | | 2.2 | 2.5 |

We recognize water management as integral to our risk mitigation and environmental impact reduction strategies. We believe that water risks are local by nature, and therefore focus on local water risk assessments and thorough follow-up of these. In 2018, we completed water risk assessments at 100% of our material water sites. The main water risks identified related to water quality, changing local regulations and limitations in local infrastructure. Risk exposure to water scarcity was identified as very limited in the regions where we operate. Mitigation actions were defined after the 2017 and 2018 risk assessments. In total, 34 actions were defined by the end of 2018, of which seven were closed during 2018. The remaining actions will continue in 2019.

To strengthen our water management efforts, a new corporate water management standard — defined in line with the Alliance for Water Stewardship standard and the UN Global Compact CEO Water Mandate — was launched in 2018. Implementation of this standard commenced at sites in water-stressed areas as well as at material water sites.

Compared to 2017, our water consumption decreased to 22 million $m^3$. This decrease was also helped by maintenance stops at various manufacturing sites.

"Water security is a global issue that impacts billions of people, from flooding and storms through to water scarcity and drought. Water security is a material topic for us that requires solutions addressing local water risks. We report our progress on water security toward the UN Global Compact CEO Water Mandate through this report."

Feike Sijbesma, CEO/Chairman Managing Board

Our water pollution reduction programs aim to reduce total water pollution, mainly by cutting Chemical Oxygen Demand (COD). Total COD decreased from 2.5kt in 2017 to 2.2kt in 2018, helped by production shutdowns and investments to improve our water treatment facilities.

A new water treatment plant is under construction at DSM Nutritional Products in Mairinque (Brazil). The project will segregate all lines of domestic effluent, industrial effluent, and rain water, and build containment tanks to store the effluents on site. The domestic plant makes use of a natural phytoremediation process (use of living plants to clean up soil, air and contaminated water). The project represents a significant step forward in terms of water security of supply and water effluent treatment at the site.

## Biodiversity

| | 2018 | 2017 |
|---|---|---|
| Sites near high biodiversity | 66% | 61% |

Biodiversity and healthy ecosystems are key conditions for a sustainable world. Each year, we identify and monitor the protected areas in the vicinity of our sites and the impact that our activities have on these. Sixty-six percent of our sites have been identified as being located in, or adjacent to, areas of high biodiversity value. The increase compared to 2017 is due to newly acquired sites in areas of high biodiversity and the reclassification of areas surrounding certain existing sites as areas of high biodiversity by (local) governments. For more information, see 'Stakeholder engagement' on page 145 and our position paper on Biodiversity on the company website.

## Product stewardship

Product stewardship is an important aspect of our SHE and sustainability strategies. The term refers to possible safety risks and adverse effects on human or animal health and on the environment that could be caused by our products, or the substances present in them, throughout the value chain. It is our responsibility to control and minimize these. Product stewardship closely connects with the circular economy, as products with zero or reduced hazardous properties will have a higher potential for success in a circular economy.

We renewed our product stewardship commitments in 2018. By the end of 2020, we will have assessed our full product portfolio and will have an action plan for products with Substances of Very High Concern (where the concentration is above 0.1%). Substances in products that are considered 'essential for life' (i.e. that have a proven beneficial effect when used at the officially recommended dose in nutritional and pharmaceutical applications) are excluded from this assessment. We take a risk-based approach and will use safer alternatives where feasible, and always when required. For our innovation portfolio, 'safe by design' is the leading principle in the development of new and better products and processes. For more information on product stewardship, see the company website.

# Profit

**+6%**[1]
**+11%**

Organic sales growth versus 2017

**+6%**[1]
**+26%**

Adjusted EBITDA[2] growth versus 2017, to € 1,532[1] / € 1,822 (in millions)

**+100**[1]
**+450**

ROCE growth (in bps) versus 2017, to 13.3%[1] / 16.8%

**19%**[1]

Innovation sales, in line with our ambition of ~20%

**43%**[1]

Sales to high-growth economies

**€ 646**

Capital expenditure (cash-based), versus € 546 in 2017 (in millions)

**€1,079**

Total net profit (in millions)

**€ 2.30**

Proposed dividend per ordinary share for 2018[3], versus € 1.85 for 2017

**€ 113**

Net debt versus € 742 end of 2017 (in millions)

[1] Excluding temporary vitamin effect, see table on page 65.
[2] See page 174 for reconciliation to EBITDA.
[3] Subject to approval by the Annual General Meeting of Shareholders.

## Overall financial results

Within the Profit dimension of DSM's Triple P approach, DSM aims to deliver a sustainable financial return. This ensures business continuity and allows the company to grow, while at the same time providing shareholders the opportunity to invest in a company whose purpose drives sustainable above-market growth at higher returns.

We established and implemented our three-year strategic plan for the period 2016-2018 called Strategy 2018: *Driving Profitable Growth* with two headline financial targets: high single-digit percentage annual Adjusted EBITDA growth and high double-digit basis point annual ROCE growth. To deliver on these targets, we defined clear actions, including outpacing market growth, cost reduction and efficiency improvements to deliver € 250–300 million in cost savings versus the 2014 baseline, and making a continuous push for consistent improvements in capital efficiency.

In support of our targets, we also adjusted our global organizational and operating model to create a more agile, commercially focused and cost-efficient company. We refrained from large acquisitions and focused instead on delivering value from the current portfolio and extracting value from the monetization of our joint venture partnerships.

This chapter includes an overview of the key financial metrics of the company and our performance in 2018.

In 2018, DSM delivered strong financial results again as we significantly exceeded our financial targets. Our focus on driving above-market sales growth, while pursuing cost and efficiency improvement initiatives as well as maintaining capital discipline, continued to deliver strong results in both Nutrition and Materials.

In Nutrition, we benefitted from a temporary vitamin effect caused by an exceptional supply disruption in the industry. Adjusted for the total estimated temporary vitamin effect of € 415 million, our underlying organic growth was 6% compared to 2017, with sales of € 8,852 million. Volumes were up 3% from the previous year and above market growth. The price growth of 3% was partly offset by a negative foreign currency impact. The Adjusted EBITDA in the underlying business was up 6% from 2017, to € 1,532 million. Adjusted for currencies, the growth was 10%, above the high single-digit growth target set with Strategy 2018. Strong EBITDA growth in the business was also supported by our cost-reduction and efficiency improvement programs.

DSM achieved run-rate cumulative gross cost savings of about € 275 million by the end of 2018. In the underlying business, Return on Capital Employed (ROCE) was up 100 basis point to 13.3%. Since the kick-off our successful Strategy 2018, ROCE is up 570 basis points versus end of 2015 (in the underlying business).

Our total sales increased by 7%, to € 9,267 billion (compared to € 8,632 in 2017), including a total estimated € 415 million temporary vitamin effect. The total Adjusted EBITDA was up 26% to € 1,822 million, benefiting from a total estimated € 290 million temporary vitamin effect. Our total ROCE was 16.8%, up 450 basis points from 12.3% in 2017. Since the launch of our successful Strategy 2018, our total ROCE was up 920 basis points.

### Income statement

| x € million | 2018 | 2017 | Change |
|---|---|---|---|
| Net sales underlying business[1] | 8,852 | 8,632 | 2% |
| Net sales | 9,267 | 8,632 | 7% |
| **Adjusted EBITDA underlying business[1]** | **1,532** | **1,445** | **6%** |
| **Adjusted EBITDA** | **1,822** | **1,445** | **26%** |
| **EBITDA** | **1,754** | **1,348** | **30%** |
| **Adjusted operating profit** | **1,345** | **957** | **41%** |
| **Operating profit** | **1,245** | **846** | **47%** |
| **Adjusted net profit** | **1,034** | **706** | **46%** |
| APM adjustments | 45 | 1,075 | |
| **Net profit** | **1,079** | **1,781** | **(39%)** |
| **Net profit attributable to equity holders of Koninklijke DSM N.V.** | **1,077** | **1,769** | **(39%)** |
| ROCE underlying business (in %)[1] | 13.3 | 12.3 | |
| ROCE (in %) | 16.8 | 12.3 | |
| Adjusted EBITDA margin underlying business (in %)[1] | 17.3 | 16.7 | |
| Adjusted EBITDA margin (in %)[1] | 19.7 | 16.7 | |

[1] Excluding temporary vitamin effect, see table on page 65.

Capital efficiency is a key driver of cash generation. One of our key focus areas continued to be the improvement in our working capital as percentage of total sales. At the end of 2018, total working capital was € 1,674 million, compared to € 1,499 in 2017. The average total working capital as a percentage of sales was 18.7%, compared to 18.4% in 2017, partly due to the temporary vitamin effect in Nutrition during 2018 and in line with our aspiration of 'below 20%'.

Innovation plays an important role in driving both top-line and bottom-line growth. With 19% innovation sales in 2018 (in the underlying business), which we define as sales from products and solutions introduced in the last five years, we are delivering against our ambitious aspiration of 20%. In 2018, DSM also made progress on promising innovation projects that could have a wider societal impact and drive future growth. These include the Project Clean Cow, Veramaris®, fermentative Stevia and Niaga®.

During 2018, DSM also extracted value with the sale of the stake in DSM Sinochem Pharmaceuticals to Bain Capital. DSM received €271 million in cash following closing, excluding an earn-out. Furthermore, DSM anticipates receiving about €200 million in cash relating to the divestment of the Fibrant business by its associate ChemicaInvest (of which €120 million was received in 2018). During the strategic period, we extracted significant value from our joint venture partnerships Patheon, ChemicaInvest and DSM Sinochem Pharmaceuticals. The combined proceeds of these divestments were around €3 billion.

## Net sales and Adjusted EBITDA

Excluding the exceptional temporary vitamin effect influencing the Nutrition business (mainly in Animal nutrition), organic growth in the underlying business was 6%, driven by both Nutrition and Materials. Volume development accounted for a 3% increase, while price/mix had an 3% positive effect on growth compared to 2017. Exchange rate fluctuations had a negative impact of 4%. At €9,267 million, total net sales in 2018 were 7% higher than in 2017 (€8,632 million), with organic growth up by 11%.

Sales growth was strong among all regions, with favorable high double-digit growth in Western Europe and single-digit growth in North and Latin America. Sales were good in Latin America and China, despite some temporary shutdowns in Brazil and against a backdrop of economic uncertainty in both regions.

Solid growth was achieved in China, India and Eastern Europe. All high-growth economies together currently represent 43% of DSM's sales in the underlying business (44% when Africa is included), which is in line with 2017. The share of sales in these economies as a proportion of DSM's total sales gives us a well-balanced global footprint.

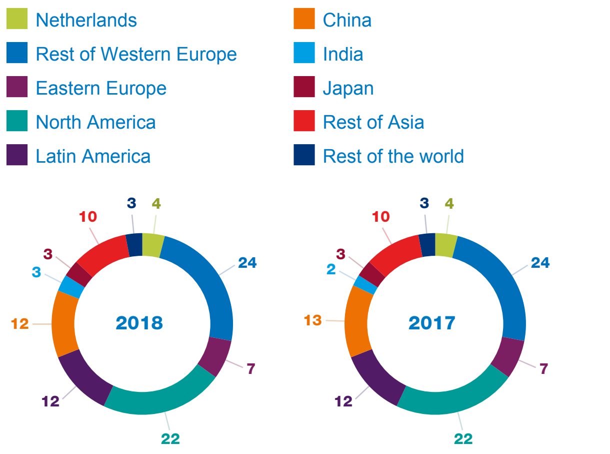
The Adjusted EBITDA in the underlying business was 6% up compared to the prior year to €1,532 million in 2018. Total Adjusted EBITDA (Adjusted operating profit before depreciation and amortization) increased by 26% or €377 million, from €1,445 million in 2017 to €1,822 million in 2018.

Adjusted EBIT (Adjusted operating profit) rose from €957 million in 2017 to €1,345 million in 2018, up 41%.

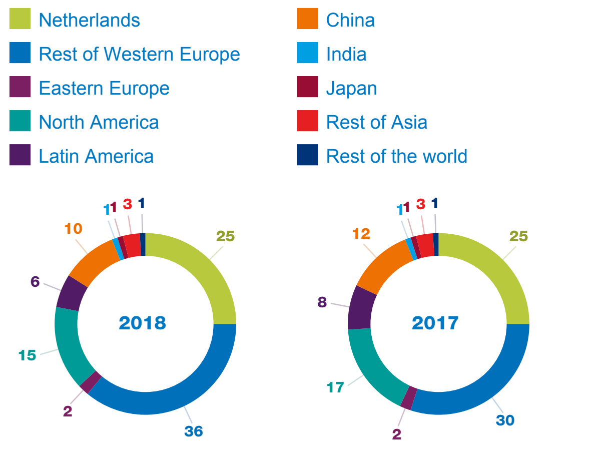
| | Net sales | | | Adjusted EBITDA | | |
|---|---|---|---|---|---|---|
| x €million | **2018** | 2017 | % change | **2018** | 2017 | % change |
| | | | | | | |
| DSM underlying business[1] | 8,852 | 8,632 | 2% | 1,532 | 1,445 | 6% |
| DSM | 9,267 | 8,632 | 7% | 1,822 | 1,445 | 26% |
| | | | | | | |
| Nutrition underlying business[1] | 5,722 | 5,579 | 3% | 1,117 | 1,053 | 6% |
| Nutrition | 6,137 | 5,579 | 10% | 1,407 | 1,053 | 34% |
| Materials | 2,913 | 2,825 | 3% | 512 | 488 | 5% |
| Innovation Center | 172 | 169 | 2% | 8 | 9 | |
| Corporate Activities | 45 | 59 | | (105) | (105) | |

1 Excluding temporary vitamin effect, see table on page 65.

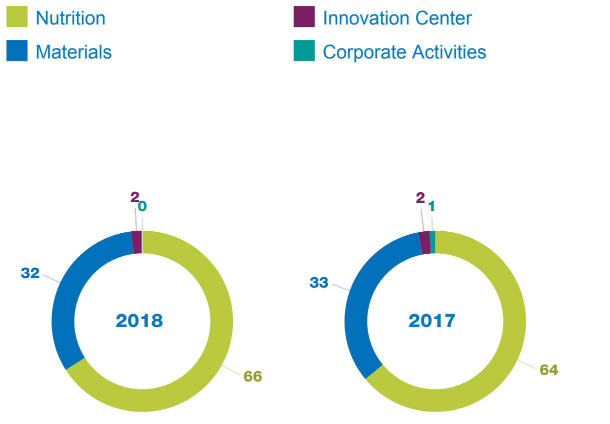
## Net sales by destination
in %



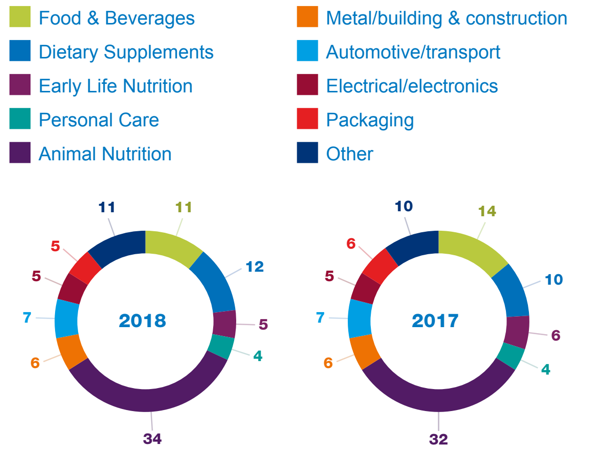

## Net sales by origin
in %



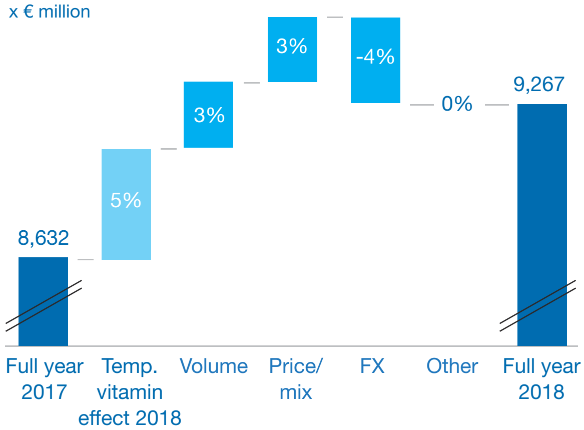

## Net sales by business segment
in %



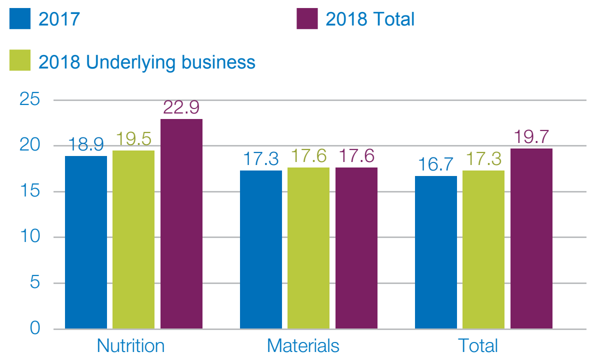

## Net sales by end-use market
in %




## Net sales bridge 2018
x € million




## Adjusted EBITDA margin
in %



### Net profit

Net profit attributable to equity holders of DSM decreased by € 692 million to € 1,077 million. This decrease was mainly a result of the higher Adjusted EBITDA (up € 377 million, including temporary vitamin effect), the sale of DSM's share in Patheon in 2017 (down € 1,250 million) and other differences in APM adjustments (up € 220 million), see below. Expressed per ordinary share, net earnings (including temporary vitamin effect) amounted to € 6.10 in 2018 (2017: € 10.07).

Financial income and expense decreased by € 3 million year over year to € 101 million. Lower interest expenses were offset by lower results on derivatives.

The reported effective tax rate over Adjusted taxable result 2018 was 17.4% (2017: 16.8%). This increase was mainly caused by the one-off positive effect by the change in US tax rate in 2017.

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

Total APM adjustments for the full year amounted to a profit of € 45 million, consisting of a profit regarding associates and joint ventures of € 122 million (mainly due to the gain of € 109 million on the sale of the shares of DSM Sinochem Pharmaceuticals), offset by € 68 million in restructuring costs related to the ongoing cost-reduction programs, € 32 million of impairments and a related tax benefit of € 23 million.

### Cash flow statement

| x € million | 2018 | 2017 |
|---|---|---|
| **Cash and cash equivalents at 1 January** | **899** | **604** |
| Cash flow provided by operating activities | 1,391 | 996 |
| Cash from / (used in) investing activities | (605) | 689 |
| Cash from / (used in) financing activities | (401) | (1,344) |
| Effect of exchange differences | (3) | (46) |
| **Cash and cash equivalents at 31 December** | **1,281** | **899** |

Cash flow provided by operating activities consists of the EBITDA for the year (€ 1,754 million) less various cash-out items including income tax of € 107 million and change in provisions of € 41 million, and changes in working capital of € 238 million. Our focus on cash flow resulted in a full-year operating cash flow of € 1,391 million, which is 40% higher than 2017, mainly due to the increase in EBITDA. Corrected for the temporary vitamin effect, the cash from operating activities amounted to € 1,126 million, an increase of 13%. See also 'Consolidated financial statements' on page 158.

The cash used in investing activities included capital expenditures (€ 673 million) and additions to fixed term deposits (€ 322 million), partly offset by the sale of the shares in DSM Sinochem Pharmaceuticals (€ 271 million) and the repayment of loans granted to ChemicalInvest (€ 163 million).

The cash used in financing activities consisted mainly of dividend paid (€ 225 million) and repurchase of shares (€ 236 million).

For the full cash flow statement, see 'Consolidated cash flow statement (Note 26)' on page 169.

### Balance sheet

The balance sheet total (total assets) reached € 13.6 billion at year-end (2017: € 12.8 billion). Equity increased by € 750 million compared to the position at the end of 2017. This increase was mainly due to the net result of 2018. Equity as a percentage of total assets increased from 55% to 57%.

Compared to year-end 2017, net debt decreased by € 629 million to € 113 million. The gearing at year-end was 1.4%, a further decrease compared to 9.5% at year-end 2017.

Capital expenditure on intangible assets and property, plant and equipment amounted to € 653 million in 2018 (€ 646 million on a cash basis), which was 37% higher than the level of amortization and depreciation in support of the high organic growth.

Total working capital amounted to € 1,674 million compared to € 1,499 million at year-end 2017, which represents 19.0% as a percentage of annualized fourth quarter 2018 sales (2017: 17.2%), below our aspiration of 20%. Cash-wise, the operating working capital (OWC) increased by € 246 million, mainly related to organic growth. OWC percentage increased from 22.3% at year-end 2017 to 24.2% of annualized sales at year-end 2018.

Cash and cash equivalents came to € 1,281 million at the end of the year; including current investments, this amounted to € 2,558 million (2017: € 1,853 million). Besides the regular cash flow, this increase was mainly attributable to the sale of our share in DSM Sinochem Pharmaceuticals and the repayment of the loans granted to ChemicaInvest.

## Balance sheet profile

| | **2018** | | 2017 | |
|---|---|---|---|---|
| | x € million | in % | x € million | in % |
| Intangible assets | 3,090 | 23 | 3,058 | 24 |
| Property, plant and equipment | 3,511 | 26 | 3,313 | 26 |
| Other non-current assets | 730 | 5 | 999 | 8 |
| Cash and cash equivalents | 1,281 | 9 | 899 | 7 |
| Other current assets | 5,029 | 37 | 4,533 | 35 |
| **Total assets** | **13,641** | **100** | **12,802** | **100** |
| Equity | 7,815 | 57 | 7,065 | 55 |
| Provisions | 153 | 1 | 204 | 2 |
| Other non-current liabilities | 3,139 | 23 | 3,358 | 26 |
| Other current liabilities | 2,534 | 19 | 2,175 | 17 |
| **Total equity and liabilities** | **13,641** | **100** | **12,802** | **100** |

" By optimizing our cost structure and improving our earnings growth rate, we have significantly strengthened our financial performance. With a strong balance sheet, we have the high level of financial flexibility to deliver our ambitious growth plans."

**Geraldine Matchett, CFO**

### Outlook 2019

DSM expects to deliver a full-year 2019 mid-to-high single digit increase in Adjusted EBITDA compared to prior year underlying Adjusted EBITDA (excluding temporary vitamin effect), together with an improvement in underlying Adjusted Net Operating Free Cash Flow in line with its Strategy 2021 targets. This outlook excludes the impact of IFRS16.

# Key business figures at a glance

DSM's 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 underlying business[1]

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 5,722 | 5,579 |
| Materials | 2,913 | 2,825 |
| Innovation Center | 172 | 169 |
| Corporate Activities | 45 | 59 |
| **Total** | **8,852** | **8,632** |

### Net sales

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 6,137 | 5,579 |
| Materials | 2,913 | 2,825 |
| Innovation Center | 172 | 169 |
| Corporate Activities | 45 | 59 |
| **Total** | **9,267** | **8,632** |

### Adjusted EBIT underlying business[1]

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 821 | 770 |
| Materials | 383 | 361 |
| Innovation Center | (14) | (30) |
| Corporate Activities | (135) | (144) |
| **Total** | **1,055** | **957** |

### Adjusted operating profit (EBIT)

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 1,111 | 770 |
| Materials | 383 | 361 |
| Innovation Center | (14) | (30) |
| Corporate Activities | (135) | (144) |
| **Total** | **1,345** | **957** |

### Adjusted EBITDA underlying business[1]

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 1,117 | 1,053 |
| Materials | 512 | 488 |
| Innovation Center | 8 | 9 |
| Corporate Activities | (105) | (105) |
| **Total** | **1,532** | **1,445** |

### Adjusted EBITDA

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 1,407 | 1,053 |
| Materials | 512 | 488 |
| Innovation Center | 8 | 9 |
| Corporate Activities | (105) | (105) |
| **Total** | **1,822** | **1,445** |

### Adjusted EBITDA margin underlying business[1]

| in % | 2018 | 2017 |
|---|---|---|
| Nutrition | 19.5 | 18.9 |
| Materials | 17.6 | 17.3 |
| **Total** | **17.3** | **16.7** |

### Adjusted EBITDA margin

| in % | 2018 | 2017 |
|---|---|---|
| Nutrition | 22.9 | 18.9 |
| Materials | 17.6 | 17.3 |
| **Total** | **19.7** | **16.7** |

[1] Underlying business is excluding temporary vitamin effect.
See table on next page.

## ROCE underlying business[1]

| in % | 2018 | 2017 |
|---|---|---|
| Nutrition | 14.7 | 14.1 |
| Materials | 20.6 | 20.0 |
| **Total** | **13.3** | **12.3** |

## ROCE

| in % | 2018 | 2017 |
|---|---|---|
| Nutrition | 19.9 | 14.1 |
| Materials | 20.6 | 20.0 |
| **Total** | **16.8** | **12.3** |

## Capital employed at 31 December

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 5,683 | 5,420 |
| Materials | 1,878 | 1,786 |
| Innovation Center | 597 | 562 |
| Corporate Activities | 23 | (2) |
| **Total** | **8,181** | **7,766** |

## Workforce at 31 December

| headcount | 2018 | 2017 |
|---|---|---|
| Nutrition | 13,628 | 13,676 |
| Materials | 4,643 | 4,635 |
| Innovation Center | 701 | 685 |
| Corporate Activities | 2,005 | 2,058 |
| **Total** | **20,977** | **21,054** |

## Capital expenditure

| x €million | 2018 | 2017 |
|---|---|---|
| Nutrition | 463 | 407 |
| Materials | 132 | 124 |
| Innovation Center | 32 | 43 |
| Corporate Activities | 26 | 12 |
| **Total, accounting based** | **653** | **586** |
| Non-cash items | 2 | (39) |
| Customer funding | (9) | (1) |
| **Total, cash based** | **646** | **546** |

## R&D expenditure (including associated IP expenditure)

| | x €million | | as % of net sales[1] | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Nutrition | 206 | 219 | 3.6 | 3.9 |
| Materials | 122 | 130 | 4.2 | 4.6 |
| Innovation Center | 67 | 75 | 38.9 | 44.1 |
| Corporate Activities | 3 | 20 | 7.1 | 33.9 |
| **Total** | **398** | **444** | **4.5** | **5.1** |

[1] Net sales from underlying business

## Temporary vitamin effect

| x €million | Animal Nutrition & Health | Human Nutrition & Health | Total[1] Nutrition | Total[2] DSM |
|---|---|---|---|---|
| Net sales | 3,134 | 2,019 | 6,137 | 9,267 |
| One-time vitamin effect | 385 | 30 | 415 | 415 |
| Sales from underlying business | 2,749 | 1,989 | 5,722 | 8,852 |
| Adjusted EBITDA | | | 1,407 | 1,822 |
| One-time vitamin effect | | | 290 | 290 |
| Adjusted EBITDA underlying business | | | 1,117 | 1,532 |

[1] Including other Nutrition businesses not impacted by the vitamin effect
[2] Including other DSM businesses not impacted by the vitamin effect

# Nutrition

**#1**

Supplier of vitamins, nutritional lipids, carotenoids, nutraceutical ingredients and custom nutrient premixes

**>40%**

Of human nutrition sales come from custom nutrient premixes, market-ready solutions and direct-to-consumer products

**47**

Animal nutrition premix facilities +15 human nutrition premix facilities

**>70%**

Of our skin care portfolio is more than 90% of natural origin

**#1**

Supplier of lactase enzymes for lactose-free dairy

**€ 5,722[1]**

**€ 6,137**

Net sales versus € 5,579 in 2017 (in millions)

**+7%[1]**

**+14%**

Organic sales growth versus 2017

**19.5%[1]**

**22.9%**

Adjusted EBITDA[2] margin versus 18.9% in 2017

2 ZERO HUNGER | 3 GOOD HEALTH AND WELL-BEING | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | 13 CLIMATE ACTION | 14 LIFE BELOW WATER

[1] Excluding temporary vitamin effect, see table on page 65.

[2] See page 174 for reconciliation to EBITDA.

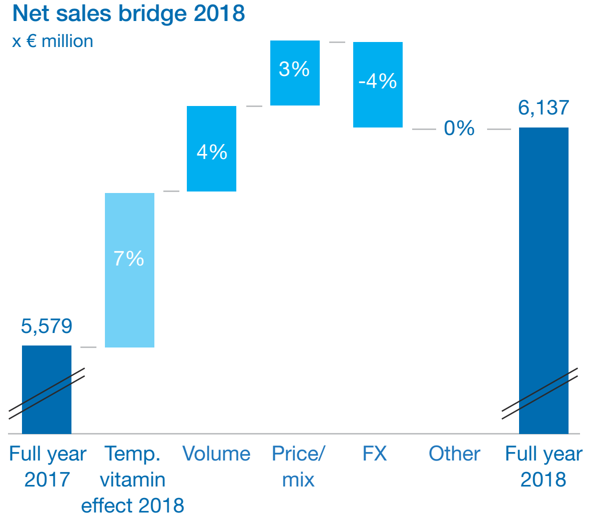
| x € million | 2018 Total | 2018 Underlying business[1] | 2017 |
|---|---|---|---|
| Net sales: | | | |
| DSM Nutritional Products: | | | |
| - Animal Nutrition & Health | 3,134 | 2,749 | 2,660 |
| - Human Nutrition & Health | 2,019 | 1,989 | 1,939 |
| - Personal Care & Aroma Ingredients | 382 | 382 | 353 |
| - Other[2] | 112 | 112 | 86 |
| | 5,647 | 5,232 | 5,038 |
| DSM Food Specialties | 490 | 490 | 541 |
| **Total** | **6,137** | **5,722** | **5,579** |
| Organic sales growth (in %) | 14 | 7 | 8 |
| Adjusted EBITDA | 1,407 | 1,117 | 1,053 |
| Adjusted operating profit | 1,111 | 821 | 770 |
| Capital expenditure | 463 | 463 | 407 |
| Capital employed at 31 December | 5,683 | 5,683 | 5,420 |
| ROCE (in %) | 19.9 | 14.7 | 14.1 |
| Adjusted EBITDA margin (in %) | 22.9 | 19.5 | 18.9 |
| R&D expenditure | 206 | 206 | 219 |
| Workforce at 31 December (headcount) | 13,628 | 13,628 | 13,676 |

[1] Excluding temporary vitamin effect, see table on page 65
[2] Other covers pharma and custom manufacturing & services activities

## Business

Our Nutrition cluster comprises DSM Nutritional Products and DSM Food Specialties. This cluster provides solutions for animal feed, food and beverages, pharmaceuticals, early life nutrition, nutrition improvement, dietary supplements and personal care. Our company is positioned in all steps of the feed and food value chains: the production of pure active ingredients, their incorporation into sophisticated forms and the provision of tailored premixes and forward solutions. Our unique portfolio of products and services is global and highly diversified, serving customers and other stakeholders locally across various end-markets around the world.

## Nutrition cluster performance




In Nutrition, we benefited from a temporary vitamin effect caused by an exceptional supply disruption in the industry. Adjusted for the total estimated temporary vitamin effect of €415 million (mainly in Animal Nutrition & Health), our underlying organic growth was up 7% compared to 2017, with €5,722 million sales. Volumes were up 4% from the previous year and above-market growth. The price growth of 3% was partly offset by a negative foreign currency impact. Conditions were good across most regions and market segments in 2018. The Adjusted EBITDA from underlying business was up 6% from 2017, to €1,117 million. The Adjusted EBITDA margin from underlying business was 19.5%, versus 18.9% over 2017.

Total Nutrition sales increased by 10%, to €6,137 million (compared to €5,579 million in 2017), including a total estimated €415 million temporary vitamin effect. The total Adjusted EBITDA was up 34% to €1,407 million, benefiting from a total estimated €290 million temporary vitamin effect.

Over the strategic period, Nutrition continued to deliver on its aspired above-market growth ambition and further leveraged our unique global products & local solutions business model, supported by marketing and sales excellence and customer-led innovation.

## Trends

The world is facing an increasing number of food-related health issues and challenges. According to the UN Food and Agriculture Organization (FAO), more than 800 million people go hungry to bed each night. The International Food Policy Research Institute (IFPRI) estimates that approximately two billion, meanwhile, suffer from hidden hunger — meaning that their diet lacks sufficient micronutrients such as vitamins and dietary minerals. IFPRI additionally puts the number of adults and children who are obese or overweight at more than 2.3 billion.

With our nutritional solutions, we are well positioned to actively combat malnutrition in all its forms: undernutrition, hidden hunger, overweight, obesity and the double burden of malnutrition (the coexistence of undernutrition with overweight and obesity), as well as diet-related non-communicable diseases. We have established numerous partnerships in this field, including those with WFP, UNICEF, Vitamin Angels and World Vision. We are also addressing malnutrition through the humanitarian organization *Sight and Life* and our dedicated Nutrition Improvement business segment — specialized in supplementation programs and fortification of staple foods and therapeutic or emergency foods with essential vitamins and minerals in developing countries.

We are also addressing antimicrobial resistance (AMR) through our broad portfolio of nutritional products, including our eubiotics.

Finally, with our nutritional solutions, we play an important role in helping to repair the world's food systems. This is essential, as we are witnessing the transgression of several planetary boundaries in the agri-food sector.

Whereas earlier generations struggled primarily with the threat of communicable diseases such as tuberculosis, cholera and plague, non-communicable diseases (NCDs) are now the number one cause of death worldwide, accounting for 70% of all mortalities. These include cardiovascular disease, type 2 diabetes and cancer. Research increasingly identifies unhealthy and/or unbalanced diets as a major contributor to many NCDs. Intermediate indicators that can be related to an increased risk of NCDs are elevated levels of markers such as increased blood pressure, Body Mass Index (BMI) and high blood glucose. Balanced nutrition plays a role in keeping these indicators at healthy levels, hence helping to reduce the risks of NCDs. Besides solutions to reduce sugar and salt in processed foods, we also produce OatWell®, a nutritional ingredient that harnesses the scientifically-proven health benefits of oat beta-glucan to reduce cholesterol levels.

WHO predicts that antimicrobial resistance (AMR) is expected to overtake NCDs by 2050 as the world's leading cause of death. WHO defines AMR as the ability of a micro-organism (such as bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. AMR is on the increase due to the over-prescription of antibiotics, the continued use of antibiotics in some livestock farming operations, and the release of antibiotics into the environment from pharmaceutical factories. At DSM, we address the topic of AMR and the responsible use of antibiotics in livestock production through our broad portfolio of nutritional products, such as our eubiotics for gastrointestinal functionality.

Environmental scientists warn that we are on the verge of going beyond the limits of several planetary boundaries if we do not change our food system, risking people's livelihoods and the ability to produce the food for all. These concern 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. We work with customers and other stakeholders to deliver more sustainable solutions that have less impact on the environment, especially in Animal Nutrition & Health. For example, our enzymes help animals improve digestion and extract more nutritional value from feed. That way, they still grow well even when they eat less. As a result, fewer natural resources, such as land and water, are needed for animal protein production.

Consumers are becoming increasingly selective about where their food comes from and how it is produced. There is a growing worldwide trend in favor of natural and plant-based foods, including viable alternatives to animal-sourced foods (meat, fish and dairy). Running counter to this trend, there is also a simultaneous growth in global demand for animal-sourced foods, with clear regional differentiation. We aim to help consumers choose in favor of sustainably produced and healthy nutrition by providing tasty, enjoyable food and supporting initiatives. We also enable and produce sustainable proteins, both animal- and plant-based.

### Sustainability & Innovation

Sustainability is one of the key drivers of our Nutrition cluster. Our nutrition businesses support many of the UN Sustainable Development Goals (SDGs), especially SDGs 2, 3, 12 and 13.

We are proud of our strategic partnership with the UN World Food Programme (WFP), which we extended for another three years. We have partnered with WFP since 2007 to develop cost-effective, sustainable and nutritious food solutions for those in need. In 2017, over 39.4 million people benefited from improved nutrition through WFP. Thanks to our expertise in nutrition and food fortification, WFP has improved its food basket and developed more nutritious food products for disadvantaged people around the world. These products include Super Cereal and Super Cereal Plus (complementary foods), ready-to-use supplementary foods, high-energy biscuits, micronutrient powders such as MixMe™, and fortified rice. We also provide funding for WFP's operations and motivate employees to engage in fundraising campaigns and awareness-raising initiatives for WFP's school meal programs. Finally, we combine our strengths to put local networks in place that ensure sustainable and increased access to more nutritious food as an essential part of healthy diets. Together, we are helping people survive and thrive.

In addition to our work on hunger, malnutrition, health and well-being, our innovations are increasingly focused on improved sustainability throughout the product lifecycle and the value this can bring to customers and society at large.

For example, in 2018 we introduced Balancius™, a broiler feed ingredient that helps to facilitate digestion and the absorption of nutrients from the diet. We also made significant progress in Veramaris®, our joint venture with Evonik to produce the omega-3 fatty acids EPA and DHA from natural marine algae as an alternative to fish-oil-based omega-3. In 2018, we also continued our work on Project Clean Cow to develop a feed solution that helps reduce methane emissions from cows by at least 30%. Methane is a potent greenhouse gas that makes a significant contribution to climate change. Ruminants such as cows are responsible for approximately 27% of anthropogenic methane emissions globally (see 'Animal Nutrition & Health' on page 70).

After a successful initial market introduction in North America in mid-2018, we accelerated our large innovation project for fermentative Stevia by establishing a joint venture with Cargill, as announced last November. Stevia is a zero-calorie, cost-effective sweetener that can substitute sugar in food and beverages. In personalized nutrition, we announced a strategic partnership with digital health company Mixfit and became their largest shareholder. This collaboration unites our expertise in micronutrients with Mixfit's proprietary technology, creating the ability to analyze health data in real time (see 'Human Nutrition & Health' on page 71).

Governments around the world are focusing increasingly on the environmental footprint of their domestic industries. In recent years, China in particular has tightened the enforcement of its environmental regulations, also known as its 'Blue Skies' policy. This policy addresses air, soil and water pollution and sets significantly higher standards than before, including those standards applicable to China's many small and medium-sized vitamin manufacturers. The result is a more level playing field for non-Chinese competitors versus these manufacturers.

We have been a very reliable player in this market, able to support customers through this period of uncertainty while at the same time being a frontrunner in compliance. In 2018, we invested € 50 million to upgrade our vitamin C facilities in Jiangshan (Jiangsu Province, China), improving environmental performance and enhancing worker safety. This commitment goes beyond simply meeting legislative requirements to set new sustainability standards, allowing brands that use our products to make eco-friendly positioning claims. We are also in the process of introducing a natural gas-fired plant, following a strategic agreement on steam and electricity supply as part of the province's aim of reducing the number of coal-fired power plants to meet 2020 targets.

## Strategy

Our Nutrition cluster has unparalleled access to customers thanks to our global network and our ability to customize formulations for local markets, especially through our premix solutions. This cluster is active in more than 60 countries. Our strategy accelerates growth by focusing on four key areas:

- Expanding our core
- Adding new products and solutions
- Expanding in new segments and regions
- New business models

We have been expanding our core by adding new premix facilities to our global network. Two new facilities for Animal Nutrition & Health were opened in Peru and India in 2018, while in Human Nutrition & Health we started the development in Poland of the world's only premix site serving the maternal and infant nutrition market exclusively.

In terms of adding new products and solutions, the launch of Balancius™ represents a major breakthrough in animal nutrition. Optimizing gastrointestinal functionality is crucial for efficient feed utilization, for example in poultry farming. Many other examples of new products and solutions can be found throughout this chapter.

Expanding into new segments and regions is also a key part of our Nutrition strategy. In 2017, we acquired BioCare (Denmark) and added probiotics to our gut health offering. We completed the integration of this business during 2018.

Our fourth growth area, new business models, mainly represents our drive to move further down the value chain, closer to consumers and farmers. A growing proportion of our Human Nutrition & Health revenue now comes from custom nutrient premixes, market-ready solutions and direct-to-consumer products that address diverse health or lifestyle benefits. For Animal Nutrition & Health we introduced an app through which Chinese farmers and suppliers can place orders, track inventories and monitor feed quantities, as well as being able to check pork prices.

Across our nutrition businesses, we continue to work on operational and commercial excellence. In 2018, we started a program in DSM Nutritional Products to create a more customer-centric and cross-functional organization. Our key cross-functional capabilities, such as customer care and supply chain, have been elevated and strengthened. We are moving toward becoming more collaborative through new ways of working. We have aligned customer-centric KPIs across the organization. All of these measures result in tangible business impact on key metrics, such as on-time in-full (OTIF), delivery, speedy complaint handling (CIRT) and inventory levels.

Furthermore, we fully implemented our new market-segment approach in Human Nutrition & Health (i.e. pharma, dietary supplements, food & beverage, early life nutrition, medical nutrition, nutrition improvement). In addition to the regional geographic focus, these global market segments have been designed to drive even greater customer intimacy and growth, while at the same time providing insights to key innovation needs for the future.

Within our Animal Nutrition & Health business we started a similar improvement program in 2018, called acCElerate, aimed at commercial excellence and amplifying the customer experience.

At the start of 2018, our DSM Food Specialties business adopted a customer-centric organizational structure, switching from a product-led to a market-focused model for our commercial operations.

In June 2018, we communicated our updated Strategy 2021. More detail on our Nutrition strategy can be found in the 'Strategy 2021' chapter on page 22.

We take a balanced view of our business, and therefore as we seize opportunities, we also manage risks. For more information on how we manage risks, see 'Risk management' on page 118.

## DSM Nutritional Products

In 2018, an exceptional supply disruption in the industry positively impacted our sales. We have estimated a temporary vitamin effect of €415 million additional sales, mainly in Animal Nutrition & Health. Excluding this temporary vitamin effect, in the so-called underlying business, we achieved organic growth of 7%, with strong volumes, up 4% as well as price growth of 3%, supported by good conditions across most regions and market segments. DSM Nutritional Products had total sales of €5,647 million in 2018, including the estimated temporary vitamin effect, a 12% increase compared to €5,038 million in 2017.

### Animal Nutrition & Health

**Highlights 2018**

- Strong organic growth
- Launch of Balancius™, the world's first microbial muramidase
- Expansion of premix network with new facilities in Peru and India
- Integration of Dutch premixer Twilmij
- Creation of Veramaris® and construction of new production site in Blair (Nebraska, USA)

In 2018, the Animal Nutrition & Health business benefited from a total estimated temporary vitamin effect caused by exceptional supply disruptions in the industry. In the underlying business, organic growth was up 8% compared to the previous year. Volumes were up 4% and prices were also up 4% from the previous year. Business conditions were favorable in almost all regions. Sales to Brazil were softer due to temporary shutdowns mainly driven by strikes in the second quarter. Prices were supported by initiatives to mitigate higher input costs of sourced ingredients and the impact of negative foreign currencies, as well as by the effects of the 'Blue Skies' policy in China.

We continued to benefit from our strategy of addressing a wide range of species, as well as from our diversified global presence, with our unique portfolio and forward-integrated premix solutions.

Including the total estimated temporary vitamin effect, total sales were €3,134 million in 2018 compared to €2,660 million in 2017. This good growth was achieved against a tough comparative year.

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 eubiotics and feed enzymes. Population growth and rising incomes are driving demand for animal protein. Our products help producers of animal feed and meat, including farmers, to raise animals more efficiently and sustainably.

Our swine business showed solid growth in 2018. The impact of African swine flu was largely mitigated by growth in other segments. Poultry also performed quite well compared to 2017. Higher consumption, driven by attractive prices and the diversity of the end-products derived from poultry, was the main driver for the poultry industry's growth.

Our gut health strategy continued to stimulate sales of eubiotics for gastrointestinal functionality in 2018. Sales of these products enjoyed strong growth for the second consecutive year.

Our Crina® range of essential oils saw strong demand in key markets in 2018. Crina® Poultry Plus was complemented by the launch of Crina® Digest, a unique and cost-effective combination of three essential oil compounds with a novel controlled release technology. Crina® Poultry Plus is the market-leading solution, combining a unique and complementary blend of essential oil compounds with nature's most efficient organic acid (benzoic acid), to modulate the microbiota and stimulating the secretion of digestive enzymes. Crina® Digest was introduced in EMEA and will be expanded to other geographies over time.

In September, we announced the launch of Balancius™, a major breakthrough in animal nutrition. Optimizing gastrointestinal functionality is crucial for efficient feed utilization, for example in poultry farming. Balancius™ is a naturally occurring muramidase, an enzyme that removes bacterial debris from the gut and significantly increases feed efficiency and digestibility. Balancius™ is currently registered for broilers in Brazil, Argentina, Chile, Colombia, Costa Rica, Mexico, the US, Bangladesh, Pakistan, India, South Africa and Nigeria. Registration in the EU is to follow in 2019.

In the ruminant sector, the beef market saw significant growth opportunities in the US, Eastern Europe, Asia, Argentina and Brazil. In 2018, our core portfolio registered strong growth, stimulated by the vitamins market and the reinforcement of our positioning of Hy-D® in the vitamin D segment through the recent approval of Hy-D® Ruminant in the US. Hy-D® is a vitamin D3 metabolite that supports bone development, muscle formation and immune response. Having been successfully used in poultry and swine, it is now being extended to ruminants.

The aquaculture business also showed strong growth in 2018, driven by the continued increase of salmon consumption in the end-markets.

In the pet food industry, the increasing trend to treat pets as part of the family has driven up product standards through the use of more expensive functional ingredients, which has translated into higher pricing. Marketing and product labeling trends are mirroring those observed in human nutrition and consumer goods. These trends are driving growth in the US, Europe, and Japan especially.

In terms of our regional presence, our business enjoyed strong growth in Asia Pacific during 2018, led by South East Asia. In October, we expanded our operations in India with the opening of a second Animal Nutrition & Health premix plant in Jadcherla (India). By opening this facility, we underline our commitment to meeting the global feed industry's need for innovative and sustainable solutions. It testifies to our growing global presence.

We saw continuous growth in China, with a strong focus on digital solutions, driven by Chinese tech companies entering the farming business.

In Latin America, we continued to invest in our premix network, opening a new premix plant in Lurín, near Lima (Peru).

In EMEA, our biggest region, western Europe remained a solid source of revenue, capitalizing on the integration of Twilmij. Our business also enjoyed growth in southern Europe, with increasing penetration in Northern Africa and a portfolio expansion in the Middle East.

In North America, we captured the growth opportunities created by the vitamins market.

In 2018, we launched a holistic multi-year transformation program called acCElerate to further strengthen our market position and sustain our organic above-market growth track-record.

In 2018, we made significant progress in Veramaris®, our joint venture with Evonik to produce the omega-3 fatty acids EPA and DHA from natural marine algae as an alternative to fish-oil-based omega-3. Norwegian salmon producer Lingalaks AS has started to replace fish oil by feeding 50 percent of their salmon a diet which includes omega-3 oil produced by Veramaris®, in order to ensure greater sustainability and differentiation of their products.

We also made good progress with Project Clean Cow, our new, highly innovative, feed solution that reduces methane emissions from cattle by more than 30%. We have successfully gathered the data needed to apply for regulatory approvals in our targeted launch markets for this project.

## Human Nutrition & Health

**Highlights 2018**

- Strong year, continued good sales across regions and segments, especially in dietary supplements
- Acquisition of a significant equity stake in Mixfit
- Start of construction of world's only premix site exclusively serving early life nutrition market
- Integration of BioCare, our probiotic expert

Human Nutrition & Health reported sales of €2,019 million in 2018 versus € 1,939 million in 2017. Our Human Nutrition &

Health business delivered a strong year, with 7% organic growth and 4% volume growth. All regions and segments continued to perform well, with especially strong growth in dietary supplements, i-Health and the pharma segment. Early life nutrition showed solid performance in all regions. Construction started on our second premix solutions facility in Poland, which will be exclusively dedicated to the maternal and infant nutrition market. Sales to food & beverages continued to develop well, driven by tailored multiple-ingredient premix solutions, supported by marketing & sales excellence and local application know-how.

Human Nutrition & Health provides solutions for the food & beverage, dietary supplements, early life nutrition, medical nutrition, nutrition improvement and active pharmaceutical ingredient (API) markets. We serve these industries with vitamins, nutritional lipids, carotenoids, nutraceuticals and custom nutrient premixes. i-Health — a global consumer health and wellness company and subsidiary of DSM — develops, markets and distributes branded products that support health and wellness. Core categories include probiotics, healthy aging, and urinary health.

Our increasingly customer-centric way of operating was a key factor behind the growth of our sales during 2018. We delivered this result via market-segment-focused, customer-intimate, strategic market plans.

> “ In 2018, we once again demonstrated our ability to organically outgrow our markets and further improve our margins thanks to our unique business model and an increasing focus on customer-centricity.”
>
> **Chris Goppelsroeder, DSM Executive Committee and President & CEO DSM Nutritional Products**

Our business is also moving closer to the consumer in the value chain, focusing more intensely on the business-to-consumer and personalized nutrition sectors. A growing proportion of our revenue — more than 40% — now comes from custom nutrient premixes, market-ready solutions and direct-to-consumer products that address diverse health or lifestyle benefits.

Our collaboration with digital health company Mixfit to deliver personalized nutrition solutions unites our expertise in micronutrients with Mixfit's proprietary technology, creating the ability to analyze health data in real time. In May, Mixfit launched the prototype of its Intelligent Nutrition Assistant (Mina). Mina analyzes a person's genetic makeup, diet, lifestyle and health goals to create and dispense beverages containing a customized mix of our vitamin and mineral Quali®-Blends throughout the day. In July, we became Mixfit's largest shareholder. The US launch of Mixfit is scheduled for the second quarter of 2019.

In April, we made an investment in Tespo, a US-based start-up that offers consumers a simpler way to take vitamins by providing these in a pill-free, liquid format dispensed at home.

During the year, we also acquired a venturing stake in Biomarker Labs. The Biomarker app streamlines health information from practically any wearable, sensor, lab or health app to measure any dietary supplement brand to tell what's working, and what is not.

In August, we announced plans for the world's only premix manufacturing facility created exclusively for the maternal and infant nutrition market. Located in Buk (Poland) at our existing premix site, the investment is expected to double production output at the site within the next two years. The design incorporates several advanced technologies that reflect the specialist needs of the early life nutrition market.

Following the addition of probiotics to our gut health offering via the acquisition of BioCare in December 2017, we integrated this business. BioCare is now our probiotic expert, providing a 360-degree experience to customers.

### Personal Care & Aroma Ingredients

**Highlights 2018**

- Above-market growth in both personal care and aroma ingredients
- Implementation of new business unit strategy based on three key growth drivers
- Launch of new innovations in skin and sun care

Sales were €382 million in 2018, from €353 million in 2017, up 8%, with very strong 11% organic growth, partly offset by 3% less favorable currencies. All personal care product lines, including sun, skin and hair care, delivered good above-market growth, while aroma ingredients performed very strongly in 2018. Successful commercialization of the innovation pipeline further contributed to a very good year for the business.

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.

Building on strong growth during 2017, we enjoyed continued growth in both personal care and aroma ingredients in 2018, outpacing the market across all segments. Leveraging three main growth drivers — strategic initiatives in core segments, commercialization of our innovations, and external partnerships — we implemented our new business unit strategy during 2018. Underpinned by a heightened focus on operational excellence and sustainability, this strategy aims to further accelerate our growth.

In 2018, we launched BEL-EVEN™, a patented synthetic molecule that helps counteract the damaging effects of stress on skin by inhibiting the enzyme that generates cortisol in the skin. We also unveiled new research on SYN®-HYCAN, a patented cosmetic tripeptide with scientifically proven volumizing and firming benefits for all key facial zones.

We also introduced a new grade of vitamin B3 — Niacinamide PC, guaranteed to contain less than 100 ppm residual nicotinic acid, making it exceptionally well tolerated. Proprietary research by DSM revealed that it could prove to be a powerful ally in the latest challenges facing the beauty industry: environmental pollution and ubiquitous blue light.

In line with our long-term commitment to transparency, we obtained well-known certifications such as COSMOS and NATRUE, and more than 45% of DSM's portfolio is of natural origin according to the recently introduced ISO 16128 standard on definitions for natural ingredients. To address the growing interest in natural products, we launched DSM's House of Naturals — an easy-to-use navigation aid that offers customers clarity about the degree of natural origin in our ingredients. Almost half of our Personal Care & Aroma Ingredients portfolio is of natural origin, and more than 70% of our skin care actives have a natural origin content in excess of 90%.

## DSM Food Specialties

**Highlights 2018**

- Good sales growth in hydrocolloids, enzymes and cultures
- New product introductions supporting health & wellness trends
- Growth in beverages and solutions for cheese
- Announcement of joint venture with Cargill to bring zero-calorie, cost-effective sweeteners to market faster

In 2018, total sales were 9% lower compared to 2017, due to the deconsolidation of Yantai Andre Pectin and negative currency effects. Good sales growth rates in hydrocolloids, enzymes and cultures were partly offset by soft sales in savory ingredients as a result of capacity limitations early in the year that prevented the business from fully capitalizing on the positive market conditions. This resulted in overall organic growth of 1%.

DSM Food Specialties is a leading global supplier of specialty food enzymes, cultures, probiotics, bio-preservation solutions, hydrocolloids, savory ingredients, and solutions for sugar reduction. Our ingredients and solutions are widely used to create a broad range of food products, from grocery favorites like yogurt, cheese and soups to specialized products including gluten-free bread and beer, meat substitutes, lactose-free milk, and sugar-reduced beverages.

Demand for our products is driven by five main market trends: sugar reduction, enhanced taste experience, improved health and wellness, bio-preservation, and food chain efficiency. With nearly 150 years of experience in biotechnology and fermentation for the food industry, we aim to enable better food for everyone, helping make existing diets healthier and more sustainable, and giving increasing numbers of people around the world access to affordable, quality food.

At the start of 2018, we adopted a customer-centric organizational structure at DSM Food Specialties, switching from a product-led to a market-focused model for our commercial operations. This aims to make us better aligned with customers and their needs in the dairy, baking, beverages, and savory industries we serve.

In dairy, we introduced Maxilact® Smart, the fastest-acting lactase enzyme on the market. Boosting throughput speeds enables customers to improve their efficiency in producing lactose-free or reduced-sugar products, for which consumer demand is growing worldwide. In support of the trend toward clean labels and away from chemical preservatives, we made our core range of cheese enzymes completely benzoate-free.

In baking, legislation in Europe imposed benchmark levels of acrylamide in baked goods and snacks due to health concerns. This drove demand for our PreventASe® enzyme, which we supported with the introduction of PreventASe® XR, a solution created to deliver improved efficacy in applications such as corn chips, biscuits and crackers.

One of the important trends underpinning our good performance in beverages is the drive by many of the world's leading brewers to reduce their environmental footprint, in particular to lower greenhouse gas emissions. Our enzymatic solutions — including Brewers Clarex® and Brewers Compass®, which enable significant energy savings — are consequently in high demand.

Solutions such as ModuMax™ enable food and beverage producers to deliver an enjoyable taste experience in low-sugar, low-salt, and low-fat applications by creating a fuller mouthfeel and masking negative off-notes. Customer traction for this innovative taste modulator continued to grow during 2018.

One of our major innovation programs over recent years has been the development of fermentation-derived steviol glycosides — the sweet-tasting, zero-calorie molecules from the stevia plant. After a successful initial market introduction in North America in mid-2018, we accelerated our large innovation project for fermentative 'Stevia' by establishing a joint venture with Cargill, announced in November. Stevia is a zero-calorie, cost-effective sweetener that can substitute sugar in food and beverages.

Another growth platform in specialty food ingredients 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. Demand for hydrocolloids, especially our natural hydrocolloids, is driven by three underlying consumer trends:

- The quest for convenient foods and beverages
- Consumers' increasing demand for dairy- and plant-based protein drinks
- The trend toward clean labeling

Our hydrocolloids are primarily delivered in the form of pectin and bio-gums. Both are used as gelling and stabilizing agents in a variety of foods and beverages. Our natural hydrocolloids are enjoying strong sales growth.

In July 2018, we restarted production in DSM Rainbow Biotechnology (DRB), a company in which we acquired a majority equity stake in September 2017, thereby further increasing our gellan gum capabilities and expanding into other bio-gums such as xanthan and welan. Following the completion of the transaction, the site was shut down so that we could execute a series of upgrades to improve its safety, health, quality and environmental standards. With these investments, DRB will substantially improve the robustness of its operations, as well as the reliability and quality of its products and supply. DRB in future will work closely with our other bio-gums site, DSM Zhongken Biotechnology, as well as with the new Innovation Center, both in Tongxiang (Zhejiang Province, China).

# Meeting growing demand for sustainable animal protein

As the world's population grows, global demand for poultry meat is on the increase. With the global population projected to reach 9.8 billion by 2050, it is anticipated that 470 million tons of meat will need to be produced each year, much of it from broiler chickens.

At the same time, consumers are looking for high-quality, affordable animal protein and sustainably produced food, as part of a healthy and balanced diet. Farmers are therefore seeking ways to increase efficiency while reducing the environmental impact of their operations and also ensuring animal health and welfare.

These challenges require game-changing nutritional solutions. Traditionally, livestock farmers have used interventions including medication that target living bacteria in the gut, either modulating their population or killing them. Our new feed ingredient Balancius™ – the latest innovation from our industry-leading Alliance with Novozymes – takes a different approach by targeting dead bacteria in the gut.

A unique, proprietary, patented technology, Balancius™ is the first and only microbial muramidase (an enzyme that breaks down the bacterial cell wall fragments) to do this. Supplementing the broiler diet with Balancius™ improves digestion and nutrient absorption, thus helping farmers to get more from their feed and also to reduce greenhouse gas emissions.

"Together, DSM and Novozymes have developed a solution that contributes to the growth and welfare of animals by removing bacterial cell debris from the chicken's gut. No other technology works like this," says Susanne Palsten Buchardt, Vice President at Novozymes for Animal Health & Nutrition Commercial. "It's a game-changing innovation based on our 20-year Alliance with DSM."

### Purpose

Adding Balancius™ to the diet of a broiler flock numbering one million birds saves potentially 125,000 kg of feed. Using Balancius™ in all broiler diets across Latin America and North America – the two regions where Balancius™ has been launched to date – could save an estimated 4.2 million tons of greenhouse gas emissions annually.

### Performance Driven

Enzymes and eubiotics are key components for sustainable animal production, and this market is expected to grow by 5–7% per year over the next decade.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

# Creating the foundations for health and well-being

The diversity of the micro-organisms inhabiting the gut – known collectively as the microbiome – is an important foundation for a healthy life, playing a critical role in the development of a robust immune system.

Consumer interest in gut health is on the increase. Probiotics are now taken by growing numbers of health-conscious consumers to support the immune system, digestive health, and even newer areas such as mental health.

Many health conditions, including intestinal disorders and obesity, are characterized by an imbalance in, or impairment to, the microbial colonies that inhabit the gut. Clinical studies suggest that the consumption of probiotics can help balance the microbiome, combating the adverse effects of these conditions.

Our Nutrition business is widely present in the gut health value chain. We make ingredients (such as probiotics, digestive enzymes and vitamins), develop market-ready customized solutions (through our recently acquired and fully integrated probiotic expert BioCare), and deliver end-to-end business-to-business services for owners of consumer brands, from initial concept to finished product.

“We are distributing supplements and medical device products from BioCare,” states Karl Parance, CEO at Laboratoire Immubio. “BioCare has proven to be a highly reliable, supportive and competent partner in all spheres of interaction. Thanks to their profound expertise and innovative capabilities, we have enjoyed very strong growth within the probiotic market.”

At DSM we also own the Culturelle® and up4® consumer brands, which form a part of our i-Health division. i-Health – a global consumer health and wellness company and a subsidiary of DSM – develops, markets and distributes branded products that support health and wellness, including digestive health and immunity. Culturelle® is the world’s number one probiotic brand, trusted for the safe and effective contribution it makes to digestive, immune, and overall health and well-being. Culturelle® meets the needs of consumers from babies to adults, and is the probiotic most frequently recommended by pediatricians and pharmacists.

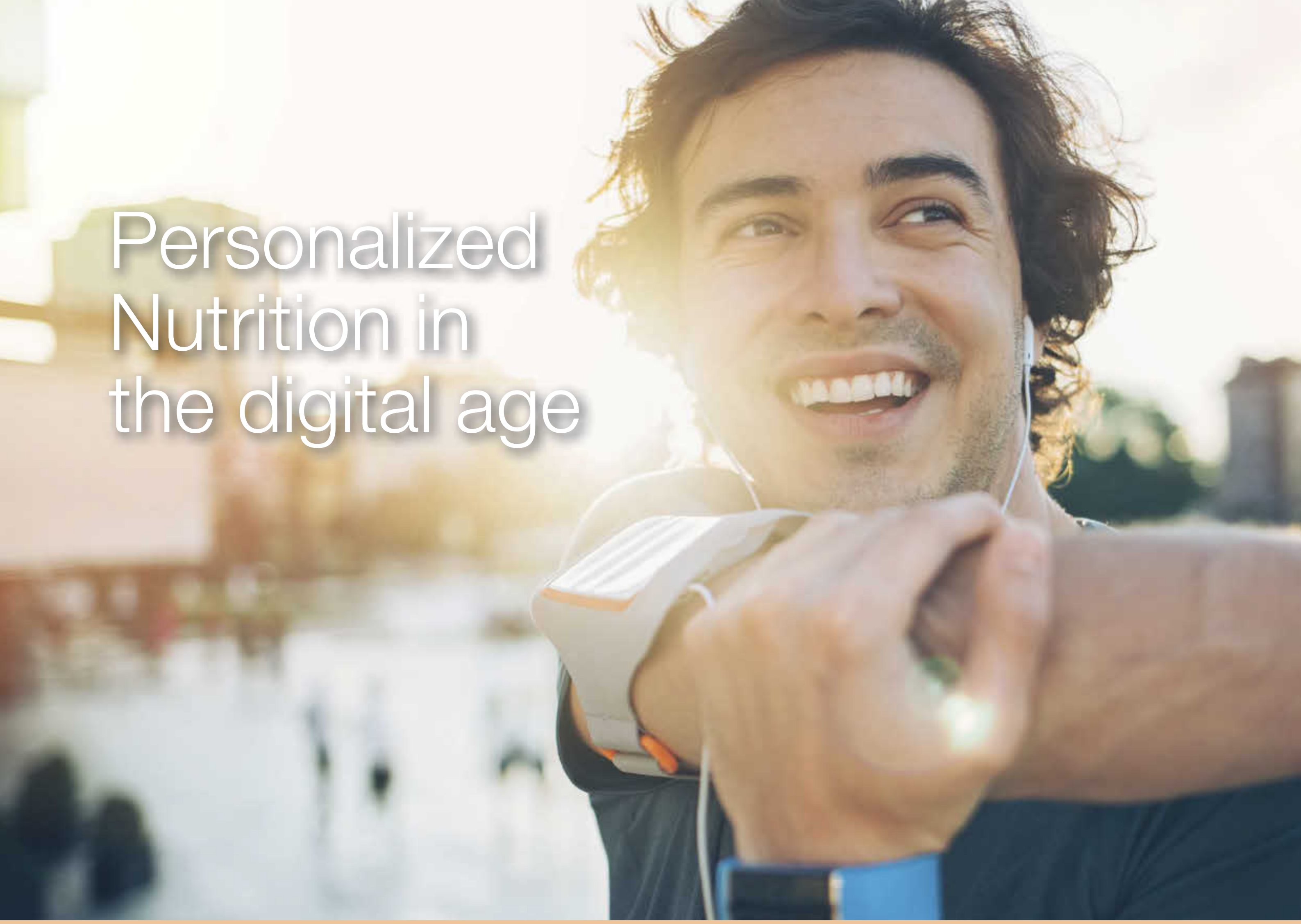
### Purpose

Our experience and expertise allow us to develop a wide range of gut health solutions to help microbiome diversity, which is a foundation for a healthy life.

### Performance Driven

The market for probiotic products is growing by 7–8% annually. The value-adding inclusion of probiotics in mainstream foods, beverages and nutritional supplements presents attractive opportunities for us as an integrated supplier of ingredients to consumer brands.

3 GOOD HEALTH AND WELL-BEING



# Personalized Nutrition in the digital age

Vitamins, nutritional lipids and minerals are essential for human health and well-being. However, most people worldwide do not meet the recommended intake levels. Also, more and more people are being diagnosed with diseases that are largely preventable by a balanced and nutritious diet. In the face of this trend, personalized nutrition offers consumers tailored nutrition and advice that may be more beneficial than mass-produced solutions.

As a trusted authority on nutrition science and a leader in research on the role of micronutrients in human health, we partner with companies that possess the capabilities to create easy-to-use personalized nutrition solutions. In 2018, we entered into several such partnerships. Here we focus on two highlights.

The first is with digital health company Mixfit, creator of the first ever in-home, connected personalized nutrition device to provide consumers with a convenient, tasty, daily beverage customized to their needs. This contains an individually blended mix of our vitamin and mineral Quali®-Blends. “Consumers need to feel that the solution fits into their lives,” observes Reza Zanjani, CEO of Mixfit. “And it has to show that what they are consuming is improving their health.”

The second is with Macuwell™, a supplier of eye health solutions to opticians in Germany. Eye health education – based on fast, accurate diagnostic measurements – is key to a high-quality consultation. Macuwell™ helps opticians improve eyecare standards by offering Macular Pigment Optical Density testing and providing eye health nutritional supplements and protective eyewear. At DSM, we have a range of ingredients beneficial to eye health. Together with Macuwell™, our Nutrition Academy has developed live training, e-learning videos and tutorials to support opticians.

## Purpose

Our partnerships in personalized nutrition help individuals take responsibility for their health, reducing their exposure to a wide range of non-communicable diseases and helping to lower healthcare costs.

## Performance Driven

Various estimates project annual double-digit growth for the personalized nutrition segment. Strong consumer pull and the rapid evolution of enabling technologies are fueling this trend.

3 GOOD HEALTH AND WELL-BEING

# Omega-3 rich in EPA and DHA from natural marine algae

Fish is an important source of nutrition. Three billion people today rely on marine fish for food. Oily fish – and especially salmon – is also a rich source of the two essential omega-3 fatty acids EPA and DHA, which are vital for brain, eye and heart health.

Spiraling demand for seafood and the consequent pressure on overfishing has fueled the growth of fish farms. Aquaculture, however, compounds the burden on wild fish stocks, since 20% of the wild catch is used to make feed for farmed fish and 75% of all fish oil produced is currently fed to farmed fish. In response to a limited, finite availability of fish oil along with soaring demand for seafood, the level of omega-3 EPA and DHA fatty acids in salmon has declined by more than a half over the past decade. This development is not supportive for consumers looking for a healthy food option.

DSM and Evonik have joined forces to create Veramaris® and developed the technology to produce high-quality omega-3 from the natural marine algae which are part of the marine food chain. Through this technology, we are able to reduce the aquaculture industry's reliance on the world's finite fish oil resources for these vital omega-3 fatty acids. Veramaris® is a sustainable alternative source of omega-3 fatty acids rich in both EPA and DHA. One ton of Veramaris® algae-based omega-3 oil provides the equivalent amount of omega-3 EPA and DHA to that of 60 tons of wild-caught fish.

In June 2018, Veramaris® held a topping-off ceremony for its new production facility in Blair (Nebraska, USA). While pilot quantities are available now from two sites, commercial quantities of algal oil are scheduled for delivery to customers in 2019.

### Purpose

By including algal oil containing EPA and DHA in fish feed, we help to conserve wild fish stocks and enable the aquaculture industry to grow sustainably.

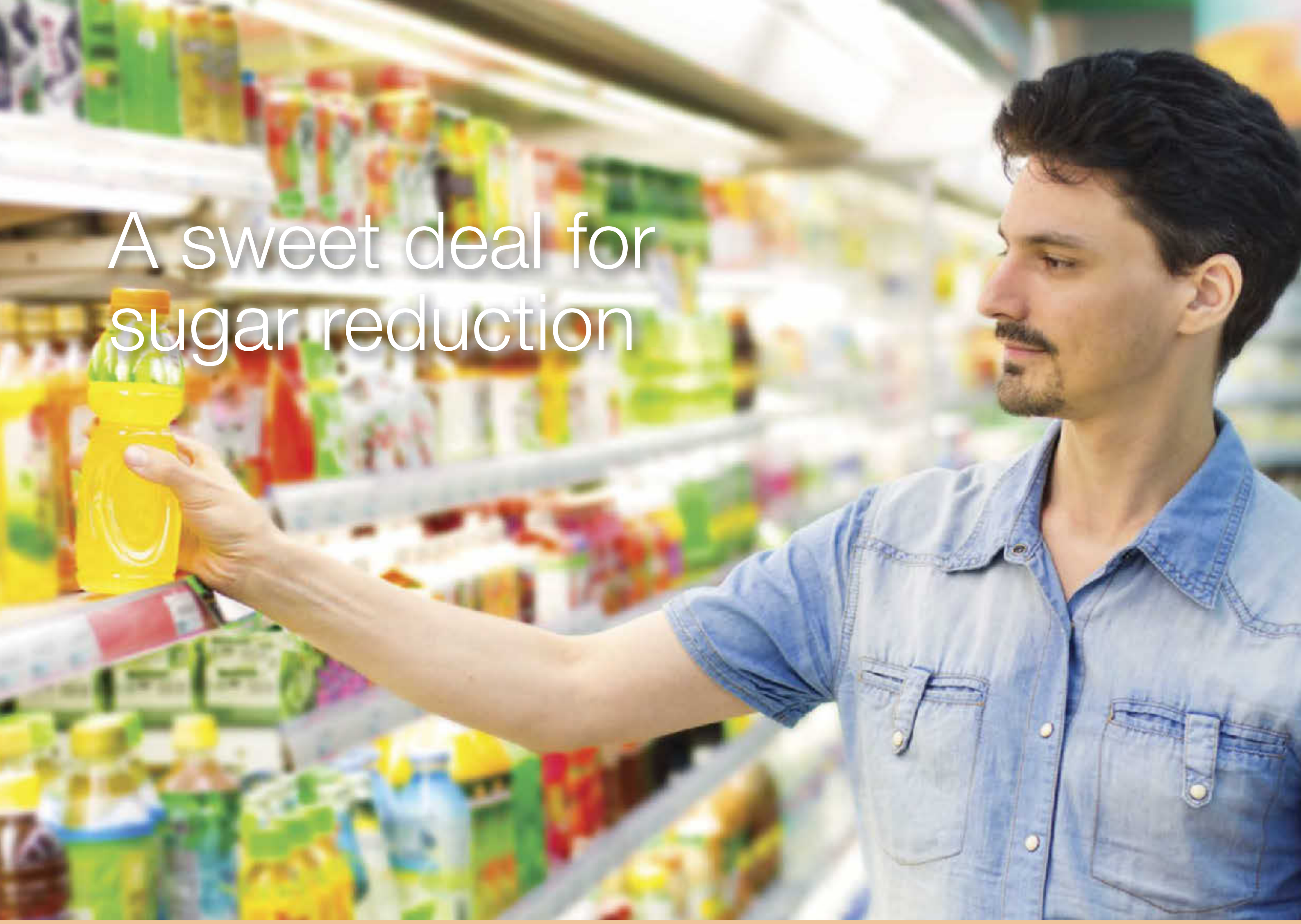
### Performance Driven

The Veramaris® plant's initial annual production capacity will meet approximately 15% of the salmon industry's total current yearly demand for omega-3 EPA and DHA fatty acids.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

14 LIFE BELOW WATER

# A sweet deal for sugar reduction



One of the most significant transformations in the global food and beverage sector today is the drive to reduce sugar levels. The World Health Organization (WHO) recommends that no more than 10% of our total daily calorie intake should come from free sugars in order to reduce the risk of overweight, obesity and tooth decay.

Obesity increases the risk of several non-communicable diseases (NCDs). According to WHO, 1.9 billion adults and nearly 400 million children and adolescents were overweight or obese in 2016, with the number of obese youngsters having increased tenfold in the past 40 years.

In 2018, Cargill and DSM announced a 50:50 joint venture, Avansya, to rise to this challenge. Together, the companies will produce sweet-tasting, zero-calorie sweeteners such as the steviol glycosides Rebaudioside M and Rebaudioside D (Reb M, Reb D). Steviol glycosides occur in the sweet-tasting leaves of the stevia plant. Avansya's products will be produced by fermentation, a process using less land, water, and energy than extraction from stevia leaves. The products will be marketed under the brand name EverSweet™. Working together will leverage both companies' highly complementary strengths to bring sugar reduction solutions to market faster and more effectively.

"The demand for sugar-reduction solutions is urgent, global, and growing fast," says Chris Simons, Cargill Vice President Food Segment North America. "While consumers are searching out foods and beverages that help meet their dietary needs or goals, brand owners know that great taste can't be compromised. By partnering with DSM, we can further advance a commercialized Reb M and Reb D product line that offers what consumers desire."

## Purpose

We are committed to enabling better food for everyone within planetary boundaries. Our ingredients and application know-how help food and beverage companies deliver better-for-you versions of the products and brands consumers love, with less added sugar.

## Performance Driven

The market for high-intensity sweeteners produced by fermentation is expected to exceed €3 billion by 2025. Avansya is well positioned to secure a significant sales potential in this market.

3 GOOD HEALTH AND WELL-BEING

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

# Staying safe with sun protection

Many consumers underestimate the power of the sun and are unaware of the protective powers of sunscreens. Moreover, they do not enjoy applying sun cream, nor do they like the feeling of having it on their skin. Consequently, many people in the world today are not receiving adequate sun protection.

Skin cancer rates have been increasing for decades. In the US, for instance, people have a 20% chance of developing skin cancer by the age of 65. In fact, every 53 minutes someone dies from skin cancer in the country.

Two main factors are contributing to the rise in skin cancer. One is that people do not apply sunscreen in sufficient quantities. The other is that they do not use sunscreens as regularly as they should. Skin cancer is preventable, however.

Our unique portfolio of UV filters and sensory modifiers makes it easy for consumers to protect themselves against skin cancer. We offer the industry's broadest range of UV filters – the active ingredients that prevent UV rays from penetrating the skin and causing damage.

We have unparalleled expertise in formulating UV filters to provide optimum UV protection. Our UV filters go beyond the traditional boundaries of skin protection by tackling the blue light spectrum – a short-wavelength type of light that may accelerate skin aging. We also have the sensory modifiers to make sun products that feel light and pleasant on the skin.

We work continually with our customers to create products that make sun protection more appealing as well as more effective, so that they can become part of everyone's daily routine.

## Purpose

With our unique portfolio of UV filters and sensory modifiers, we aim to make sunscreens more effective and appealing to protect people against the suffering associated with skin cancer.

## Performance Driven

The global market for sunscreens was estimated at USD 10.5 billion in 2017. Research indicates that people who use sunscreens apply only a fifth of the recommended amount, meaning that the potential of this market is much greater.

3 GOOD HEALTH AND WELL-BEING

# Taking action on climate change together

Around the world, dairy and beef cattle are an important source of milk and protein. They are also an essential source of income for farmers and local communities. However, along with its clear nutritional and socio-economic benefits, cattle farming also generates a substantial environmental footprint. In fact, an estimated 14.5% of all human-caused greenhouse gas (GHG) emissions come from livestock, with nearly 65% of this figure originating from dairy and beef cattle.

A large proportion of livestock emissions come from enteric (burped) methane, as a result of the natural digestive processes of cows. Whereas the GHG carbon dioxide remains in the atmosphere for centuries, methane warms the planet far more quickly. Over a period of 20 years, the global warming potential of methane is an astounding 84 times higher than that of $CO_2$.

Some years ago, we decided to take the lead in exploring practical solutions for reducing ruminant enteric methane emissions. After extensive research, our scientists came up with the answer. Through our Project Clean Cow, we have developed a proprietary feed supplement (3-NOP) that inhibits the enzyme which is responsible for producing methane in the rumen of the cow. Peer-reviewed studies by independent scientific institutions have shown that 3-NOP has the ability to consistently reduce enteric methane by approximately 30% for dairy and beef cattle, if delivered at the recommended dose.

## Purpose

By helping to reduce the methane impact of cattle farming, we are also helping to solve the global sustainability challenge of how to supply consumers with sufficient animal protein in a way that minimizes harmful emissions.

## Performance Driven

Our solution is designed to help the dairy and beef value chain (farmers, cooperatives, brands and retailers) to lower their carbon footprint while also meeting growing consumer demand for sustainable products. In addition to preparing for the market introduction of the feed supplement, we are working with key players and influencers across the value chain to shape a more sustainable, low emission future. The potential market for innovative solutions like 3-NOP is estimated at € 1–2 billion.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

# Vitamins and lipids for better patient care

The rapid growth and aging of the world's population and the accompanying increase in non-communicable diseases (NCDs) are continuously driving up healthcare costs. NCDs such as cardiovascular disease, cancer, type 2 diabetes and multiple sclerosis (MS) are consequently a major focus for the innovation efforts of the global pharmaceutical industry. We have a unique portfolio covering the complete range of API (active pharmaceutical ingredients) grade vitamins and lipids, used as API intermediates. This allows our customers to use vitamins and lipids in pharmaceutical products for over-the-counter, prescription, and specialty designations. With more than 70 years of experience in the manufacture of high-quality vitamins, we provide all 13 vitamins approved for use in pharmaceutical applications and are the only company in the world to do so.

In 2018, our biotin (vitamin B7) became the core API for MD1003, also known as Qizenday, a formulation drug candidate of high-dose pharmaceutical-grade biotin for the treatment of progressive multiple sclerosis (MS). Developed by MedDay, Qizenday is currently undergoing evaluation in a large-scale clinical trial. We are the sole approved provider of the pharma-grade biotin for Qizenday.

MedDay is a pioneering global biopharmaceutical company investigating abnormal brain metabolism in order to develop novel therapies addressing neurological diseases. "Our lead candidate, Qizenday (MD 1003) is being developed for treatment of progressive forms of multiple sclerosis," explains Amine Tahiri, Director Pharmaceutical Affairs at MedDay. "DSM is our key partner for manufacturing the API for Qizenday. We are excited to continue developing our close partnership with DSM, which is helping to bring additional therapies to patients with high unmet medical needs."

### Purpose

Our vitamin and lipid solutions have an established role as APIs to address emerging therapeutic areas, benefiting global patient health.

### Performance Driven

The pharmaceutical market for vitamin and lipid APIs is growing at a rate of 6% per year and is predicted to be worth approximately USD 900 million by 2022.

3 GOOD HEALTH AND WELL-BEING

# Materials

**100%**

Renewable electricity commitment to produce products to supply Apple

**90%**

Reduction in VOC emissions when switching from solvent to waterborne coatings

**#1**

Supplier of fiber optic coatings

**~30**

Million hands protected by gloves made with Dyneema®

**€ 2,913**

Net sales versus € 2,825 in 2017 (in millions)

**+5%**

Organic sales growth versus 2017

**17.6%**

Adjusted EBITDA[1] margin versus 17.3% in 2017

3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

[1] See page 174 for reconciliation to EBITDA.

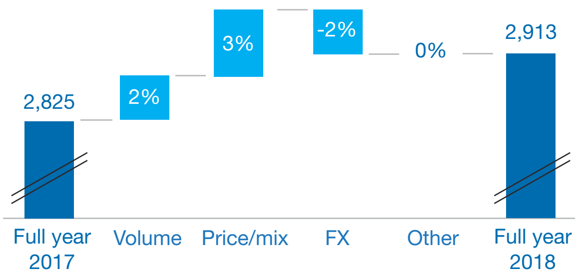
| x € million | 2018 | 2017 |
|---|---|---|
| Net sales: | | |
| DSM Engineering Plastics | 1,516 | 1,448 |
| DSM Dyneema | 344 | 332 |
| DSM Resins & Functional Materials | 1,053 | 1,045 |
| **Total** | **2,913** | **2,825** |
| Organic sales growth (in %) | 5 | 13 |
| Adjusted EBITDA | 512 | 488 |
| Adjusted operating profit | 383 | 361 |
| Capital expenditure | 132 | 124 |
| Capital employed at 31 December | 1,878 | 1,786 |
| ROCE (in %) | 20.6 | 20.0 |
| Adjusted EBITDA margin (in %) | 17.6 | 17.3 |
| R&D expenditure | 122 | 130 |
| Workforce at 31 December (headcount) | 4,643 | 4,635 |

“ We are future-proofing our Materials business by focusing on higher-growth and higher-margin applications in Sustainable Living.”

**Dimitri de Vreeze, DSM Managing Board**

**Net sales bridge 2018**

x € million




## Business

DSM's Materials cluster comprises DSM Engineering Plastics, DSM Dyneema and DSM Resins & Functional Materials. DSM is a global player in specialty plastics for the electrical components and electronics, automotive, flexible food packaging and consumer goods industries. Our portfolio also includes Dyneema®, the world's strongest fiber™, for protective solutions and commercial marine applications, as well as resins for use in paints, industrial applications and optical fiber coatings, Niaga® technology for circular design, and advanced materials for additive manufacturing/3D printing applications.

## Materials cluster performance

In 2018, Materials reported 5% organic sales growth, driven by an increase of 2% in volumes and 3% in prices, mainly reflecting commercial pricing initiatives aimed at offsetting higher input costs.

The Adjusted EBITDA was up 5%, driven by good volume growth and our continuing shift toward a specialty portfolio, and despite a negative foreign exchange effect. This 'silent transformation' was also reflected in the 2018 Adjusted EBITDA margin of 17.6%, versus 17.3% in 2017.

## Trends

The main growth drivers of our Materials cluster are sustainability and changing societal needs.

The worldwide demand for more sustainable solutions is redefining how these systems will operate in the future. Advanced materials with ever higher performance levels will be required across a wide range of applications.

For example, the future of transportation will require more complex and higher-performing materials for emerging autonomous, lightweight and more energy-efficient automotive designs. Materials are also playing a role in renewable energy generation and storage, 3D printing, more sustainable packaging and advanced healthcare applications.

One example is the use of plastics in cars. In the 1950s, plastics accounted for 1% of a car's weight. Today, they represent nearly 12% of a car's weight. That percentage is expected to grow to 15% by 2030, as designers and engineers find an increasing number of applications in which metal can be replaced by plastics.

At the same time, consumers are increasingly seeking 'smart' connected and customized products and services that call for new types of performance materials. For example, 3D printing is disrupting the business value chain as its capabilities evolve beyond prototyping to embrace mass production. This new technology is finding transformational applications in many fields. The demands placed on healthcare systems are steadily rising. Medical and technological advances, spiraling complexity and the accelerating integration of electronics combined create new performance requirements for materials to be used both inside and outside the body.

In more and more industries, circular economy topics such as recycling and the use of bio-based materials are receiving increasing attention. For example, in Europe alone, the carpet industry generates 1.6 million tons of carpet waste annually, of which 60% ends up as landfill, 37% is incinerated and only 3% is recycled. Across the value chain, consumer sentiment and regulatory pressure are driving a shift toward materials designed for a circular economy — materials that are bio-based, reusable, recyclable and bio-degradable.

Additionally, people everywhere are increasingly aware of safety, including safe manufacturing and product safety. DSM Engineering Plastics and DSM Resins & Functional Materials offer solutions that eliminate or reduce the use of hazardous substances in plastics and paints. The safety trend also includes a greater focus on personal safety. Dyneema® reduces the weight burden on people handling heavy weight steel chains and wires. It is also ideal for applications in protective apparel for sports, outdoor recreation, law enforcement and first responders.

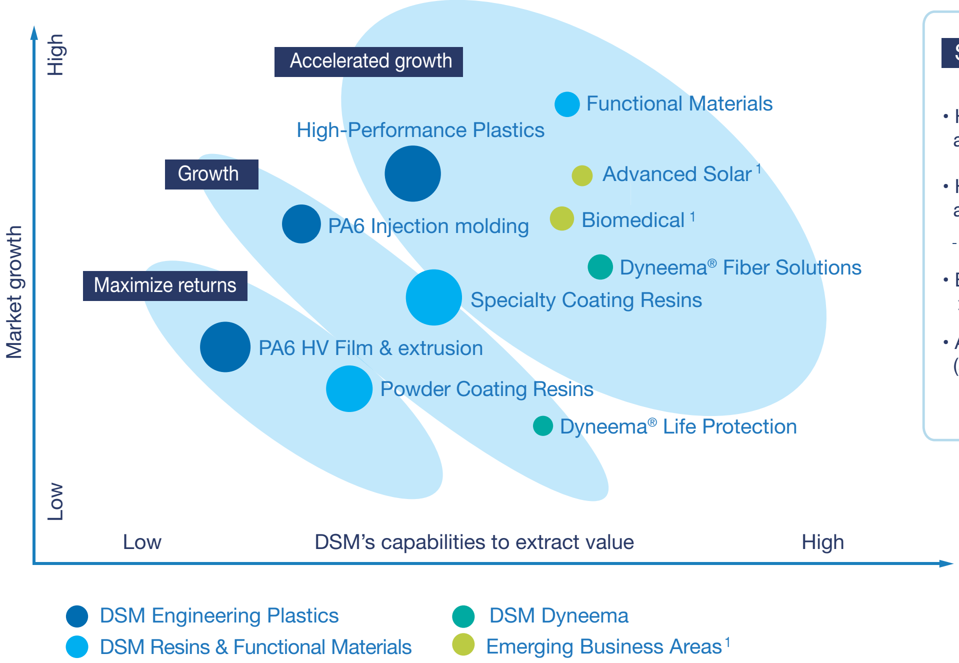
### Sustainability & Innovation

Increasingly, our innovation projects address solutions for a more circular economy. DSM-Niaga technology, with which we are enabling fully recyclable carpets, mattresses and furniture components, is an excellent example. For more information on Niaga®, see 'DSM Resins & Functional Materials' on page 89.

At the same time, demand for renewable energy technologies such as solar, wind and water are stimulating the development of new performance materials. Several renewable energy technologies contain Dyneema® as a key enabler, including tidal and wind energy.

As an example of customer-centric cross-sector collaboration and innovation, in 2018, DSM became a member of ARENA2036 (Active Research Environment for the Next Generation of Automobiles), the leading technology platform for mobility in Germany. ARENA2036 is the initiator of sustainable automotive engineering and automobile production for the next generation of vehicles and a platform in which both suppliers, customers and research institutes participate.

Our DSM Materials Science Center, a cross-company platform for state-of-the-art know-how, has led to a growth of our innovation capabilities in 2018. This Science Center has also improved collaboration of both our running Materials businesses and our Biomedical and Advanced Solar Emerging Business Areas (EBAs), part of the 'DSM Innovation Center' on page 97.




**Strategy 2018 aspirations**

- High single-digit percentage annual Adjusted EBITDA growth
- High double-digit basis point annual ROCE growth

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- EBITDA margins > 15% over the period
- Above-market sales growth (at stable prices)

[1] While not part of the cluster, the Emerging Business Areas of DSM Biomedical and DSM Advanced Solar are also related to Materials and represent promising growth platforms for the longer term.

## Strategy

We continued to apply a differentiated portfolio strategy to drive growth. For our portfolio of innovative, high-performance plastics, functional materials and high-performance fiber solutions, we accelerated growth. For our established portfolio of specialty resins, engineering plastic compounds, and solutions for life protection, we realized stable growth. For our more mature portfolio of PA6 film and extrusion and powder coating resins, we maximized returns by means of efficient product and process management.

Our businesses targeting accelerated growth and growth developed at above-average growth rates for their respective markets in 2018, delivering above-average profitability, see picture above.

In 2018, our new, integrated approach with one dedicated business for our additive manufacturing activities became effective, as outlined in 'DSM Resins & Functional Materials' on page 89.

We take a balanced view of our business, and therefore as we seize opportunities, we also manage risks. For more information on how we manage risks, see 'Risk management' on page 118.

## DSM Engineering Plastics

**Highlights 2018**

- Strong organic growth in high-performance plastics
- New approaches to support the circular economy launched and well received
- Joined Apple's Clean Energy Program

DSM Engineering Plastics had total sales of € 1,516 million in 2018 compared to € 1,448 million in 2017. DSM Engineering Plastics delivered a solid performance in 2018, with 7% organic growth. After a strong first half to the year, automotive demand in China and Europe as well as markets for mobile devices in Asia started to soften. There was also some destocking in the value chain at year-end. Business conditions in other segments remained robust.

DSM Engineering Plastics addresses the key market trends in automotive and electronics. In addition to serving the automotive and electronics sectors, we provide solutions to specialized industries that address a range of evolving consumer and societal needs. Examples of application areas are water management, power distribution, outdoor power equipment, and multilayer flexible food packaging.

The quest for new forms of mobility is a key driver for our business today. We create products that help reduce the weight of vehicles, lower the friction generated by moving vehicle parts, and support the transition from fossil fuel to electric automotive power. DSM is one of the world's largest suppliers of high-temperature polyamides, polyamide 6 and thermoplastic co-polyesters. These products find applications in the automotive industry in applications such as powertrain, auto electronics and electricals, as well as in interior and exterior design and functionality.

The other key trend shaping our business in engineering plastics is the rapidly growing demand for connectivity between products, devices and applications. We have a strong track record in the consumer electronics industry as well as the automotive industry, with our materials being used extensively in connections in mobile devices such as smart phones.

During 2018, we continued to shift our portfolio toward higher-value, specialty materials with advanced grades and improved properties.

Our engineering plastics business enjoyed strong organic growth in 2018. This was achieved by growing in under-penetrated categories and regions, as well as exploring new business models to access new market segments in 3D printing and advanced composites. Continuing the positive trajectory of 2017, market uptake was strong for ForTii® Ace, our breakthrough metal substitute high-temperature polyamide, and for EcoPaXX® PA410, the bio-based polyamide with the highest melting-point in the world.

We increased the number of differentiated grades in our various product lines, offering high performance in areas as diverse as thermal conductivity, electromagnetic interference shielding, laser direct structuring compatibility, halogen-free flame retardancy and hydrolysis resistance.

We also launched new approaches in support of the circular economy. These included the introduction of Akulon® RePurposed, a polyamide 6 made from recycled fishing nets, and an exploration of APK's Newcycling® route of multi-layer, flexible food packaging films.

We joined Apple's Clean Energy Program. This involves a commitment to transition to 100% renewable electricity in the manufacture of materials for Apple's products. Our full commitment will be met by the end of 2019.

## DSM Dyneema

**Highlights 2018**

- Very strong performance in the personal protection market
- Investment to increase global Dyneema® production capacity
- Successes in partnerships for renewable energy solutions

DSM Dyneema had a very strong performance throughout 2018, with 6% organic growth, driven by continued high demand in personal protection. Construction of new production lines began in the US and the Netherlands to fulfil the growing demand, especially in law enforcement.

Our Dyneema® business is driven by our customers' and end-users' need for lightweight, sustainable solutions that offer improved safety and ergonomics as well as durability. Dyneema® products typically replace traditional materials such as steel and aramid.

The world's strongest fiber™, Dyneema® is 15 times stronger than steel on a weight-for-weight basis, 40% stronger than aramid, and floats on water. This combination of extreme strength, lightness and high durability makes it suitable for a wide and expanding range of applications. Products made with Dyneema® provide an environmental and/or societal benefit compared to their mainstream counterparts.

We are the only global and backward-integrated producer of ultra high molecular weight polyethylene (UHMWPE) products. Approximately 30 million hands are protected by gloves made with Dyneema®, while more than one million people trust their lives with protection made with Dyneema®.

During 2018, we continued our strategy of expanding into existing market segments and applications by offering a range of innovative, unique and patent-protected technologies. Examples include:

- Dyneema® Force Multiplier Technology for comfortable, ultra-light-weight ballistic protection
- Dyneema® Diamond Technology, which offers increased cut protection and comfort for heavy-duty gloves
- Dyneema® Max Technology for offshore deep-water crane ropes and synthetic chains

Besides benefiting from continuing strong uptake for Dyneema® Force Multiplier Technology / Dyneema® UD (Uni-Directional laminate), we enjoyed strong demand for Dyneema® fiber during 2018.

We have been investing in additional capacity to better serve global customer demand. New production lines are being added in the Netherlands as well as in the US, which will both be fully on stream in 2019. In addition, we are investing to expand the capacity of existing lines by incorporating the latest technologies.

The year was also characterized by successes in the field of sustainability, including partnerships for renewable energy solutions with, for example, Ampyx (wind energy), Minesto (tidal energy) and Principal Power (floating wind platform). Other applications for Dyneema® include ropes that anchor floating wind platforms to the seabed and ropes that connect a tethered aircraft to a generator on the ground to generate airborne wind energy.

We are a partner of The Ocean Cleanup, an ambitious mission to rid the world's oceans of plastic. The Ocean Cleanup launched its first barrier for testing in September 2018. We make our facilities, knowledge, and networks available to our partners in this initiative, and also supply our Dyneema® fiber, an excellent material for tough marine environments.

Applications made with Dyneema® already deliver the lowest carbon footprint for the performance specified from cradle to grave compared to other materials, and we are committed to further improve on this. Our plants in Greenville (North Carolina, USA), and Heerlen (Netherlands) already use 100% electricity from renewable sources.

## DSM Resins & Functional Materials

### Highlights 2018

- Very good performance in functional materials business, 2% organic growth overall
- New applications for Niaga® launched with partners Auping and ECOR
- Sustainability efforts in developing waterborne coatings and inks recognized by partners

DSM Resins & Functional Materials reported sales of € 1,053 million in 2018 compared to € 1,045 million in 2017. DSM Resins & Functional Materials faced a gradual slow-down in the building and construction markets in 2018, resulting in 2% organic growth for the year. In the fourth quarter, we saw some destocking, especially in powder coating resins. Functional Materials delivered another very good year, reflecting strong demand for these high-margin materials used in data infrastructure.

We are a global leader in the development and production of waterborne, UV and powder coating resins. These products offer clear sustainability advantages over solvent-borne resins traditionally used in paints and coatings. In functional materials, we are the global leader in fiber-optic coatings. In additive manufacturing (3D printing), we offer highly efficient and effective prototyping technologies which help the industry accelerate the pace at which new products are designed and brought to market.

Our fiber optics business grew significantly compared to the previous year, driven by the continuing rapid expansion of fiber optic networks, while our packaging coatings and inks business exhibited mid single-digit growth.

Together with our customers and value chain partners, we are helping to build a more sustainable future. As legislation continues to drive down the use of harmful substances such as volatile organic compounds (VOCs), our growth comes from anticipating changing end-user preferences and offering innovative waterborne, powder and UV resins to replace solvent-borne products. In addition, we aim to reduce our carbon footprint in all our own activities, and in the raw materials we purchase. Our resins give our customers the opportunity to develop safe and low-carbon footprint alternatives to mainstream solutions. For example, we are developing circular economy alternatives to traditionally manufactured carpets and mattresses to help combat the growing global problem of landfilling with our Niaga® technology.

Niaga® carpet solutions have been extended beyond 100% polyester materials to create a fully recyclable DUO carpet. The proprietary Niaga® adhesives enable separation of raw materials into their separate material streams at the end of each useful life. Fifteen pilot projects have been installed featuring Niaga® carpet and rug solutions throughout Europe.

Niaga® design philosophy is being applied to categories beyond carpet, as showcased in two product collaborations. Together with Royal Auping, DSM-Niaga has redesigned mattresses for circularity, with the first 100 mattresses under evaluation. DSM-Niaga and ECOR have successfully produced laminated panels combining ECOR's cellulose fiber converting technology and Niaga® adhesive and lamination tools. The first laminated panels for furniture, desk and building applications were produced in the fourth quarter.

We intensified our focus on 3D printing in 2018 by establishing a dedicated business unit for Additive Manufacturing, which includes stereolithography, digital light processing, fused filament fabrication, selective laser sintering, multi-set fusion, ink jet and binder jet processes. By combining these technologies, we are better able to harness the potential of this fast-developing market.

The new Additive Manufacturing unit addresses four market segments — healthcare, transportation, sports and lifestyle, and electronics — and cultivates partnerships with major players in the value chain. In 2018, partnerships were announced with Ultimaker and Chromatic 3D Materials, among other companies. We also launched a 100% recyclable filament, which offers a unique combination of extreme flexibility and prolonged high-temperature resistance for the 3D printing of demanding industrial and end-use applications.

In January 2018, we launched a special series of resins, Skins®, introducing a new element for graphic and packaging design: touch. These resins enable a wide range of feel opportunities for food and non-food packaging irrespective of the substrate — coated or uncoated paper, board, plastics or aluminum. As such, these surfaces can be transformed into packaging that gains sensory attention and positively affects consumer behavior.

In April 2018, we joined forces with Dynaplak to create a joint venture (DSM-Amulix) in bio-based and biodegradable seed protection to develop the next generation of seed protection coatings. Currently most seeds are covered with conventional non-degradable coating systems which contribute to the growing problem of microplastics in the environment. DSM-Amulix's seed coating solutions, by contrast, are safe, high-performing, and rapidly biodegradable.

Driven by our strong sustainability focus, we developed our partnership with PPG Industries. By integrating our plant-based resin platform Decovery® with PPG's proprietary technology, we have helped to develop a paint that purifies indoor air and removes formaldehyde. In 2018, we extended the scope of our collaboration and further optimized this technology in line with customer demands.

Another key collaboration development in 2018 was our partnership with Hewlett-Packard. We were chosen to develop next-generation waterborne digital printing inks and paperboard because of our recognized sustainability agenda.

Meanwhile in China we saw the positive effects of the 'Blue Skies' policy initiative to substitute solvent-borne coatings for waterborne coatings in sea container protection. Our waterborne coating solution is unique as its corrosion resistance outperforms the current solvent-based systems and reduces VOC emissions by almost 90%. Together with our partner Sherwin Williams, we control a meaningful share of the container coating business in China.

# Fully recyclable carpets and mattresses

Most of the bulkiest waste items in the world are made of complex combinations of materials glued together so as not to come apart. Mattresses, carpets and furniture, for example, eventually end up in landfill or else have to be incinerated as they cannot be recycled.

Every year, some 4.5 billion square meters of carpeting are wasted. That is enough carpet to wrap a 100-meter-wide strip of it around the equator, every year. Also, more than 50 million mattresses and a vast amount of furniture are wasted. In the US alone, carpeting consumes materials worth USD 6 billion annually. Exploring the potential benefits of re-using these materials to make new carpets was the inspiration behind DSM-Niaga.

Niaga®, which is 'again' spelled backward, focuses on the redesign of everyday products for full recyclability. We develop manufacturing technologies which are based on a maximum of two materials per product and connected with a reversible glue. These high-quality materials have no negative health impact and are designed to be recycled locally.

The purpose-led, circular-economy design thinking behind Niaga® has produced performance benefits which extend beyond recyclability alone. For example, Mohawk Industries is using Niaga® Technology to manufacture its hypoallergenic and easy-to-clean Air.0 carpet, while Royal Auping has developed a modular, easy-to-maintain mattress made of Niaga® for the hospitality industry.

Jan-Joost Bosman, CEO at Royal Auping, comments, "At Auping we create comfortable sleeping solutions for now and the future. We invest in sustainability and have the ambition to organize all our business processes, products and services in a circular manner. DSM is the perfect partner for us to build further on current achievements, based on their material science and drive for innovation."

### Purpose

Niaga® is proving the advantages of circular thinking, not only by reducing landfill and energy usage but also by improving consumer health.

### Performance Driven

The combined global market for carpets and mattresses is currently worth USD 51 billion. These markets are expanding at compound annual growth rates of 1–2% and 3–4% respectively. Sustainable Niaga® technology targets the replacement of these products with ones made from fully recyclable materials.

3 GOOD HEALTH AND WELL-BEING

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

# A cleaner future for China's shipping industry

China produces the vast majority of the world's shipping containers. These have traditionally been painted with solvent-borne coatings, which release volatile organic compounds (VOCs) that can be harmful.

As a top resin supplier to the waterborne paint market, we joined forces with other coatings players to form a collective called the Waterborne China Platform (WBCP). Chaired by DSM, WBCP's mission is to help China's coating industry make the transition to waterborne coatings, which contain up to eight times fewer VOCs than their solvent-borne equivalents.

As a result of this initiative, 99% of containers manufactured in China have been produced using waterborne coatings since April 2017. Annual VOC emissions have fallen by 140 kt since then. By facilitating the adoption of this new technology, we are helping to keep the air clean for people today and generations to come.

Peter Pui, Chairman of WBCP and Regional Director Asia Pacific-Specialty Coatings at DSM, comments, "Container manufacturers in China used to use VOC-containing solvents, which significantly contributed to the country's air pollution problem. The establishment of the WBCP has enabled stakeholders to acknowledge the negative health effects and climate impact of VOCs and to opt for more sustainable solutions."

## Purpose

As a global leader in this field, we are helping the Chinese shipping industry to reduce annual VOC emissions by leading the transition to waterborne container coatings.

## Performance Driven

Besides their use in the container industry, waterborne coatings have broad application uses in the field of furniture making and window frames. China's coatings industry is the largest in the world. In 2017 alone, it used more than 13 million tons of coatings, most of which were solvent-borne, for a wide range of industrial applications.

# Delivering sustainable mobility

Original Equipment Manufacturers (OEMS) are continuously looking for smart engine solutions to meet ever stricter automotive emissions standards. Our range of advanced engineering plastics with high heat and abrasion resistance and low friction helps our customers to reduce emissions from cars, combatting climate change while simultaneously complying with emission legislation.

For example, replacing just one metal component (the air intake manifold) with our Stanyl® Diablo can reduce $CO_2$ emissions by one gram for every 10 km driven.

This saving increases tenfold when Stanyl® is used for components to reduce friction in the combustion engine. Using Stanyl® for this purpose saves one gram $CO_2$ per km driven. If every new car registered in Europe, traveling on average 15,000 km per year, used Stanyl®, this would deliver an annual $CO_2$ emission reduction of approximately 225 kt.

To develop next-generation cars, OEMs have to re-imagine what is possible as two distinct industries converge – automotive and electronics, both of which we serve. Stanyl® has been specified for a wide range of automotive applications for three decades, while our materials are being used extensively in connections in mobile devices such as smart phones.

"We have applied Stanyl® HGR2 PA46 in valve timing chain systems, which leads to lower friction, fuel economy savings and a substantial reduction in greenhouse gas emissions," says Mr. Baddaria, Chief Engineering from BorgWarner.

### Purpose

With Stanyl®, we show how product quality and durability can go hand in hand with environmental benefits, making these an integral part of the value proposition.

### Performance Driven

Production of passenger cars and light commercial vehicles is growing by approximately 1 to 2% a year globally, while the use of engineering plastics in these vehicles is growing at approximately 5% a year.

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13 CLIMATE ACTION

# Innovation

## Accelerating the innovative power of our core business with breakthroughs such as:

Project Clean Cow:
feed additives for reduced methane emissions in cattle

Veramaris®: algae-based omega-3 for sustainable aquaculture

Niaga®:
technology for fully recyclable carpets

Fermentative Stevia:
for sugar reduction

**EVERY SECOND**

A patient receives a medical device containing a biomedical solution from DSM

**3%**

Yield improvement for ethanol producers who use our eBOOST™

**7,500 GWh**

Additional power generated due to our solar panel coatings

**19%**[1]

Innovation sales, in line with our ambition of ~20%

**4.5%**[1]

R&D expenditure as a % of sales

[1] Excluding temporary vitamin effect, see table on page 65.

## DSM Innovation Center

| x €million | 2018 | 2017 |
|---|---|---|
| Net sales | 172 | 169 |
| Organic sales growth (in %) | 5 | 3 |
| Adjusted EBITDA | 8 | 9 |
| Adjusted operating profit | (14) | (30) |
| Capital expenditure | 32 | 43 |
| Capital employed at 31 December | 597 | 562 |
| R&D expenditure | 67 | 75 |
| Workforce at 31 December (headcount) | 701 | 685 |

The DSM Innovation Center has two functions. The first is to help develop new business, focusing on areas outside the current scope of the company's business groups. The Innovation Center identifies and invests in new and innovative growth options, initially through the Business Incubator and then by developing and extracting value through the Emerging Business Areas (EBAs).

The Innovation Center's second function is to accelerate the innovation power and speed of our core businesses. In this role, it supports all DSM's businesses through the Excellence in Innovation Program, DSM Venturing, and the IP & Licensing department. In addition, the Chief Technology Officer, acting through the Science & Technology Department, ensures the quality of the total R&D competence base, including monitoring and ensuring access to early-stage technologies with disruptive potential through the Corporate Research Program.

In 2018, sales were up 2%, with 5% organic sales growth largely offset by a weaker US dollar. DSM Biomedical volumes were up, driven by strong sales in the drug delivery segment in the second half of the year. DSM Advanced Solar reported slightly lower volumes resulting from a slowdown in demand for solar panels following a policy change by the Chinese government to reduce the number of subsidized solar parks to be installed. DSM Advanced Solar introduced a new generation of solar backsheets which is being well received by the market. DSM Bio-based Products & Services made good progress in 2018, improving the robustness of the production technology for second-generation bio-ethanol and introducing a new generation of enzymes for first-generation bio-ethanol.

The Adjusted EBITDA was relatively stable compared with 2017. The Adjusted EBIT in 2017 included an impairment loss on the related assets.

Our innovation community also lays the groundwork for future opportunities by identifying rising stars within the current innovation pipeline and considering how longer-term, purpose-led innovation projects could offer solutions for Nutrition & Health, Climate & Energy, and Resources & Circularity.

### *Creating opportunities for future earnings growth through innovation*

In 2018, innovation sales across DSM amounted to 19% from sales from underlying sales, in line with our aspiration of around 20%. Furthermore, a strong and refocused innovation pipeline was created to enhance long-term growth. Examples include:

- Project Clean Cow for feed additives that reduce methane emissions from cattle
- Veramaris®, creating algae-based omega-3 for sustainable aquaculture
- Avansya, the fermentative Stevia sweetener platform
- Plant-based proteins for human nutrition
- Sustainable biological solutions for crop protection in agriculture
- Niaga® technology for fully recyclable carpets and mattresses
- eBOOST™, the newly developed yeast for ethanol production
- More efficient second generation coatings and 100% recyclable backsheets for solar panels

> “We are focused on delivering growth opportunities with innovation projects that address global challenges in Nutrition & Health, Climate & Energy, and Resources & Circularity.”

**Rob van Leen, DSM Executive Committee**

### *Enabling DSM's Bright Science*

The ability to deliver innovative products and solutions is essential to the success of our business and our positive impact on society. The Innovation Center plays a central role in guiding, enabling and accelerating innovation and R&D across the company.

R&D is instrumental to the realization of our innovation strategy. Most of our expenditure in this area is directed to business-focused programs that underpin our science-based, sustainable solutions.

**R&D expenditure (including associated IP expenditure)**

| x € million | **2018** | 2017 |
|---|---|---|
| Nutrition | 206 | 219 |
| Materials | 122 | 130 |
| Innovation Center | 67 | 75 |
| Corporate Activities | 3 | 20 |
| **Total** | **398** | **444** |
| Total as % of net sales underlying business[1] | 4.5 | 5.1 |
| Staff employed in R&D activities (total DSM) | 1,880 | 1,920 |

[1] Excluding temporary vitamin effect, see table on page 65

Our toolbox of scientific competences is grouped into seven areas: analytical, biological, chemical, engineering, macromolecular, materials, and nutritional sciences. These seven areas are key to our continued success. The Science & Technology department ensures that we have the right combination of skills, capabilities and partners to deliver on our competences.

We have more than 30 laboratories spread across ten countries, and our science network comprises more than 1,800 internal scientists, including 25 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 the Massachusetts Institute of Technology (MIT). See 'Innovation partnerships' on page 99.

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 80 industry networks, and more than 40 public-private partnerships (PPPs) in the fields of Nutrition, Health and Sustainable Living.

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, deep learning and modeling, as well as extending lab automation. These investments are accelerating our core processes and simultaneously increasing our operational efficiency.

We also continue to recognize, reward and nurture scientific talent. Through the Bright Science Awards, we team up with a number of leading scientific associations to reward excellence in PhD research in areas of particular interest to DSM. Winning a Bright Science Award gives PhD graduates not only financial recognition for their achievements, but also a platform to make a name for themselves in their chosen discipline. The program also helps participants make the vital connection between scientific achievement and commercial and industrial success — an increasingly important consideration.

At DSM, we regularly connect with our international Scientific Advisory Board. Acting under the supervision of the Chief Technology Officer, the 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 six 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 450 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 250 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 Heeger Professor for Interdisciplinary Science at the University of California, Santa Barbara (USA). He has co-authored over 530 scientific papers and holds more than 70 US patents. Nationality: Australian. |
| Kirk Klasing (m) | Distinguished Professor of Avian 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 200 peer-reviewed publications, 10 books and eight awards to his name for his work in poultry nutrition. 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. |
| 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. |

### DSM Venturing

DSM Venturing invests in innovative companies in areas strategically relevant to our current and future businesses. Every year, DSM Venturing reviews more than 500 new candidates. In 2018, we made a record number of nine new venturing investments and generated several collaboration leads between startups and businesses at DSM. At the end of 2018, the Venturing portfolio amounted to 30 startups (2017: 25). We completed several exits, including a significant financial exit from Essential Medical.

For more information on DSM Venturing, see the company website.

### IP & Licensing

IP & Licensing is a global group of qualified IP professionals who protect DSM 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.

In 2018, DSM filed 397 patents, a figure which is in line with our goals and our long-term average.

### Emerging Business Areas

Our EBAs provide strong, long-term growth platforms in promising end-markets that are based on the company's core competences. We have three EBAs:

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

#### *DSM Biomedical*

DSM Biomedical is a trusted partner to the global medical device industry, enhancing the quality and delivery of healthcare, and shaping the future of biomaterials and regenerative medical devices. Every second, a patient somewhere in the world receives a medical device containing a biomedical solution from DSM.

Key trends shaping the global medical device industry in 2018 included:

- The shift toward value-based reimbursement, with market success for products that have proven clinical and health economic outcomes
- The large-scale industry consolidation of medical device companies and associated supply chain rationalization
- The quest for proven, largely de-risked products and concepts that can be developed into innovative, finished medical devices

The aging of the global population, the increasing incidence of lifestyle diseases, and the growing demand for sustained quality of life are driving up healthcare costs worldwide. These trends continue to stimulate industry changes, creating opportunities for DSM Biomedical as we develop solutions to meet previously unmet needs.

With a global reach backed by a leading research and distribution network based in the US and the Netherlands, our product portfolio, technologies and expertise enable medical device companies to deliver advances in care across a wide range of medical specialties. Our products address key global trends in medicine, from addressing the needs of an aging global population to supporting more active lifestyles, while at the same time answering the requirement for safer, less invasive and more cost-effective medical procedures.

Through our investment in research and our state-of-the-art capabilities, we create, develop and produce innovative materials for our partners, along with components, sub-assemblies and full medical devices. Our technology portfolio of high-quality, advanced healing solutions includes biomedical polyurethanes and polyethylenes, resorbable polymers, bioceramics, collagens, extracellular matrices, device coatings, and cellular therapy platforms. These are used in applications in some of the world's most attractive high-growth markets, including orthopedics, soft tissue repair, cardiology, diabetes management, and general and reconstructive surgery. Examples include ColOSSIS™ and MacroSet™, our resorbable cements for use in orthopedic trauma and extremity bone repair, for which we received FDA clearance in 2018. Also, our Dyneema Purity® Black fiber, commonly employed in high-strength orthopedic suture applications, is now permitted for wider use. Finally, we expanded our collaboration agreement with Aerie Pharmaceuticals. This partnership focuses on novel drug delivery technology in ophthalmology.

DSM Biomedical made good progress in 2018. Assisted by growth from product innovations in medical devices for selected therapeutic areas, we outpaced our attainable market for the third consecutive year while capturing higher-value business.

### *DSM Bio-based Products & Services*[1]

As the world increasingly seeks alternatives to fossil resources and progresses toward a more sustainable, bio-renewable economy, significant commercial opportunities are presenting themselves in advanced biofuels and renewable chemical building blocks such as bio-based succinic acid. With the transition toward a low-carbon economy, the market for biofuels will grow and we are offering a range of solutions.

DSM Bio-based Products & Services pioneers advances in biomass conversion and seeks to demonstrate the commercial viability of sustainable, renewable technologies in collaboration with strategic partners in the value chain. In particular, we have developed patented bioconversion technologies (yeast and enzymes) for various feedstocks and processes (including starch-based and cellulosic) in the biofuels industry.

Our strategy is to deliver unique and differentiating technologies that enable biofuel plant operators to optimize their processes and maximize their yield and co-product creation. This helps make the production of biofuels even more sustainable.

#### Starch-based bio-ethanol

We successfully launched *e*BOOST™, a new proprietary yeast for corn-ethanol production. Since its launch, *e*BOOST™ has continued to demonstrate high performance at multiple plants. Increased ethanol yields are consistently demonstrated at industrial scale at customer plant locations.

#### Cellulosic bio-ethanol

The POET-DSM Advanced Biofuels joint venture operates a commercial-scale production facility for cellulosic bio-ethanol in Emmetsburg (Iowa, USA). The Emmetsburg plant processes corn-crop residues by means of a bioconversion process using enzymatic hydrolysis followed by fermentation. The facility continues to ramp up volume.

Further enhancements in yield and robustness were made in 2018 by switching to a new yeast that we had developed ourselves. POET-DSM also invested in an innovative on-site enzyme manufacturing, which was mechanically completed by the end of 2018. This has been fully integrated into the process, forming a key component of the technology package for further licensing.

#### Bio-succinic acid

The Reverdia joint venture between DSM and Roquette operates a plant in Cassano (Italy) that produces high-quality bio-succinic acid (Biosuccinium®). The joint venture's customer portfolio grew by 48% in 2018. Industry segments with end-use applications for Biosuccinium® include

[1] DSM's interest in the net result of the joint ventures POET-DSM and Reverdia is reported as part of 'Share of the profit of associates and joint ventures'.

compostable bioplastics and bio-based materials, as well as cosmetics and personal care.

In 2019, the structure of the cooperation with Roquette will change. As a result, DSM will enter into a license agreement with Roquette, who will operate the plant.

### *DSM Advanced Solar*

Solar photovoltaic (PV) capacity continues to grow more rapidly than any other fossil or renewable power source. DSM Advanced Solar aims to accelerate the uptake and effectiveness of solar energy by focusing on the development and commercialization of technologies and materials that increase the efficiency of solar modules. Increased efficiency reduces the cost of energy delivered.

More than 250 million PV modules installed to date are equipped with DSM coating technologies. Our anti-reflective coating has enabled the generation of more than 7,500 GWh of additional power.

We introduced aftermarket coatings to select customers as an extension of our market-leading Anti-Reflective coating and Anti-Soiling coating. This new coating is designed for existing solar modules that are as yet uncoated. It has been proven to boost energy production by up to 3%.

The solar market increasingly recognizes our endurance backsheet as reliable and durable, even in extreme conditions such as desert or tropical settings and floating solar parks. We are introducing cost-competitive backsheets that are 100% recyclable and also have a lower footprint. For example, our customer Sharp uses our endurance backsheet in their new series of high-performance solar panels.

We announced a strategic alliance with Silfab Solar, North America's leading solar module manufacturer, to mass-produce high-power back-contact solar modules. This is a major step toward introducing conductive backsheet-based high-power modules to the US market in 2019.

## DSM Business Incubator

The DSM Business Incubator explores potential future business opportunities in areas with a close link to our technologies and competence base. Platforms are created within the scope of securing society's food, health and energy requirements, in close collaboration with industry partners and existing and potential customers. The Business Incubator feeds our new product pipeline with opportunities that address previously unmet customer needs.

In 2018, the Business Incubator continued to work on three key ventures. In the Canola venture, we produce a high-quality plant protein from biomass derived from rapeseed, also known as canola. This is for applications in the food & beverage sector. The demonstration unit was used for further process optimization and for producing pre-marketing volumes for application development. Market interest in our CanolaPRO™ solution grew during 2018. In our energy storage project, meanwhile, a number of potential leads were explored in 2018, generating development projects at several battery/separator companies. The third key venture is our partnership with Syngenta, which continued the joint development of microbials for crop protection agents (see next section, 'Innovation partnerships').

## Innovation partnerships

We have many partnerships that support and accelerate innovation. Highlights include our involvement in MIT.nano, a ground-breaking academic nanotechnology laboratory at the heart of the MIT campus. We are engaged with this state-of-the-art facility through common research programs and exchange of scientists. For more information, see 'Society' in our 'Sustainability statements' on page 148. Another example is our ongoing R&D partnership with Syngenta. We are developing and commercializing a range of agricultural solutions that are based on naturally occurring micro-organisms rather than synthetic solutions.

# Making solar technology more viable

We believe that up to 50% of the world's power could be delivered by solar in 2050. Today, there are still some 1.2 billion people in the world with little or no access to electricity. Emerging new solar materials will be a key factor in ensuring clean and affordable energy for all.

With our solar material innovations, we are helping the industry to move closer to making solar energy accessible to everyone and helping it to boost power gain from photovoltaic (PV) modules and solar parks by lowering the Levelized Cost of Energy.

Our first breakthrough was an anti-reflective coating for solar glass, which squeezes out a 3% power gain compared to non-treated equivalents. This coating is now used in more than 250 million solar panels worldwide. This technology was adapted to include an anti-soiling feature specifically for solar parks in dry, desert climates where sand and dirt are blown onto the solar panels.

Now, our materials innovation strength is being used to create 100% recyclable, fluorine-free backsheets for solar panels that boost power gain even further and reduce carbon footprint by 30% compared to conventional backsheets. India for example, has been investing heavily in PV technology but buying fluorine-based versions that cannot be recycled and will increase end-of-life treatment costs and environmental impact.

We engaged with Indian government agencies to articulate the many advantages of fluorine-free modules over less sustainable alternatives, also demonstrating the recyclability of newer materials. As a consequence, these agencies sharpened their bid for renewable energy projects, removing the requirement for the use of fluorine. Safer and more affordable PV technology has thus become the new norm for India.

"The rapidly growing market for solar energy in India requires affordable and sustainable solar technologies that also offer enhanced product longevity and performance. DSM has the experience and capabilities to deliver these," says Vinay Rustagi, Managing Director BRIDGE TO INDIA.

### Purpose

The DSM Advanced Solar team has one clear goal: to make clean, solar energy a reality for all.

### Performance Driven

To date, our solar materials technology has enabled the generation of some 7,500 GWh of additional power, saving the equivalent of 3,700 kt of $CO_2$eq. The drive to decarbonize the global power mix will at least double the installed solar PV capacity in the next five years. This will offer attractive opportunities for innovations that lower the cost of solar power and improve the efficiency and recyclability of solar panels.

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# Sustainable crop protection

Societal demand for sustainable farming is growing. Growers are looking for reliable and easy-to-handle products that enable them to introduce biological solutions into their crop protection programs. Meanwhile, consumers are asking for biological rather than synthetic pest control strategies. Nature offers many as yet unexplored models of biologically-based pest control. To harness this potential, we have entered into an R&D partnership with Syngenta to develop and commercialize sustainable microbial-based solutions for agriculture.

Together, we will accelerate the delivery of a broad spectrum of bio-control solutions. These solutions are based on naturally occurring micro-organisms that can protect crops from pests and diseases, manage resistance, and enhance plant productivity. We contribute our unique leading microbial database, strong screening competence and decades of experience in the scaling and manufacturing of microbial products. Syngenta has specialized know-how in agricultural applications and plant biotechnology alongside global market access and commercial strength.

Our cooperation with Syngenta is making excellent progress to accelerate the development of these solutions. Our innovative new screening, validation, discovery and development platform is up and running and has already tested around 150,000 samples based on our extensive proprietary micro-organism library, generating promising results.

Camilla Corsi, Head of Crop Protection Research at Syngenta, says, “This is a unique partnership where the strengths of both companies are utilized to deliver new solutions for agriculture. Our teams have developed a trusted relationship that is key for success.”

### Purpose

Society is asking for sustainable solutions to safeguard food and nutrition security. Together with Syngenta, we are accelerating the development of sustainable microbial-based solutions for crop protection.

### Performance Driven

Currently valued at USD 2 billion annually, the global biocontrol market is growing at a compound annual growth rate of 10%. By 2030, the market for biological solutions could total more than USD 7 billion.

# Breakthrough in eye treatment

Approximately 1.3 billion people around the world suffer some form of vision impairment. About 80% is considered avoidable.

A key success factor in any eye therapy is the application of the right dosage of medicine in the right place over time. Diseases of the retina (back of the eye) require delivery of medicine via frequent localized needle injections that cause significant discomfort and inconvenience.

We developed an innovative, sustained-release drug delivery solution to address this therapeutic need. Targeting retinal disorders such as age-related macular degeneration (AMD) and diabetic macular edema (DME), it has shown strong efficacy in preclinical models. A small, injectable, biodegradable polymer fiber is loaded with medicine and injected at a specific location in the eye. The medicine is then released over several months until the fiber degrades. The new treatment is designed to reduce the need for injections in the eye from almost monthly to less than once every four months. Additional fibers can subsequently be injected to ensure continuous therapy.

We have commercialized this solution through a strategic R&D collaboration and license agreement with Aerie Pharmaceuticals. The product is expected to enter human clinical evaluation in 2019.

“This agreement opens up many new opportunities as we continue to innovate with new drugs and technologies to potentially treat many diseases of the eye,” says Dr. Vicente Anido, Jr., Chairman and Chief Executive Officer at Aerie. “This is a platform on which we can build our innovative sustained-release strategies for many ophthalmic diseases, including glaucoma.”

## Purpose

DME is the leading cause of blindness in the diabetic population, while AMD accounts for 8.7% of all blindness worldwide. With our alternative to traditional eye drug delivery systems, we are helping people to live healthier lives.

## Performance Driven

The current worldwide market for pharmacological treatment of eye diseases is estimated at USD 17 billion. It is projected to grow at a compound annual growth rate of 5–6%, driven by underlying demographics and increased therapy penetration.

3 GOOD HEALTH AND WELL-BEING

# 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 | **2018** | 2017 |
|---|---|---|
| Net sales | 45 | 59 |
| Adjusted EBITDA | (105) | (105) |
| Adjusted operating profit | (135) | (144) |
| Capital expenditure | 26 | 12 |
| R&D operating expenditure | 3 | 20 |
| Workforce at 31 December (headcount) | 2,005 | 2,058 |

### DSM Insurances

We retain a limited part of our material damage and business interruption and (product) liability risks via our captive insurance company. In 2018, the total retained damages were € 10 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' on page 212.

# Partnerships

As part of our strategic transformation and move away from more commoditized and cyclical areas, we established the joint ventures of DSM Sinochem Pharmaceuticals in 2011, active in anti-infectives, and ChemicalInvest in 2015, active in polymer intermediates and composite resins.

The results of these joint ventures are reported under 'Share of profit of associates and joint ventures' and 'Other results related to associates and joint ventures' in the 'Consolidated Income statement' on page 165. See also page 188.

These joint ventures were created with the intention of ultimately exiting these businesses over time and maximizing value.

### DSM Sinochem Pharmaceuticals

DSM Sinochem Pharmaceuticals (DSP) was formed in 2011 as a 50:50 joint venture between DSM and Sinochem Group. DSP is the global leader in sustainable antibiotics, next-generation statins and anti-fungals. On 31 October 2018, we divested our stake in DSP to Bain Capital, a leading private equity firm. We received € 247 million for our equity stake, excluding an earn-out estimated at approximately € 36 million and transaction related costs. This resulted in a book profit of € 109 million on the transaction. We received € 271 million in cash following closing, including repayment of debt and after transaction costs.

### ChemicalInvest

ChemicalInvest, formed in 2015, is a global leader in the production and supply of caprolactam (Fibrant) and a leading European supplier of acrylonitrile (AnQore) and composite resins (Aliancys). At the joint venture's formation, we had a 35% shareholding in the company and CVC Capital Partners owned 65%.

On 1 August 2018, Aliancys combined its operations with AOC, a leading US-based producer and marketer of composite resins, to form AOC Aliancys.

On 30 October 2018, Fibrant Holding B.V. completed the sale of Fibrant B.V. and 60% of the shares of Fibrant China to the Highsun Holdings Group Ltd. DSM anticipates receiving about € 200 million in cash related to this transaction, of which € 120 million was received in 2018.

As a result of the restructuring and divestment of the Fibrant business by ChemicalInvest, we now have a 35% direct share in the acrylonitrile business of AnQore and a 18.9% share in the combined composite resins business of AOC Aliancys.

# Reporting policies

## Financial and reporting policies

As a basis for, and contribution to, effective risk management and to ensure that the company is able to pursue its strategies, even during periods of economic downturn, DSM aims to retain a strong balance sheet and limit its financial risks.

DSM's Strategy 2021: *Growth & Value - Purpose led, Performance driven* has ambitious strategic and financial targets, which are outlined from page 22 onwards. Within the context of this strategy, DSM aims to maintain a strong investment grade long-term credit rating.

Most of DSM's 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. DSM aims to spread the maturity profile of outstanding bonds in order to have adequate financial flexibility.

An important element of the company's financial policy is the allocation of cash flow. DSM primarily allocates cash flow to investments aimed at strengthening its business positions and securing stable, and preferably rising, dividend payments to its shareholders. Remaining cash flow is used for acquisitions, with a prudent and disciplined approach in targeting investments predominantly in Nutrition. Share buy-backs are considered in the absence of value-creating M&A opportunities.

DSM aims to provide a stable, and preferably rising, dividend. DSM proposes to increase the dividend to ordinary shareholders by about 25% for the year 2018. 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, DSM buys back shares insofar as this is necessary and feasible. In the year 2018, 2,700,000 shares were repurchased to meet these obligations.

It is company policy to hedge 100% of the currency risks resulting from sales and purchases at the moment of recognition of trade receivables and payables. Additionally, under strict conditions, operating companies may opt to hedge 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 reviewed as and when appropriate.

A business or partner that is targeted for acquisition should add value to DSM in terms of technological or market competences. Acquired companies are in principle required to contribute to DSM's cash earnings per share. In addition, they are required to meet the company's profitability, sustainability and growth requirements. However, such requirements may not be appropriate in the case of small, innovative growth acquisitions.

DSM's policy in the various sub-disciplines of the finance function is strongly oriented toward solidity, reliability and the protection of cash flows. The finance function plays an important role in business steering.

For detailed information on DSM's tax policy, see 'Taxation at DSM' on the company website.

# Non-financial reporting policy

## Reporting policy and justification of choices made

In this Report, DSM reports for the calendar year 2018. 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 1 March 2018.

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 2018. 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. DSM proactively seeks out the views of key stakeholders on issues of material importance to the company.

## UN Global Compact

DSM has been a signatory to the UN Global Compact since 2007 and commits to annually report on progress in implementing the UN Global Compact's 10 Principles in the areas of human rights, child and forced labor, the environment and anti-corruption. This Report is DSM's Communication on Progress 2018, 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 DSM applies the standards of the Global Compact.

We have also aligned our strategy with the Sustainable Development Goals (SDGs). DSM is familiar with the opportunities and responsibilities that the SDGs represent for DSM's 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.

## 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 case 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 DSM reports according to the GRI Standards comprehensive indicators, including a reference to relevant sections in this Report, is provided on the company's Integrated Annual Report website.

## 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.

## 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. DSM was 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 first 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'.

## 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 DSM and various stakeholders. On the basis of the principle of materiality (using the GRI Standards), DSM distinguishes 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). DSM reports on 'External recognitions' on page 40 in 'Stakeholders'. Other examples of external recognition can be found on the company website.

## 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 newly acquired companies are reported at the latest in the year following the first full year after acquisition, because these companies' reporting procedures first have to be aligned with those of DSM. In the case of divestments, safety data are consolidated until the moment of divestment, People data to the end of the month of divestment, and Planet data are reported to the last full year at DSM.

### 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 Planet section in 'Explanation of some concepts and ratios' on page 242. DSM reports 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

## Introduction

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 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-term 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 four senior managers with responsibility respectively for DSM Nutritional Products (Chris Goppelsroeder), DSM Food Specialties and Corporate Strategy & Acquisitions (Philip Eykerman), the DSM Innovation Center (Rob van Leen), and Group People & Organization (Judith Wiese). The latter four managers are appointed by the Chairman of the Managing Board 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, its portfolio management, the deployment of human capital and financial capital resources, the company's risk management system, its financial performance, and its performance in the area of sustainability. The Managing Board is thus also accountable to the Supervisory Board for our company's strategy and management. The full Managing Board attends the Supervisory Board meetings. Other Executive Committee members attend those Supervisory Board meetings, or parts of them, that are specifically relevant to their area of responsibility.

The Managing Board consists of two or more members, to be determined by the Supervisory Board. The current composition of the Managing Board can be found in the chapter 'Supervisory Board and Managing Board Royal DSM' on page 137. 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.

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 in the 'Report by the Supervisory Board' under 'Remuneration policy Managing Board' on page 131.

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 2018, the Managing Board and Executive Committee had 39 formal meetings, some of these by teleconference. No Managing Board member had to be excused from meetings during the year. In five Executive Committee meetings, a member was excused on account of other commitments. In all cases, members who were unable to attend gave advance input for the meeting either in writing or via other members. 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 that meeting, but also reflecting on meeting dynamics and individual or collective performance. Furthermore, there are several informal moments, such as a collective dinner at the end of a full-day meeting, built into the meeting schedule.

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 the chapter 'Supervisory Board and Managing Board Royal DSM' on page 136. 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 reappointment 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 taken into account, paying specific attention to the dynamics between Managing Board and Executive Committee. The Supervisory Board is enabled to do so through the information provided to it 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 by the Supervisory Board of 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 drafted 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 board tenure is taken into account.

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 2018 Annual General Meeting, Rob Routs was reappointed based on his extensive experience and knowledge and his qualities as Chair of our Supervisory Board, as demonstrated during his eight-year tenure to date. The at the time on-going regular strategic review and the fact that the Deputy Chair was stepping down at the 2018 AGM were additional reasons to safeguard continuity in the Supervisory Board.

Geraldine Matchett was reappointed as a member of the Managing Board following her significant contribution to the execution of our company strategy and the improvements — including financial improvements — made during her first tenure as member of the Managing Board. This reappointment also reflects the leadership qualities she has shown through her contributions to the Managing Board and the Executive Committee. With her reappointment, the diversity in terms of gender, nationality, experience and knowledge within the Managing Board and Executive Committee was continued.

Both our Supervisory Board and our Managing Board were well balanced in 2018 in terms of gender, comprising 43% and 33% women respectively, which is in line with Dutch legislation and with the company's own diversity policy. The gender diversity level of 29% women within our Executive Committee comes very close to our target for at least 30% of these positions to be held by women and at least 30% by men. With the appointment of Patricia Malarkey as Chief Innovation Officer, our Executive Committee's gender diversity will be

43% in 2019. 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. Furthermore, in the Supervisory Board of DSM Nederland B.V., a subsidiary of Royal DSM, one of the three members is female (33%).

### 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 in 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 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.

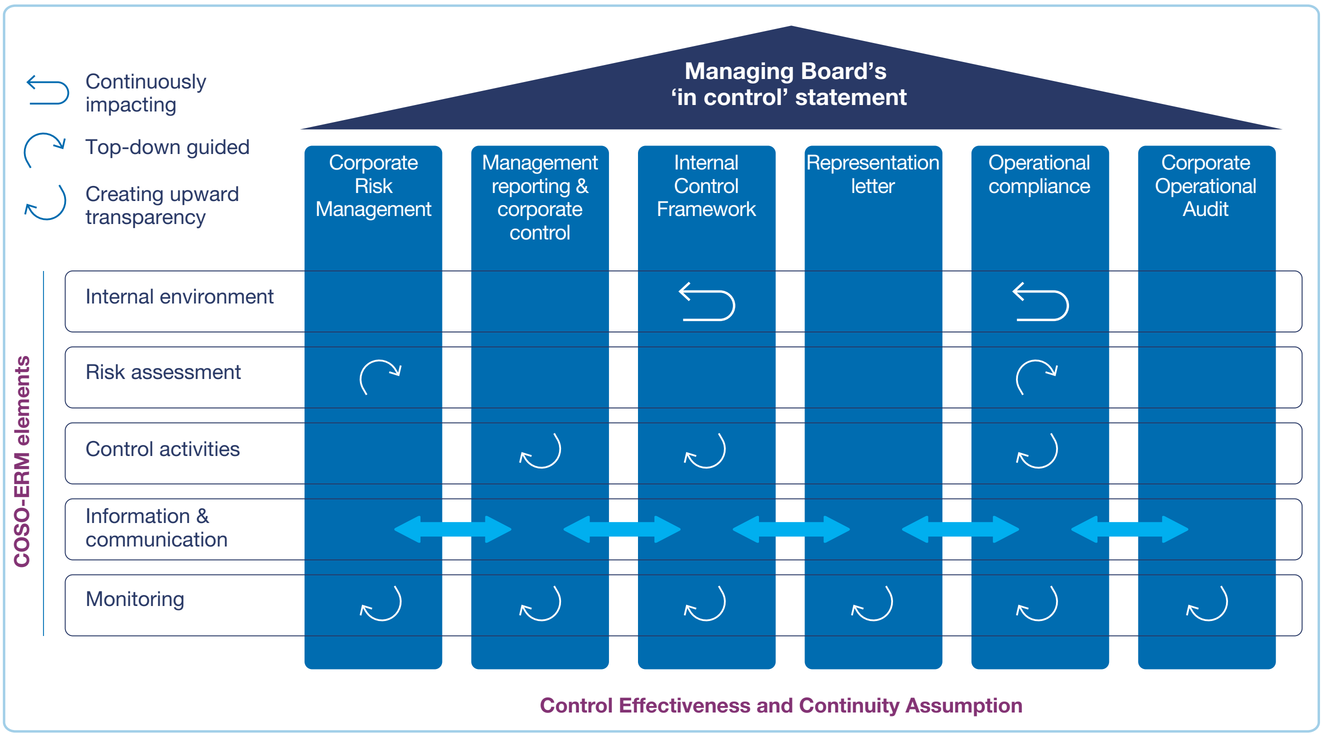
According to the Articles of Association, shareholders who, individually or jointly, represent at least 1% of the issued capital have the right to request the Managing Board or the Supervisory Board to put items on the agenda. Such requests need to be received in writing by the Chairman of the Managing 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 9 May 2018. The agenda was essentially similar to that of previous years. Additional topics were the implementation of the new Dutch Corporate Governance Code, the reappointment of Rob Routs as a member of the Supervisory Board and the reappointment of Geraldine Matchett as a member of the Managing Board.

The Articles of Association were amended to reflect changes in law and regulations including the implementation of the new Dutch Corporate Governance Code published on 8 December 2016 and applicable as of the financial year 2017. Further details can be found on the company website.

### Control effectiveness and continuity assumption

The Statements of the Managing Board are reported on page 123. These 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 a learning curve is achieved, monitoring activities include the sharing of findings and experiences as well as the application of control measures across the supporting pillars.

DSM's structure for managing risks involves three lines of defense (see also 'Risk management' on page 118). Line management within the units is responsible for the first line of defense. Risk management forms the second line of defense, assessing the effectiveness of risk management and internal control at both unit and corporate level. Corporate Operational Audit (COA) is the third line of defense. 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 activities by the units, as well as the design of the risk management and internal control systems, by performing risk-based audits. These examine 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 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 the CFO and CEO.

In 2018, COA carried out 47 audits. In general, audit findings are considered opportunities for improvement as part of a healthy learning culture. In approximately 11% of the audited areas (e.g. operations, finance, SHE, commercial) significant management attention was required to achieve the DSM standard. In the rare event of insufficient follow-up on a finding, the Director of COA escalates that finding to the CEO.

## Dutch Corporate Governance Code

DSM supports the Dutch Corporate Governance Code, which was most recently amended in 2016 and has been in force since the financial year 2017. The Dutch Corporate Governance Code can be found on www.mccg.nl.

We ensure our continued compliance with the Dutch Corporate Governance Code. The proposal to amend the Articles of Association — to reflect changes in law and regulations, including the implementation of the new Dutch Corporate Governance Code — was approved by the Annual General Meeting of Shareholders on 9 May 2018.

Long-term value creation is embedded in both our company Strategy 2021: *Growth & Value - Purpose led, Performance driven* 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 the challenges of 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 the Strategy and People sections of this Report, as well as on page 32 (which describes 'How we create value for our stakeholders') and on page 10 (which describes 'DSM and the Sustainable Development Goals').

Regarding the appointment of members of the Managing Board for a period of at most four years (Principle 2.2 of the Dutch Corporate Governance Code), it should be noted that we have adhered to this principle since the introduction of the Dutch Corporate Governance Code in 2004. Since we respect agreements made before the introduction of the said code, the current Chairman of the Managing Board will remain appointed for an indefinite period.

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.

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.

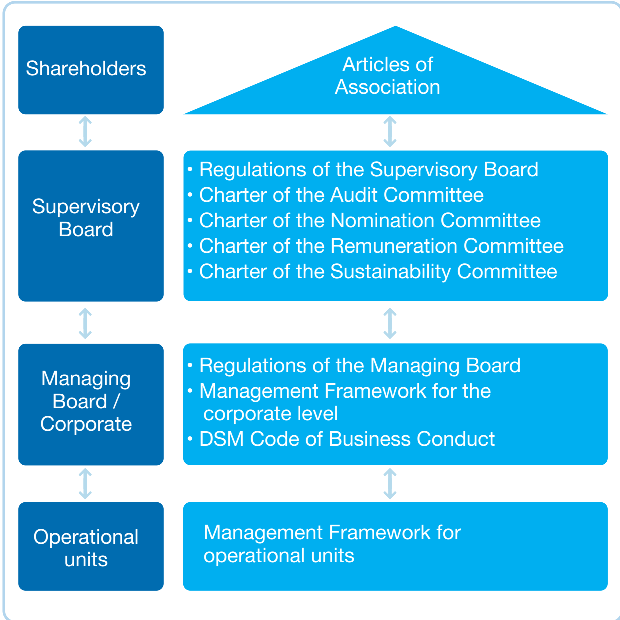
Each support function reports to a Managing Board member. There are support functions in the areas of Finance, People & Organization, Legal, Indirect Sourcing, Communications and ICT.

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, Group Risk Management, 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.




For the sake of clarity, a short summary of the main aspects of the framework at Managing Board/corporate level and operational level is given here. The Managing Board and Executive Committee adhere to the Regulations of the Managing Board. The Managing Board and Executive Committee work according to the Management Framework for the corporate level. This implies, among other things, that they adhere to the DSM Code of Business Conduct and applicable corporate policies and requirements. The Management Framework for the corporate level further provides a description of the most important (decision-making) processes, responsibilities and 'rules of the game' at Managing Board, Executive Committee, functional and regional levels, and includes governance relations with the immediately superior levels (Supervisory Board and shareholders) and the operational units.

The company's strategic direction and objectives are set by means of a Corporate Strategy Dialogue. In June 2018, DSM presented its updated Strategy 2021: *Growth & Value - Purpose led, Performance driven,* which is described in more detail, see page 22.

The operational units conduct their business within the parameters of the Management Framework for operational units. 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 risk management actions according to an Annual Risk Management Plan and in line with corporate policies

- Execute company-wide standards for support functions (systems, processes, vendors, etc.)
- Implement annual functional improvement plans, monitor the effectiveness of the risk management and internal control system by means of process risk assessments and internal audits, and regularly discuss the findings with the Executive Committee member responsible

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 Chairman 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, as well as being chair of 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 CFO.

### Sustainability Governance Framework

*Managing Board*

Sustainability falls under the responsibility of the Managing Board. While CEO/Chairman of the Managing Board Feike Sijbesma is the primary point of contact, other members also chair sustainability topics and initiatives.

Feike Sijbesma oversaw sustainability as a key responsibility and company value as well as a driver of business growth. He also oversaw our engagement with organizations including the United Nations and the World Bank, our strategic partnership with the World Economic Forum and our nutrition-related initiatives including the WFP partnership.

Geraldine Matchett integrated sustainability into financial decision making and represented DSM in the Accounting for Sustainability (A4S) CFO Leadership Network. She also oversaw our efforts and commitment toward the Taskforce for Climate-related Financial Disclosures recommendations, and chaired the Inclusion & Diversity Council.

Dimitri de Vreeze was responsible for Safety, Health and Environment (SHE) and also oversaw our Supplier Sustainability Program and the sourcing of electricity from renewable sources in his responsibility for the Sourcing function.

*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' on page 125.

*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. This board met twice in 2018 together with the Managing Board and a number of senior executives. Subjects included DSM's corporate strategy update and purpose, innovation project and business updates, science-based targets, digitization and the future of transport. They also took the opportunity to visit DSM-Niaga, DSM Dyneema and DSM Advanced Solar locations. In Amsterdam, they hosted employees in a townhall session to exchange thoughts on DSM and sustainability. Jessica Fanzo stepped down from the board due to the requirements of her new position at the Food and Agriculture Organization of the United Nations. Ertharin Cousin, the former Executive Director of the United Nations World Food Programme, joined the board, and in doing so, maintained the desired balance of knowledge across our three focus domains. This board also benefits greatly from its gender and nationality diversity.

### Sustainability Advisory Board

| Member | Background |
|---|---|
| **Robin Chase (f)** | Co-founder and former CEO of Zipcar, co-founder of Veniam, 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 and Trustee on the UK based Power of Nutrition Board of Directors. She served as the twelfth Executive Director of the United Nations World Food Programme from 2012 to 2017. Nationality: American. |
| **Paul Gilding (m)** | Social entrepreneur, author and corporate strategy advisor. Fellow at the University of Cambridge Institute for Sustainability Leadership (UK). In 2011, he published his book 'The Great Disruption'. In the 1990s, he was executive director of Greenpeace International. Nationality: Australian. |
| **David King (m)** | Senior Strategic Adviser to the President of Rwanda since May 2018. Partner at SYSTEMIQ since 2017. Special representative for climate change of the UK government from 2013 to 2017. From 2008 to 2012, he served as the founding director of the Smith School of Enterprise and the Environment at the University of Oxford (UK). Chief Scientific Advisor to the UK government 2000–2007. Nationality: British. |
| **Ndidi Nwuneli (f)** | Social entrepreneur and Founder of LEAP 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 West Africa, unlocking the potential of the nutrition and agriculture landscapes. Nationality: Nigerian. |
| **Ye Qi (m)** | Cheung Kong Professor of Environmental Policy, Volkswagen Professor of Sustainability, and director of Brooking-Tsinghua Center for Public Policy at Tsinghua University in Beijing (China). Before he joined Tsinghua, he taught at Beijing Normal University, and the University of California at Berkeley (California, USA). Nationality: American. |

*Global network*

At a 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 CEO Feike Sijbesma. The Corporate Sustainability staff function 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 following key drivers. Regional operational sustainability networks are in place in China, India, Latin America and North America.

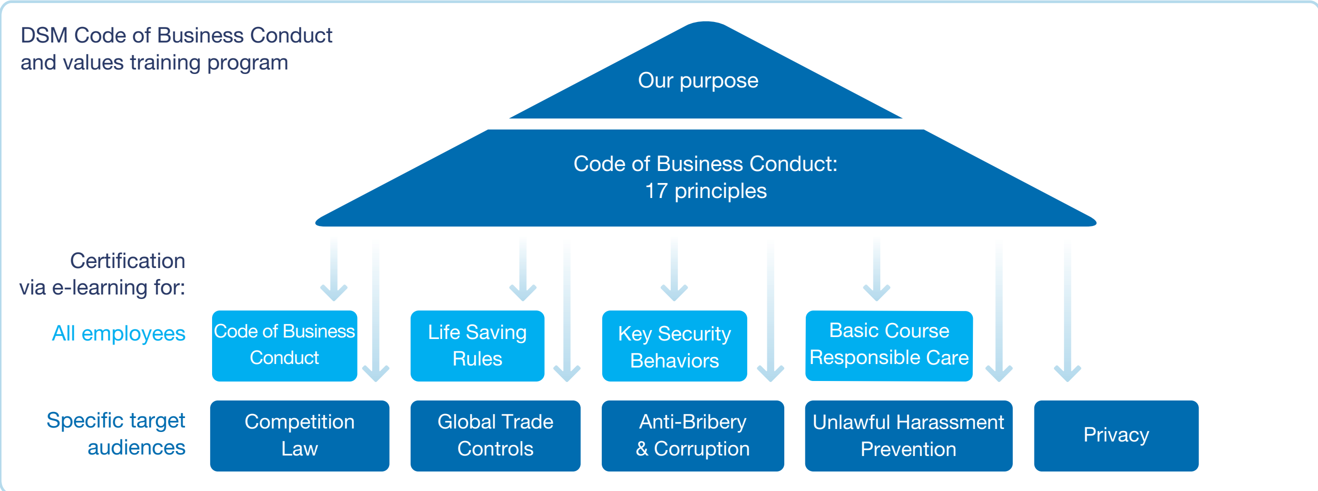
DSM Operations & Responsible Care has responsibility for all corporate issues related to SHE. The Senior Vice President DSM Operations & Responsible Care reports directly to the Managing Board. SHE managers provide support at business group level. Our SHE Council, which includes all business group SHE managers, is instrumental in sharing experiences and developing best practices and communications on SHE issues.

Our CFO, Geraldine Matchett, has appointed a finance executive to lead a taskforce addressing the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). The taskforce, comprising representatives from finance, risk management, sustainability, and investor relations, works with functions such as strategy, operations and procurement, to define what is needed to meet our commitments toward TCFD. It convened several times in 2018 to discuss how we will integrate long-term climate thinking into the Risk Management and Finance processes.

# 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 corporate strategy builds on this foundation. All DSM employees are expected to follow the Code, which is available in seven languages. The full text also appears on the company website. The Managing Board holds DSM's unit management accountable for compliance.




The DSM values training program contains several e-learning courses on these regulations for all employees or, for certain subject matter, specific target groups. When DSM acquires a business, integration and compliance plans are rolled out to make sure new employees are trained.

DSM's regulations cover the three dimensions of People, Planet and Profit, of which the most important are listed here:

*People:* To support DSM's ambition to create an incident-free and injury-free workplace, the Life Saving Rules specify the 12 most important rules that must be followed by all employees to prevent incidents. In the revision of the Life Saving Rules, improved standards of warehouse safety have been included. The corresponding e-learning course will be updated in 2019.

The Unlawful Harassment Prevention e-learning emphasizes the importance of the cultural, diversity and non-discrimination aspects of the Code and focuses on effective employee relations, communications, and non-discriminatory practices.

The DSM Privacy Code for Employee Data and the DSM Privacy Code for Customer, Supplier and Business Partner Data prescribe mandatory training for Privacy Officers, HR employees, legal counsels and employees who regularly work with personal data. In 2018, additional concise e-learnings were introduced to train our employees on the consequences of the new European General Data Protection Regulation, such as the timely reporting of privacy breaches.

A Human Rights position paper is available on the company website. For more information, see 'Human rights' on page 51.

*Planet:* The Basic Course Responsible Care addresses the elements of the Responsible Care Program: Safety, Health, and Environment; Product Stewardship; Security and Sustainability.

*Profit:* DSM has e-learnings for Global Competition Law Principles and Practices and for Global Trade Controls. Compliance 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 DSM Anti-Bribery and Corruption (ABC) Policy and Compliance Manual is shared with selected employees in commercial and business roles. Where appropriate, this is provided in local languages to facilitate better understanding. For example, the DSM ABC Policy and Compliance Manual, an easy-to-use ABC checklist, and ABC classroom training (integrated into the Competition Law classroom program) are available in Chinese. The ABC due diligence program for DSM agents and distributors was further implemented during 2018.

The 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. In the fourth quarter of 2018, a Cyber Fraud Awareness e-learning was introduced as an additional training to increase awareness among all employees regarding prevalent types of cybercrime.

We also have rules in place on the holding and execution of transactions in DSM financial instruments and certain other financial instruments related to trading in DSM shares, and where applicable, shares and related financial instruments in other companies. These 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 in eight languages on the company website, is signed off by suppliers in framework contracts, confirming their commitment to sustainability, among other things.

For distributor and agent contracts, the ABC Policy is translated into terms and conditions that ensure ethical business conduct when these parties act on behalf of DSM or deal with DSM products further down the value chain.

### Training and awareness

Employees must regularly refresh their DSM values training. The implementation of this training program continues to progress well. In 2018, our learning management system was supplemented with an external portal to enable relevant contractors and other third parties to follow courses of the DSM values training program. At year-end, most employees had completed or refreshed their training (excluding employees of some recently acquired businesses).

A Review Team, chaired by the Vice President Group Risk Management, monitors implementation of the DSM values training program. This team also monitors internal and external developments around corporate ethics in order to promote and safeguard the company's values and reputation.

Employees for whom competition laws are most relevant must confirm their compliance with the rules set out in the DSM Competition Law Compliance Manual. In this statement, they confirm that they are not aware of any violation of competition laws by DSM. Sign-off levels are excellent. Alleged breaches are reported to, and discussed with, Group Legal Affairs. In 2018, no breaches were reported.

### Letter of Representation

At the end of each year, management of all 34 operational units signs off on a Letter of Representation. With this, they confirm the compliance of the unit and its employees with applicable laws and regulations, the Code and related values training, and DSM's corporate policies and requirements (see 'Risk management' on page 118).

### Consequence management

We apply zero-tolerance consequence management to violations of the Code. Under our whistleblower procedure (DSM Alert), most violations are reported to and dealt with by local line management. Where this is not considered appropriate, complaints are made directly to the DSM Alert Officer. In all cases, consequence management practices (e.g. official warning, temporary suspension, dismissal) are in place 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 2018, 28 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 the same level as in previous years. There were three potential bribery and corruption cases reported. After investigation, none of these three cases could be substantiated.

The table on the following page gives an overview of all reported violations of the Code, with a breakdown by Triple P dimension and region. Proven serious violations may result in dismissal or other forms of consequence management. In line with this policy, 42 employees were dismissed in 2018 because of breaches of the Code or other legal or local company regulations. In addition, 112 employees received another form of consequence management (official warning or suspension). Over the years, the number of dismissal cases has remained about the same, whereas there is an increase of other kinds of consequence management cases being reported.

*People*: Most of the cases in the People dimension relate to violations of the Life Saving Rules. Inappropriate behavior that does not contribute to a safe and healthy working environment (discrimination, sexual and other kinds of harassment) is also reported in this dimension. Health and safety in the workplace are a priority for the company and incident-reporting channels are well known.

*Planet*: There was one violation of the Code reported in the Planet dimension in 2018 due to irresponsible behavior on the part of an employee. This violation led to a minor environmental incident.

*Profit*: Most of the cases reported in the Profit dimension relate to the incorrect registration of working hours, conflicts of interest and fraudulent expense claims.

## Implementation of the DSM values

| | 2018 | 2017 |
|---|---|---|
| **Training and awareness e-learning:** | | |
| **% of targeted employees trained** | | |
| **General** | | |
| - Code of Business Conduct | 90% | 90% |
| **People** | | |
| - Life Saving Rules | 95% | 97% |
| - Unlawful Harassment Prevention | 97% | 88% |
| - Data Privacy Knowledge | 93% | 96% |
| **Planet** | | |
| - Basic Course Responsible Care | 95% | 100% |
| **Profit** | | |
| - Global Trade Controls | 96% | 96% |
| - Anti-Bribery and Corruption | 95% | 98% |
| - Security | 94% | 96% |
| | | |
| **DSM Competition Law:** | | |
| **% of targeted employees signed off** | | |
| - DSM Competition Law compliance annual statement | 100% | 99% |
| | | |
| **Violations of the Code:** | **154** | **124** |
| **Number of dismissals / other consequence management** | | |
| **Triple P breakdown** | | |
| - People | 22/90 | 28/79 |
| - Planet | 0/1 | 0/1 |
| - Profit | 20/21 | 8/8 |
| **Regional breakdown** | | |
| - Europe & Africa | 14/45 | 18/21 |
| - Americas | 20/48 | 13/61 |
| - Asia-Pacific | 8/19 | 5/6 |
| **Total** | **42/112** | **36/88** |
| | | |
| **Alert cases (whistleblower procedure):** | **28** | **24** |
| **Number substantiated / not substantiated / under investigation** | | |
| **Triple P breakdown** | | |
| - People | 2/10/2 | 1/9/2 |
| - Planet | 0/0/0 | 0/0/0 |
| - Profit | 7/5/2 | 3/7/2 |
| **Regional breakdown** | | |
| - Europe & Africa | 2/4/1 | 2/4/2 |
| - Americas | 1/4/2 | 1/7/1 |
| - Asia-Pacific | 6/7/1 | 1/5/1 |
| **Total** | **9/15/4** | **4/16/4**[1] |

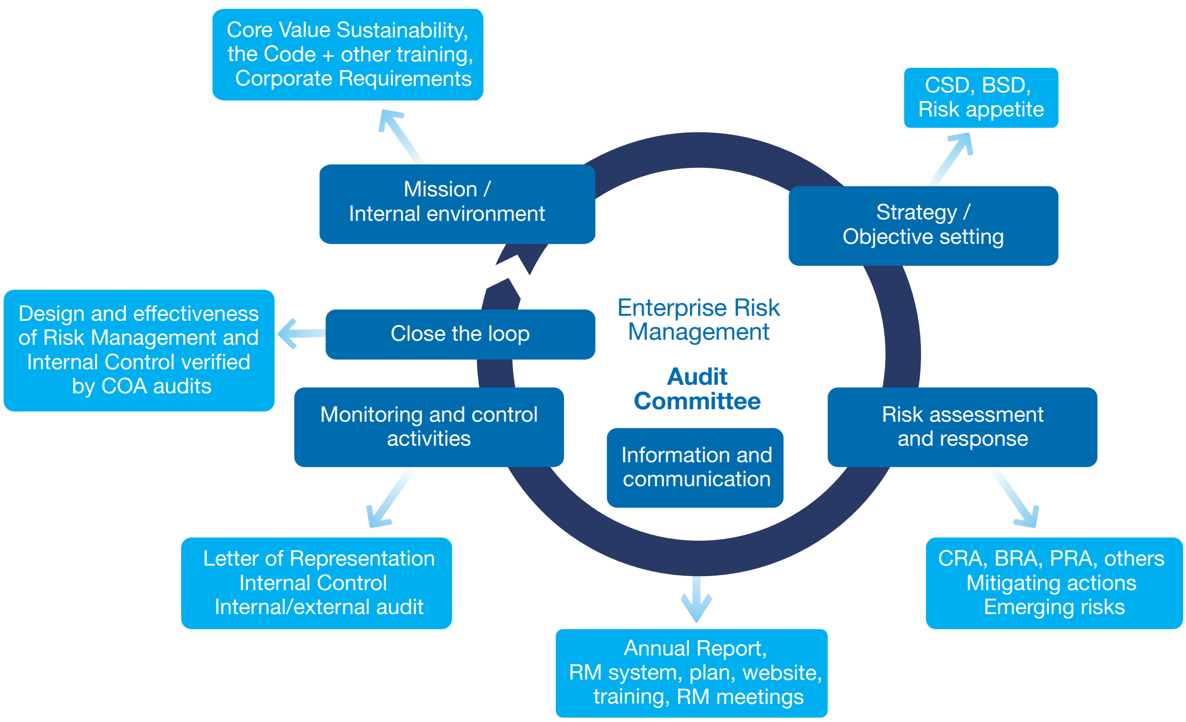
[1] The four Alert cases 'under investigation' in 2017 were resolved and classified as 'not substantiated' in 2018.

# Risk management

The Managing Board is accountable for the management of all risks associated with our company's strategy and activities. To this end, appropriate risk management and internal control systems are in place. The responsibility for identifying and managing risks lies with DSM's individual units.

The units are supported by the Group Risk Management (GRM) department and are regularly assessed by the Corporate Operational Audit (COA) department. Both GRM and COA report directly to the CFO, and COA has direct access to the CEO as well as to the Audit Committee of the Supervisory Board.

DSM Risk Management Cycle




A well-embedded risk management and internal control system and accompanying organization are in place in all units. This approach is based on the COSO-ERM framework[1]. This chapter is structured accordingly (see figure 'DSM Risk Management Cycle').

A full description of our risk management and internal control system and process, together with a description of the identified risks, is available on the company website.

It is the responsibility of the business groups, support functions, functional excellence departments and regions (the units) within DSM to set up, maintain, operate and monitor an appropriate risk management and internal control system within their area of responsibility. This responsibility includes the management, monitoring, reporting and controlling of risks. The units are supported in this by risk managers. COA closes the loop through regular assessments of the design and operational effectiveness of the risk management and internal control system.

### Mission / Internal environment

Values and business principles are key elements of the internal environment for risk management and form the starting point of the risk management cycle. DSM's values are directly related to our purpose of creating brighter lives for all. All our employees receive regular training on values and business principles in line with the framework requirements. They first receive overarching training on the DSM Code of Business Conduct.

In 2018, we implemented a new global risk management operating model to improve the agility, effectiveness and efficiency of our risk management activities. Risk managers have dual reporting lines:
(1) A functional reporting line into Group Risk Management to guarantee the quality of risk management and continuous improvement

[1] Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management

(2) A business / support function reporting line to safeguard close connection to business / support function goals and operations

We have made it easier for employees to follow our Corporate Requirements by clearly communicating who exactly needs to understand and adhere to specific requirements.

## Strategy / Objective setting

Our Group Risk Management supports the Executive Committee, business groups, and support functions at the global and regional levels with risk assessments, Letter of Representation, Corporate Requirements, Code of Business Conduct, and internal control. It also runs a DSM values and risk management training program to deliver on our company strategy.

## Risk assessment and response

An important precursor to any risk assessment is our overall risk appetite, which is defined and updated annually by the Executive Committee. In 2018, our overall risk appetite remained the same as in the previous year (see figure below).

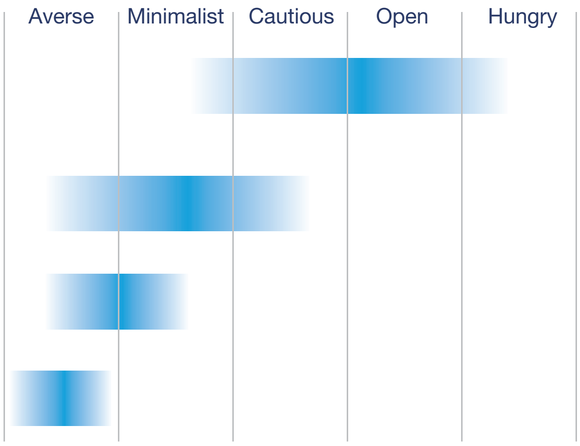
### DSM's risk appetite

Generic/strategic
(e.g.: Innovation, People/organization/culture, Intellectual property, Raw materials/energy, Price/availability, Acquisitions and partnerships, Divestments, Brand)

Operational
(e.g.: Reputation, Customer, Project management, Production process, (Information-) Security, Business continuity, Product liability, Safety, Health and Environment)

Financial and reporting
(e.g.: Liquidity and market, Reporting integrity, Pensions, Financial risks (e.g. credit, tax))

Legal and compliance
(e.g.: Legal non-compliance, Non-compliance with DSM Requirements)




Risk assessments and mitigation plans are carried out at various levels in the organization. We take a standard but flexible, seven-step approach to risk assessments:

- Risk assessment planning
- Preparation
- Risk identification and clustering
- Risk rating
- Evaluation and risk response
- Reporting
- Periodic monitoring and reviewing

Risk assessments focus on various categories including material, non-material and reputational risks and emerging risks. In 2018, we identified additional opportunities for improving how we facilitate, challenge, define and monitor our mitigation efforts. As a result, we created a Risk Assessment Manual and also updated the risk assessment training program regarding facilitation and execution.

*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 top risks facing DSM as well as emerging risks, which could become material after the current strategic period. The Executive Committee also agrees on how to mitigate and monitor these. The outcome of the CRA is reported to, and discussed with, the Audit Committee of the Supervisory Board annually (see table of Top risks on page 121).

*Business Risk Assessments*
Our business groups also conduct assessments. Business Risk Assessments (BRAs) and their equivalents for our business units, functions and regions are carried out by cross-functional teams. These include experienced facilitators as well as experts who can challenge assumptions in order to help improve the quality of these risk assessments.

*Process Risk Assessments*
We additionally conduct Process Risk Assessments (PRAs) which are intended to make our processes as robust, business-specific and fraud-proof as possible.

*Project Risk Assessments*
At project level, risk assessments are performed on an ongoing basis to secure successful delivery of project objectives and value creation for the company.

## Monitoring activities

We have various means of monitoring and related reporting. These include monitoring of events, Letter of Representation (LoR), external/internal audits, compliance checks, and functioning of the common controls. Monitoring and reporting are discussed in risk management committees in order to evaluate and manage the status of the risk profile.

The most important types of risks for our units, as well as any incidents, are reported annually and reviewed mid-year through the LoR, which all reporting units are required to sign. This 'bottom-up' report is checked against the risks reported by the CRA, as well as against the findings from the internal and external audits.

Our risk managers also support internal audits in their work of checking the effectiveness of the internal controls, compliance status, risk mitigations, and incident repairs.

The consolidated overview of all the aforementioned monitoring is the basis for this risk section and the statements of the Managing Board at the end of this section.

## Control activities

Control activities ensure the safeguarding of our assets and the integrity of our financial reporting. They help us to avoid fraud and reputational damage and they also support the statements of the Managing Board. We have implemented the core of the internal control framework to bring relevant key controls for its main supporting processes into an overarching Internal Control Framework. Relevant function leads manage their key controls, which will enable DSM and its stakeholders to have a comprehensive oversight of all internal controls in scope. Control activities are carried out by the responsible unit managers and regularly reviewed in Risk Management Committees. These activities include:

- Compliance with training requirements, segregation of duties, and follow-up of audits of various stakeholders
- Execution, follow-up and quality of the relevant set of risk assessments
- Best practices from internal and external sources to further strengthen our risk management cycle as well as to ensure appropriate risk management awareness and relevant training for our employees

We apply a standard approach for monitoring ERP (Enterprise Resource Planning) access controls, user provisioning and privileged user management for the majority of our units.

## Information and communication

Continuous efforts are made to inform employees about the DSM risk management system and to support and/or train them in its use.

## Assessment of the design and effectiveness of the risk management and internal control system

Three lines of defense exist to manage risks.

First line: Line management within the units, executing risk management and internal control activities.
Second line: Risk management, assessing the effectiveness of the risk management and internal control activities, both at unit and corporate level.
Third line: Corporate Operational Audit (COA), conducting independent audits/reviews, some of these unannounced. The scope and frequency of the 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 has been agreed by the Executive Committee and the Audit Committee of the Supervisory Board.

The internal audits conducted in 2018 did not indicate any material failings in the design and effectiveness of our risk management and internal control system.

## Risks

The outcome of the CRA for Strategy 2021 in July 2018 and the CRA review of December 2018 were reported to and discussed with the Audit Committee of the Supervisory Board. This 'top-down' outcome corresponded very well with the 'bottom-up' risks and incidents as reported by all the individual units in their respective Letter of Representation, as well as with the findings from the internal and external audits. This final risk profile was reported to and discussed with the Audit Committee of the Supervisory Board in February 2019 and forms the basis for the main risks and responses as reported in the table.

## Top risks

The table on the next page shows the four most important risks that might prevent us from achieving the targets defined in Strategy 2021. It also describes the mitigating actions we are taking. Top risks have a potential impact on DSM's EBITDA of an indicative €30 million or more, or have a large non-financial impact such as on reputation.

### Top risks and related mitigating actions

| Description of risks | Mitigating actions |
|---|---|
| **Product portfolio and purpose driven growth** | |
| The quality and relevance of the current DSM portfolio of products is fully reflected in the above-market growth rates achieved in all businesses. To sustain this strong market position DSM needs to continuously invest in its existing products and invest in large innovation projects for which the time to market is uncertain.<br>DSM also aims to execute value creating M&A, predominantly in nutrition, to further evolve its portfolio. This will require resources and could constitute a distraction affecting the ongoing business performance. | In order to sustain organic growth all business groups have customer-centricity programs running. Upgrade of the sales force and a more agile organization is part of these programs. These programs will continue and, where needed, be reinforced in 2019.<br>Top innovation projects are closely monitored, with a well-established stage-gate approach and regular status reviews with the Executive Committee. Where possible, time-to-market is shortened via customer and/or innovation alliances, such as the recently announced joint venture with Cargill to introduce zero-calorie, cost-effective sweeteners.<br>To avoid distraction across the company, M&A initiatives are managed centrally. Staffing has also been organized to ensure flawless integrations while maintaining the running business performance. |
| **Market environment and competitive position** | |
| DSM has created a streamlined and simplified business portfolio and a good platform for growth, as 2018's results have shown.<br>Nonetheless the risk remains of facing increased competition for some product-market combinations, especially from low-cost/margin players. DSM actively needs to manage its competitive position, which includes capacity expansions for selected products. | The existing strength of the portfolio, as a result of continued investments made in innovation, has resulted in a broadening of DSM's product, application and customer base.<br>Nonetheless, customer-centricity programs have been initiated to increase/protect the value captured. Increased sales and marketing effectiveness is a key element of these programs.<br>The company has a multi-year plan to ensure timely capacity expansions and/or external sourcing to manage growth. Operational continuous improvement programs also secure maximum output from existing installations. |
| **People, organization and culture** | |
| In order to continue to deliver above-market growth and retain strong operational efficiency, DSM requires a high-quality pipeline of talents and effective people development. While good progress has been made in talent management, further improvements may be required to fully embed a culture of customer-centricity, agility and cost-consciousness to support the organization in its growth ambitions. | In order to have the right people and culture to sustain an organic growth focus, DSM has initiated customer-centricity programs across all business groups. The Strategy update announced in June 2018 also emphasized strongly the actions in place to support internationalization & diversity, leadership development and culture (see page 42).<br>To make sure we make full use of our resources we will put more focus on inclusive, agile and high-performing teams. |
| **Operating in a digital world** | |
| Despite a good track record and having procedural and system controls in place, cybercrime constantly needs attention to protect our assets and information. This risk is exacerbated by the accelerating pace of digitalization. | DSM has further strengthened its cyber security. A risk assessment was performed for information technology and operational technology systems in 2018. Specific programs have been rolled out to improve cyber security of production plants and R&D laboratory systems. Monitoring to detect security incidents and incident response is in place. In 2018, a new reporting dashboard was also developed to monitor trends and enhance early detection of vulnerabilities. |

As part of the CRA for Strategy 2021, all risks from the previous strategy were assessed in order to ascertain whether they are top risks for the new strategy as well. The risks shown in the top risk table are a combination of current and new top risks.

### Emerging risks

The following three emerging risks have been identified by the Executive Committee. They are being carefully monitored so that we can take action or use them as new opportunities in a timely manner.

1. Our Nutrition and Materials markets may be disrupted by longer-term changes such as:

- New food preferences / food systems
- Potential impact of climate and health trends on animal protein
- Innovations such as 3D printing
- Replacing fossil fuels by energy from renewable sources
- New mobility and transport options

This could create a risk if the speed of change in the world is higher than our speed of adaptation to it.

2. We may not be able to adjust our environmental footprint fast enough.

3. We may not be able to respond to climate change fast enough in connection with:

- Sourcing risks
- Physical risks (e.g. in operations)
- Disruption to our end-markets (transitional risks)

At the same time, these emerging risks will also offer new opportunities for our Brighter Living Solutions.

### Other important risks

Besides the top risks reported in the previous table and other emerging risks that need to be taken into account, there are also some other important risks, sometimes of a more operational nature. These include business continuity, product liability, intellectual property, tax and digitalization risks. DSM did not identify any significant company-specific risks associated with Brexit, other than the general external uncertainties around, for example, currency and other economic developments associated with the different scenarios for the UK exiting the EU.

Our risk management and internal control system has been designed to monitor and respond to the maximum extent possible.

### Enhancement of the risk management system

During 2018, the following major improvements were made to our risk management framework:

- New global Risk Management organization rolled out
- Core of Internal Control Framework implemented
- Letter of Representation updated: specific attention for Emerging risks and two new risk categories, Climate risks and Internal Control risks
- To support the LoR submissions, dedicated sessions were organized to discuss potential climate risks in more detail with the individual business groups
- More focus on the quality of Risk Assessments (new Risk Assessment Training Program and Manual)
- The DSM Cyber Fraud Awareness e-learning was introduced for all our employees, to increase their awareness of important types of cybercrime (ransomware, man-in-the middle attack, fake CEO email)

As a standard practice, the Audit Committee of the Supervisory Board was given detailed insight into the status of our risk management system in 2018. This ensured that this committee remained fully involved in, and aware of the status of, and developments in, the dynamic process of enterprise risk management and how it has the potential to help us to achieve our strategic objectives.

# 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, 7 March 2019

The Managing Board

Feike Sijbesma, CEO/Chairman Managing Board
Geraldine Matchett, CFO
Dimitri de Vreeze

# Report by the Supervisory Board

## Introduction by the Chair

> " Our realization of our company purpose was taken to new heights in 2018."
>
> **Rob Routs, Chair of the Supervisory Board**

Dear reader,

As my colleagues and I on the Supervisory Board look back on 2018, we do so with a feeling of pride in what our company achieved during the strategic period 2016–2018 and how we are now positioned to enter the next strategic phase of DSM's development.

During the discussions that were to result in the updated Strategy 2021: *Growth & Value - Purpose led, Performance driven*, we were delighted to conclude that we had been so successful in combining doing well with doing good that we can now explicitly state that DSM is a purpose-led company. Our realization of our company purpose — focusing on improving our own approach, enabling others, and advocating change to better serve the needs of people and planet — was taken to new heights in 2018.

In terms of DSM's impact on the wider world, we were greatly encouraged by the success of our first Supplier Partnership Day, at which sustainability was a key topic, as well as by the provision of a € 1 billion Revolving Credit Facility, where the interest rate is linked to our reduction of greenhouse gas emissions. Projects such as Project Clean Cow, Veramaris®, Niaga® and Avansya, all of which will come to fruition in the near future, are a testimony to the way we enable our business partners to create a brighter world. In the Supervisory Board, we regularly review these projects to ensure that we remain on course to achieve our ambitions.

It would not be possible in the limited pages of this Report to list all the opportunities our company takes and creates to advocate positive actions for people and planet. But all the recognition that DSM and its people received once more in 2018 strengthen us in our belief that we are on the right track.

The Supervisory Board is very pleased with the success of the ambitious Strategy 2018, which sought to optimize the performance of the group's portfolio of businesses while delivering above-market growth. The accelerated progress made during 2016 and 2017, however, left a significant challenge during the final year of the strategic period — how to deliver once again on the annual targets from a far higher base than had been assumed in the original plans. Nevertheless, a determined focus was maintained throughout the company, delivering above-market organic sales growth, double-digit increase in EBITDA in the underlying business, and an improvement in ROCE of more than 100 bps. Furthermore, the company continued to deliver on a key strategic promise by realizing significant value in the non-core joint ventures, through exiting DSM Sinochem Pharmaceuticals and the Fibrant business of ChemicalInvest.

Besides Sustainability, another core value at DSM is Safety. We were deeply saddened by the tragic death of a contractor at our Pecém site in Brazil in 2018, and have further intensified our efforts to ensure permanent adherence to our company safety standards worldwide. This tragic event demonstrates how we must be fully committed, both individually and collectively, to the continuous raising of our safety standards at all times and in all places at DSM, as well as in our own private lives. Reflecting this commitment, the Supervisory Board now commences every meeting with an update on the company's safety performance. I am pleased to report that during this year's visit to India — where DSM has a track record of no recordable incidents for the fourth consecutive year — it was clear that safety was top of the company's agenda.

On behalf of my colleagues on the Supervisory Board, I would like to thank our employees and leadership for the energy and commitment that they brought to their work in 2018. Our thanks also go to the many stakeholders who continue to place their trust in our company. 2018 was a good year for DSM. It has established a strong and resilient portfolio that helped the company perform above its own targets and above market, but also positions it well to face the challenges that might lie ahead.

# Supervisory Board Report

This Report provides further information on the way the Supervisory Board performed its duties in 2018. This concerns 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 that value. Since the company's mission is to create brighter lives for people today and generations to come, long-term value creation is embedded both in the updated Strategy 2021: *Growth & Value - Purpose led, Performance driven* and in our company culture. This is described in the chapters 'Strategy 2021' on page 22, 'People' on page 42 and 'Corporate governance' on page 108.

## Composition of the Supervisory Board

The composition of DSM's Supervisory Board is diverse in gender, nationality, background, knowledge and experience. The Board comprises four men and three women. Two members are Dutch, two American, one Dutch-American, one British and one Singaporean. The Board's current members are Rob Routs (Chair), Pauline van der Meer Mohr (Deputy Chair), Victoria Haynes, Eileen Kennedy, Frits van Paasschen, Pradeep Pant and John Ramsay. For detailed information on their backgrounds, see the company website and 'Corporate Governance' on page 108 of this Report.

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: auditing, 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 chapter. 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 CEO/ Chairman of the Managing Board, 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 (parts of) Supervisory Board meetings and participate in the yearly site visit of the Supervisory Board.

The Supervisory Board interacts with DSM employees on various occasions and in various settings. The Supervisory Board regularly receives information on relevant topics from senior leaders and experts in the company during committee meetings, full Supervisory Board meetings, annual site visits, and also as part of their ongoing professional education. In 2018, this was the case with respect to merger and acquisition opportunities, the company's innovation and customer-centricity and agility projects, its manufacturing policy, IT and cyber security (both from an IT as well as an operations perspective). During its annual site visit, the Supervisory Board actively takes 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.

Direct, one-on-one contact between Supervisory Board members and Managing Board members generally follows naturally from topics discussed in the Supervisory Board meetings and reflects the members' respective fields of expertise. In view of that expertise, Managing Board members also seek the advice of Supervisory Board members on specific matters. The same goes for contact with other employees. For example, in 2018, Rob Routs was — given his operations background in Shell, a company with a strong safety culture — involved in the revision of the DSM Life Saving Rules. 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.

### Meeting attendance of the DSM Supervisory Board

| Member | Supervisory[1] Board meetings | Audit Committee meetings | Nomination Committee meetings | Remuneration Committee meetings | Sustainability Committee meetings |
|---|---|---|---|---|---|
| Rob Routs (Chair) | 100% | n.a.[2] | 100% | 100% | n.a.[2] |
| Tom de Swaan (Deputy Chair)[3] | 100% | 100% | n.a. | 100% | n.a. |
| Victoria Haynes | 90%[4] | 100% | n.a. | 100% | n.a. |
| Eileen Kennedy | 80%[4] | n.a. | 100% | n.a. | 67% |
| Pauline van der Meer Mohr (Deputy Chair)[3] | 90%[4] | n.a. | 100% | 100% | n.a. |
| Frits van Paasschen | 90%[4] | n.a. | 100% | 100% | n.a. |
| Pradeep Pant | 90%[4] | 100% | n.a. | n.a. | 100% |
| John Ramsay | 90%[4] | 100% | n.a. | 100% | n.a. |

1 Attendance is reflected for the five Supervisory Board (SB) meetings and five conference calls held in 2018. In addition to the five conference calls there was also one SB call in 2018 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 that call.
2 The Chair has a standing invitation and has attended 100% of the meetings.
3 Tom de Swaan retired from the Supervisory Board as of the 2018 General Meeting of Shareholders, with Pauline van der Meer Mohr succeeding him in the role of Deputy Chair as of the same date.
4 Victoria Haynes had to miss the SB meeting on 9 May due to a prior commitment. Eileen Kennedy, John Ramsay and Frits van Paasschen missed an extra SB call planned at short notice to discuss a potential pre-financial update; they all three called two days later to discuss the financial update just before publication of the pre-financial update. Pradeep Pant missed the extra call on 30 May 2018 to prepare for the Capital Markets Day (CMD) which was planned in the course of 2018 following the decision to schedule the CMD on 20 June 2018. He was able to call in for the extra SB conference call held on 14 June to finalize the preparation of the CMD. Pauline van der Meer Mohr missed the SB conference call on 31 July 2018 due to a prior commitment. In addition, Eileen Kennedy had to miss the SB meeting of 8 October and the Sustainability Committee meeting of 12 February, both for personal reasons.

### 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 and treasury topics. As part of this agenda item, the Supervisory Board tracks the company's financial performance, approves the annual Finance and Capital Expenditure Plan, and deliberates on any additional treasury topics as needed. In 2018, the Supervisory Board discussed and approved the share buy-back program to cover the company's commitments under existing management and employee option and share plans and the company's stock dividend policy.

In 2018, the Supervisory Board was actively involved in the company's strategy update, including strategic direction and target-setting for the years till 2021 as well as dividend considerations, as presented during the Capital Markets Day on 20 June. The Supervisory Board was also extensively involved in the process for reviewing potential merger and acquisition targets and the monetization of DSM's stakes in Fibrant and DSM Sinochem Pharmaceuticals.
At the Board's request, the Supervisory Board was updated as to the company's global manufacturing plan. Customer-centricity and agility projects are being rolled out throughout the company, contributing to a top-line and customer-first mindset. Given the importance of these projects, the Supervisory Board did a deep dive on the project within DSM Nutritional Products and will continue to follow the implementation and effects of these projects going forward. In addition, the Supervisory Board was updated and involved in DSM's Innovation projects, such as Project Clean Cow, Veramaris® and Avansya (fermentative Stevia). A continuous education session was dedicated to updating the Supervisory Board on the (latest) European and Dutch legislation and case law on acquisitions and shareholder rights and obligations.

### 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 took the Supervisory Board to India.


The DSM Supervisory Board (from left to right): John Ramsay, Pauline van der Meer Mohr (Deputy Chair), Frits van Paasschen, Victoria Haynes, Rob Routs (Chair), Eileen Kennedy and Pradeep Pant.

Following the visit to Switzerland in 2016 and to North America in 2017, the 2018 site visit provided an overview of the company's presence in India. It also gave an update on doing business in India, drawing on the insights of external speakers. The visit to India deepened the Board's understanding of DSM's presence and business in India as well as the opportunities that the country presents for the company.

The India visit began with a general overview of the company's activities in India, a review of talent development in the country, and a presentation from an external speaker providing an introduction to India in general, focusing primarily on the politics and economics of the country. A reception was organized at the residence of the Dutch ambassador to India for the Supervisory Board members to meet the company's Indian partners and stakeholders, including several customers. Throughout the week, the Board received updates on the company's Solar, Functional Materials and Nutrition (Animal Nutrition & Health and Human Nutrition & Health) businesses in India. To stress the importance of customer-centricity, the Supervisory Board aims to meet with customers during each site visit. In India, the Board visited Sterlite Technologies, a DSM customer which is a leading global provider of optical fiber.

The Supervisory Board then traveled to DSM Engineering Plastics in Pune — a site with high SHE standards and a low environmental footprint. The visit included a plant tour, a visit to the solar field, interactions with employees and participation in a townhall meeting. The townhall meeting was broadcast live via audio across all our sites in India.

In the second half of the week spent in India, the Supervisory Board was updated on the complete services provided globally to DSM from our India-based Shared Service Center. This update included a visit to Tata Consultancy Services (TCS), one of our partners in Information Technology. Furthermore, the Board took the opportunity to meet with DSM's India leadership and talents.

Finally, time was taken to reflect on the site visit with the participating Executive Committee members. Supervisory Board members shared their impressions and offered specific advice about doing business in India, and also about the talent development process. Both Supervisory Board and Executive Committee concurred on the relevance of India for the company and the importance of continuing to strengthen our presence there.

## Supervisory Board meetings and performance evaluation

In 2018, the Supervisory Board held its five regular meetings and one regular call in the presence of the Managing Board, as well as four additional calls in the presence of the Managing Board, in order to be able to dedicate sufficient time to the company's business and financial performance as well as the strategy update process. Information on attendance of Board and Committee meetings can be found on page 126.

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 2016. In the other two years, the evaluation of the Supervisory Board is performed by means of a self-assessment consisting of a written questionnaire, followed by in-depth, one-on-one interviews between the Chair and individual Supervisory Board members.

As part of this evaluation, not only the collective performance of the Supervisory Board and its Committees, but also that of individual Supervisory Board members, was evaluated and members received feedback in the interviews conducted by the Chair. Furthermore, the Deputy Chair interacted with all Supervisory Board members to assess the performance of the Chair. The outcome of the evaluation was presented to, and discussed with, the Supervisory Board in December, in the absence of the Managing Board. While the Managing Board's performance is also assessed as part of the evaluation, this happens throughout the year as part of the discussions on succession planning in the Nomination Committee, and particularly when the performance appraisals of the 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.

The overall feedback from the evaluation in 2018 was that the Supervisory Board members feel the Board generally functions well. Critical issues are raised and addressed adequately. The decision-making process is regarded as efficient. As it was recognized that is was sometimes difficult to find sufficient time to discuss all items on the agenda, it was agreed to extend the available meeting time. Besides the regularly scheduled topics, the main topics identified for focus in the coming years were the implementation of the new strategy and portfolio management, as well as new product innovation and unlocking value. Given the importance of people for the company's success, it was agreed to give the Supervisory Board more exposure to the company's talents. Finally, the Board Committees are also deemed to be operating well and the feedback of the discussions to the full Board ensures that all Supervisory Board members are familiar with the issues discussed in the Committees.

## Committees

The Supervisory Board has four committees to cover key areas in greater detail: nominations, remuneration, sustainability and auditing. These are described in more detail below.

### *Board nominations*

The Nomination Committee comprises Rob Routs (Chair), Eileen Kennedy and Pauline van der Meer Mohr. Feike Sijbesma and Judith Wiese, Executive Vice President Group People & Organization, were also involved in this Committee's discussions. The Committee met five times in 2018. 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 2018, nomination discussions focused on succession planning for both the Managing Board and the Supervisory Board. With respect to the Managing Board, the discussions focused on the talent pipeline available for the succession of Managing Board members.

The Supervisory Board established that the composition of the Managing Board is diverse in nationality (with two Dutch citizens, and one member with joint Swiss, British and French citizenship), gender (two men, one woman), background, knowledge and experience, and that it provides a good foundation to support all clusters and business groups in achieving their targets and thus in contributing to the company strategy. For detailed background information on all Managing Board members, see the company website under 'Corporate Governance' and page 137 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. The Supervisory Board decided to propose Pauline van der Meer Mohr for re-appointment for a two-year term at the 2019 Annual General Meeting of Shareholders. The Supervisory Board decided to do so on the basis of her broad human resource management, corporate governance and international business experience, her extensive experience and qualities as a Supervisory Board member, as demonstrated during her past period as a member of DSM's Supervisory Board. In 2018, the Nomination Committee also discussed several profiles that could be added to the Supervisory Board. The results of these discussions will be announced with the agenda for the 2019 Annual General Meeting of Shareholders.

*Board remuneration*
The Remuneration Committee had five meetings in 2018. Pauline van der Meer Mohr (Chair), Victoria Haynes, Rob Routs, Tom de Swaan (until the General Meeting of Shareholders of 2018) and John Ramsay (as of the General Meeting of Shareholders of 2018) 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 posted for the Remuneration Committee meetings. For more information on the remuneration policy see 'Remuneration policy Managing Board' on page 131 and implementation of that policy in 2018, see 'Remuneration of Managing Board and Supervisory Board' on page 224.

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 2018. The majority of discussion time in 2018 was spent on possible adjustments to the company's remuneration policy. A corresponding proposal will be submitted to the 2019 Annual General Meeting of Shareholders for approval. The performance and remuneration of the Executive Committee members were also shared with the Remuneration Committee. Feike Sijbesma and Judith Wiese 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 2018. This Committee comprises Eileen Kennedy (Chair), Pradeep Pant and Frits van Paasschen. 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 also has access to all the meeting materials posted 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 'Assurance report of the independent auditor' on the sustainability information by KPMG on page 235 of this Report, the full Supervisory Board approved the reporting in these sections on 27 February 2019. 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, a recurring topic was the company's performance against its People and Planet aspirations, with a focus on Brighter Living Solutions, responsible care, and inclusion and 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 Strategy 2018. Deep dives were made into several topics. One was on preparing for a low-carbon future as well as setting science-based targets. The Committee discussed actions that were being undertaken to further future-proof the company by improving our climate impact and climate risk exposure, by enabling a low-carbon economy, and by advocating appropriate action externally and internally. Other topics addressed more extensively were Safety (including the revitalization of DSM's Life Saving Rules), the outcome of the Employee Engagement Survey, and finally, the process through which the company identifies risk and materiality topics and how these processes are intertwined.

Furthermore, the Committee was updated on DSM's performance in the various Environmental, Social and Governance indices such as CDP, Sustainalytics, Fortune's 'Change the World' list and the Dow Jones Sustainability World Index.

*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 five times in 2018, three of these times via conference call. Tom de Swaan (Chair until the 2018 Annual General Meeting), John Ramsay (Chair as of the 2018 Annual General Meeting), Victoria Haynes, Pradeep Pant and Frits van Paasschen are members of the Audit Committee. The Chair of the Supervisory Board participated in all meetings and calls. All Supervisory Board members have a standing invitation to attend Audit Committee meetings; in 2018, they 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 Board meeting. 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 2018, these included the appointment of the SVP of Corporate Operational Audit (COA) as proposed by the Managing Board, the approval of the 2019 COA Audit plan and the proposed reappointment of the external auditor (to be approved by the 2019 Annual General Meeting of Shareholders). All Supervisory Board members also have access to all the meeting materials posted for the Audit Committee meetings.

DSM's external auditor KPMG and the CFO participated in the Audit Committee's meetings and calls. The CEO participated in the Audit Committee meetings and the call in which the half-year results were discussed. The managers responsible for corporate control, internal audit, risk management and compliance also participated in these two meetings and this call. The manager responsible for corporate control also participated in the two calls in which the financial developments and interim results for the first and third quarter were discussed.

At least once a year, the Audit Committee meets with the external auditor without the Managing Board being present. Two such meetings took place in 2018.

The Committee had in-depth discussions on the company's financials; the Finance plan; the Capital Expenditure plan; dividend proposals; the financial statements; accounting policy changes; internal risk management and control systems; potential risks (including Safety, Health and Environment and security risks); compliance with recommendations and observations made by internal and external auditors; and the role and functioning of COA, including the endorsement of its proposed audit plan for 2019, 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, and on-going litigation. All these discussions included mitigating actions to prevent recurrence.

Discussions were held with KPMG about the audit plan, management letter, audit report and financial statements for 2018, including management's 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 DSM's in-control statement (for the 'Statements of the Managing Board' see page 123, and for a visualization of DSM's control environment see page 110). The management letter contained constructive recommendations for further strengthening of DSM's internal controls. The most important element was KPMG's encouragement to continue to take the pillar 'Internal Control Framework' to a higher level of maturity. In line with our own assessment no material weaknesses were reported by KPMG.

Finally, in 2018, the Audit Committee formally evaluated the external auditor, and discussed the reappointment of KPMG. Other specific topics addressed during the Audit Committee meetings in 2018 were cyber security, both from an IT and an Operations perspective, and the internal control framework.

### Financial statements 2018

The Report by the Managing Board and the financial statements for 2018 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 27 February 2019. 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 2018 financial statements to the 2019 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, starting on page 58.

# Remuneration policy Managing Board

This chapter outlines the remuneration policy as approved by the Annual General Meeting of Shareholders in 2013. Details of the actual remuneration in 2018 as prepared by the Remuneration Committee and approved by the Supervisory Board can be found in Note 13 of the 'Parent company financial statements', on page 224.

## Remuneration policy

The objective of DSM's remuneration policy is to attract, reward, motivate, incentivize and retain qualified and expert leaders that the company needs to achieve its strategic and operational objectives, with the right organizational set-up, while acknowledging the societal context around remuneration and recognizing the interests of DSM's stakeholders. The following elements are taken into consideration:

- The remuneration policy reflects a balance between the interests of DSM's main stakeholders as well as a balance between the company's short-term and long-term strategy. As a result, the structure of the remuneration package for the Managing Board is designed to balance short-term operational performance with the medium- and long-term objective of creating sustainable value within the company, while considering the interests of all of its stakeholders. DSM sets a clear strategic direction and executes this with agility. DSM strives for high financial performance, as well as in the field of sustainability, and aims to maintain a good balance between economic gain, respect for people and concern for the environment, in line with the DSM values and business principles as reflected in the DSM Code of Business Conduct
- To ensure that highly skilled and qualified senior executives can be attracted, motivated and retained, DSM aims for a total remuneration level that is comparable to levels provided by other (Dutch and European) multinational companies that are similar to DSM in terms of their size and complexity
- The remuneration policies for the members of the Managing Board and for other Executive Committee members, as well as for other senior executives of DSM, are aligned
- In designing and setting the levels of remuneration for the Managing Board, the Supervisory Board also takes into account the relevant statutory provisions and the provisions of the Dutch Corporate Governance Code, societal and market trends, and the interests of stakeholders
- DSM's policy is to offer the Managing Board a total direct compensation approaching — from below — the median of the labor-market peer group

## No adjustments to the remuneration policy for the Managing Board in 2018

There were no adjustments to DSM's remuneration policy in 2018. The policy was last adjusted in 2013. The policy is designed to provide fair compensation approaching the median, and consists of a base salary and a well-balanced mix of Short-Term and Long-Term Incentives. Both the Short-Term Incentive (STI) and the Long-Term Incentive (LTI) consist of two equal parts, one of which is linked to financial targets and the other to sustainability plus — for STI only — individual targets. The policy is currently under review; changes (if any) will be presented to the 2019 Annual General Meeting of Shareholders, but without changing the current Annual Base Pay, STI and LTI structure.

## Labor-market peer group

To be able to attract the right leaders and to secure long-term retention of the current Managing Board members, DSM takes external reference data into account in determining adequate remuneration levels. For this purpose, a specific labor-market peer group has been defined, containing a number of Dutch and European companies that are more or less comparable to DSM in terms of size, international scope and the complexity of their business portfolio. The Supervisory Board regularly reviews this peer group to ensure that its composition is still appropriate. The latest review was conducted in the fourth quarter of 2017 and did not result in a change in the current composition of DSM's labor-market peer group. As a result of this, the labor-market peer group for 2018 consisted of the following 16 companies (eight of which are peers on the Amsterdam stock exchange, the other eight being European industry peers):

| | |
|---|---|
| AkzoNobel | KPN |
| ASML | LANXESS |
| Clariant | Lonza |
| Covestro | Philips |
| Evonik | Randstad |
| Givaudan | RELX |
| Heineken | Solvay |
| Johnson Matthey | Wolters Kluwer |

The review in the Supervisory Board end 2018 resulted in the replacement of RELX by Ahold Delhaize as of 2019.

DSM will benchmark its remuneration package against the packages offered by the labor-market peer group once every three years, potentially leading to adjustments. In addition, the company may apply a yearly increase to the base salary based on the 'general increase' (market movement) for DSM executives in the Netherlands.

The remuneration policy was benchmarked against the peer group in the fourth quarter of 2017. DSM aims to offer Managing Board members a total direct compensation approaching the median of the labor-market peer group. The Supervisory Board of DSM has determined that the remuneration level of the CEO was for many years clearly lower than the median of the predetermined peer group (in the first, lowest quartile). This is due to the conservative approach of the CEO regarding his own remuneration. The remuneration of the other members of the Managing Board is between first quartile and median level.

## Total Direct Compensation

The Total Direct Compensation of the Managing Board consists of the following components:

(I) Base salary
(II) Variable income
- Performance-related STI (Deferral and Share Matching Plan)
- Performance-related LTI (Restricted Share Plan)

In addition to this Total Direct Compensation, members of the Managing Board participate in the Dutch pension scheme for DSM employees in the Netherlands, and are entitled to other benefits, such as a company car and representation allowance.

Value as percentage of Total Direct Compensation (on target):

| | |
|---|---|
| A: Base salary | 50% |
| B: Variable income (STI + LTI)[1] | 50% |
| Total Direct Compensation | 100% |

[1] LTI at discounted fair value; at face value, the LTI is 100% of base salary.

## Base salary

The policy is that the Managing Board members receive a base salary approaching the median of the labor-market peer group. Base salary levels are reviewed based on a three-year remuneration benchmark. In addition, the company will, when appropriate, apply a yearly increase to the base salary taking into account the 'general increase' (market movement) for DSM executives in the Netherlands, as well as the general movements of the labor-market peer group.

## Variable income

The variable income part of remuneration consists of the Short-Term and Long-Term Incentives. The distribution between Short-Term and Long-Term Incentives for (on-target) performance aims to achieve a proper balance between short-term result and long-term value creation. The parameters relating to the various elements of the variable income part of the remuneration are established and, where necessary adjusted by, and at the discretion of, the Supervisory Board, taking into account the general rules and principles of the remuneration policy itself. Distribution of variable income (on-target):

| | |
|---|---|
| A: Short-Term Incentive (STI) (50% base salary) | 50% |
| B: Long-Term Incentive (LTI) (50% base salary)[1] | 50% |
| Total variable income as % of base salary | 100% |

[1] LTI at discounted fair value; at face value, the LTI is 100% of base salary.

### *Short-Term Incentive (STI)*

Managing Board members are eligible to participate in an STI scheme. The scheme is designed to reward short-term operational performance with the long-term objective of creating sustainable value, taking into account the interests of all stakeholders.

The STI opportunity amounts to 50% of the annual base salary for on-target performance (100% in the case of excellent over-performance). Half of the STI opportunity (i.e. 25% of base salary at on-target performance) is related to financial targets, the other half to sustainability and individual targets.

| Target areas | Total | Shared | Individual |
|---|---|---|---|
| Financial | 25% | 25% | 0% |
| Sustainability and individual | 25% | 15% | 10% |
| Total | 50% | 40% | 10% |

### *STI linked to financial targets*

The part of the STI that is linked to shared financial targets (for on-target performance, 25% of base salary) consists of elements related to the company's focus on delivering the financial targets of its strategy: Adjusted EBITDA, which represents an opportunity at target performance of 12.5%; gross free cash flow, with an opportunity of 10%; and organic net sales growth, with a 2.5% opportunity.

| Target areas | On-target pay-out (% of base salary) |
|---|---|
| Financial targets | |
| - Adjusted EBITDA | 12.5 |
| - Gross free cash flow | 10.0 |
| - Organic net sales growth[1] | 2.5 |
| Total | 25.0 |

[1] Excluding currency fluctuations, acquisitions and divestments

*STI linked to sustainability and individual targets*

The part of the STI that is linked to shared sustainability as well as to individual targets, represents 25% of base salary for on-target performance. Further refinement/adaptations of performance measures in the area of sustainability and their relative weight may take place following proper evaluation. The following shared measures linked to sustainability are applicable for the STI:

- Brighter Living Solutions (BLS): percentage of running business that meets ECO+ and People+ criteria (products that offer a better environmental or social benefit compared to mainstream reference solutions)
- Employee Engagement Index: related to the High-Performance Norm in industry
- Safety Performance: defined as Frequency Index for Recordable Injuries

Definitions of these elements can be found in 'Explanation of some concepts and ratios' on page 242 and 'People' on page 42.

In addition to shared sustainability targets (15%), a limited number of individual (financial and non-financial) targets (10%) will apply.

| Target areas | On-target pay-out (% of base salary) |
|---|---|
| - Sustainability (three targets with an equal weight of 5% each; BLS, Employee Engagement and Safety) | 15 |
| - Individual (financial and non-financial) | 10 |
| Total | 25 |

The targets are determined each year by the Supervisory Board, based on historical performance, the operational and strategic outlook of the company in the short term, and the expectations of the company's management and stakeholders, among other things. The targets contribute to the realization of the objective of long-term value creation.

The company does not disclose the exact actual targets, as these qualify as commercially sensitive information, though they are in line with the published strategic, financial and sustainability goals of the company. Full transparency will be given on target areas and definitions. The external auditors performed agreed-upon mandate procedures on target-setting and realization. For detailed information, see Note 13 'Remuneration of Managing Board and Supervisory Board' on page 224 of the 'Parent company financial statements'.

*Mandatory and voluntary deferral of STI*

A mandatory proportion (25%) and a voluntary proportion (up to a total maximum of 50% of the total gross STI) of the STI amount earned in a year is deferred into DSM shares with a three-year holding period. This is linked to a one-for-one matching award on the total deferred amount under the condition that predefined performance targets and measures are met at the end of the three-year vesting period. The performance measures are equivalent to the measures under the Long-Term Incentive Plan. The Deferral and Share Matching Plan thus provides an additional link between Managing Board remuneration and long-term sustainable value creation.

*Long-Term Incentives (LTI)*

The Managing Board members are eligible to receive performance-related shares. Under the Performance Share Plan, shares will conditionally be granted to Managing Board members. Vesting of these shares is conditional on the achievement of certain predetermined performance targets at the end of a three-year period. The following four performance measures are, equally weighted, applicable for the calculation of the vesting of LTI Performance Shares:

- Relative Total Shareholder Return (TSR) performance versus a peer group
- Return on Capital Employed (ROCE) growth
- Energy Efficiency Improvement (EEI)
- Greenhouse Gas Emissions (GHGE) Efficiency Improvement

The LTI performance targets are defined as follows:

- **Relative Total Shareholder Return (TSR)**
  This is used to compare the performance of different companies' stocks and shares over time. It combines share price appreciation and dividends paid to show the total return to shareholders. The relative TSR position reflects the market perception of overall performance relative to a reference group.
- **Return on Capital Employed (ROCE) growth**
  This is the operating profit as a percentage of weighted average capital employed.
- **Energy Efficiency Improvement (EEI)**
  This is the reduction of the amount of energy that is used per unit of product (known as energy efficiency) on a three-year rolling average basis.
- **Greenhouse Gas Emissions (GHGE) Efficiency Improvement**
  This is the reduction of the amount of greenhouse gas emissions per unit of product. The definition of greenhouse gases (GHG) according to the Kyoto Protocol includes carbon dioxide ($CO_2$), methane, nitrous oxide ($N_2O$), sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. The scope for calculation of GHGE reduction is as follows:
  (I) DSM's direct emissions (on-site or from DSM assets) mainly comprise $CO_2$ (scope 1)
  (II) DSM's indirect emissions (emissions created on behalf of DSM in the generation of electricity or the delivery of energy via hot water or steam) relate to electricity from the grid. DSM relies on local suppliers (scope 2)

In determining the number of shares to be conditionally granted, the Supervisory Board takes into account the face value of the DSM share instead of the discounted fair value. This is in line with best practice and provides total transparency to shareholders. The policy for the value of the LTI is set at 100% of base salary for on-target performance and 150% in the case of excellent over-performance (face value; at fair value this would be 50% and 75%). The number of conditionally granted shares is set by dividing the policy level at maximum (150% of base salary) by a share price at the beginning of the year of the conditional grant; as a result of this, the number of shares granted annually may fluctuate.

*Granting date*

The grant date of the conditional Performance Shares will be the last trading day of March.

*TSR as a performance measure*

TSR counts for the vesting of 25% of the performance shares. DSM's TSR performance is compared to the average TSR performance of a set of predefined peer companies. The TSR peer group for the 2018 performance period consists of the following 14 companies (no change compared to 2017):

| | |
|---|---|
| AkzoNobel | Evonik |
| Arkema | Givaudan |
| BASF | Kerry |
| Christian Hansen | LANXESS |
| Clariant | Lonza Group |
| Croda International | Novozymes |
| DowDuPont | Solvay |

The review of the Remuneration Policy resulted in the replacement of AkzoNobel and LANXESS by Celanese and Symrise as of 2019.

The TSR peer group reflects the relevant market which DSM's Supervisory Board considers to be suitable benchmarks for DSM.

The peer group is verified and updated by the Supervisory Board each year based on market circumstances (such as mergers and acquisitions) that determine the appropriateness of the composition of the performance peer group.

*ROCE growth as a performance measure*

ROCE growth counts for the vesting of 25% of the performance shares.

*EEI as a performance measure*

EEI counts for the vesting of 25% of the performance shares.

*GHGE Efficiency Improvement as a performance measure*

GHGE Efficiency Improvement in percentage points (over a three-year period) is used as a basis for the vesting of 25% of the performance shares.

*Performance incentive zones*

The following vesting scheme has been established to reflect DSM's sharpened, challenging targets for the strategy period 2016–2018:

| TSR vesting scheme | | GHGE Efficiency Improvement vesting scheme | | EEI vesting scheme | |
|---|---|---|---|---|---|
| Rank | % of shares that vest | DSM GHGE Efficiency Improvement % (over a 3-year period) | % of shares that vest | EEI% (over a 3-year period) | % of shares that vest |
| 1 | 100 | ≥ 8.25 | 100 | ≥4.00 | 100 |
| 2 | 97 | 7.75 - < 8.25 | 83 | 3.25 and < 4.00 | 83 |
| 3 | 93 | 7.25 - < 7.75 | 67 | 2.75 and < 3.25 | 67 |
| 4 | 87 | 6.75 - < 7.25 | 50 | 2.50 and < 2.75 | 50 |
| 5 | 80 | 6.25 - < 6.75 | 33 | 2.25 and < 2.50 | 33 |
| 6 | 73 | 5.75 - < 6.25 | 17 | 2.00 and < 2.25 | 17 |
| 7 | 67 | < 5.75 | 0 | < 2.00 | 0 |
| 8 | 50 | | | | |
| 9 | 33 | | | | |
| 10-15 | 0 | | | | |

The ROCE target and vesting scheme is not disclosed, given the business-sensitive nature, but target setting is in line with published strategic goals.

The retention period for performance shares expires five years after the three-year vesting period or at termination of employment, if this occurs earlier. The final TSR performance of DSM versus its peers will be determined and agreed-upon mandate procedures are performed by the external auditor at the end of the vesting period.

### Pensions

The members of the Managing Board participate in the Dutch pension fund *Stichting Pensioenfonds DSM Nederland* (PDN). This pension scheme for the Managing Board is equal to the pension scheme for the employees of DSM Executive Services B.V. and DSM employees in the Netherlands.

### Contractual arrangements

*Term of employment*

Managing Board members who joined DSM prior to 1 January 2013 are engaged on the basis of an individual employment agreement for an indefinite period of time. Managing Board members joining the company after 1 January 2013 are engaged on the basis of a Management Services Agreement with a four-year term, to be renewed at reappointment.

*Term of appointment*

Members of the Managing Board appointed before 1 January 2005 are appointed for an indefinite period of time. Managing Board members appointed after 1 January 2005 are appointed for a period of four years, after which they are eligible for reappointment by the Annual General Meeting of Shareholders.

*Notice period*

Resignation by a member of the Managing Board is subject to three months' notice (six months in case of a Management Services Agreement). A notice period of six months applies in the event of termination by the company.

*Severance arrangement*

There are no specific contractual exit arrangements for members of the Managing Board appointed before 1 January 2005. Should a situation arise in which a severance payment is appropriate for such a Board member, the Remuneration Committee will recommend the terms and conditions. The Supervisory Board will decide upon this, taking into account usual practices for these types of situations, as well as applicable laws and corporate governance requirements.

Members of the Managing Board appointed after 1 January 2005 are covered by a severance provision in accordance with the Dutch Corporate Governance Code, which is set at a maximum of one annual base salary.

*Claw-back / change-of-control*

Legislation entered into force regarding the revision and claw-back of bonuses and profit-sharing arrangements of board members of Dutch listed companies as of January 2014. Part of this legislation was already covered in comparable rules of the Dutch Corporate Governance Code and consequently already included in the employment contracts of the members of the Managing Board. This regards in particular the possibility (1) to revise an incentive prior to payment, if unaltered payment of the bonus/incentive would be unreasonable and unfair, and (2) to claw back an incentive, if payment took place on the basis of incorrect information on the fulfilment of the incentive targets or the conditions for payment of the incentive.

*Share ownership*

The Supervisory Board encourages the Managing Board to hold shares in the company to emphasize its confidence in the strategy and performance of the company.

Minimum shareholding guidelines for the members of the Managing Board are applicable, equivalent to three times the base salary in the case of the CEO and one time the base salary for the other Managing Board members. These shareholdings can be built up over five years. For more information, see the position paper 'Royal DSM's position on Board Member shareholdings in the company' on the company website.

*Loans*

DSM does not provide any loans to members of the Managing Board.

Heerlen, 7 March 2019

The Supervisory Board
Rob Routs, Chair
Pauline van der Meer Mohr, Deputy Chair
Victoria Haynes
Eileen Kennedy
Frits van Paasschen
Pradeep Pant
John Ramsay

# Supervisory Board and Managing Board Royal DSM

## Supervisory Board

### Rob Routs (1946, m), Chair

First appointed: 2010. End of current term: 2020. 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 Board of Directors of AECOM, member Board of Directors of ATCO Group Ltd. and member Board of Directors of A.P. Moeller-Maersk Group.

### Pauline van der Meer Mohr (1960, f), Deputy Chair

First appointed: 2011. End of current term: 2019. 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 and Mylan, Chair Supervisory Board EY Netherlands, Monitoring Committee Dutch Corporate Governance Code (per January 2019) and Board of Trustees Nederlands Danstheater, member selection-nomination committee Supreme Court of the Netherlands, and Capital Markets Committee AFM.

### Victoria Haynes (1947, f)

First appointed: 2012. End of current term: 2020. Nationality: American. Audit Committee (member), Remuneration Committee (member). Last executive position held: President and CEO of the Research Triangle Institute International. Supervisory directorships/other positions: member Board of Directors of PPG and member Board of Directors of Nucor.

### Eileen Kennedy (1947, f)

First appointed: 2012. End of current term: 2020. Nationality: American. Sustainability Committee (Chair), Nomination Committee (member). Position: Professor Nutrition Friedman School of Nutrition Science and Policy at Tufts University in Boston (US); Supervisory directorships/other positions: Member of High Level Panel of Experts on Food Security and Nutrition of the UN Committee on World Food Security; Chair of the Sight and Life Foundation.

### 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 (US), Chairman Board of Convene, CEO and Founder of The Disruptors' Feast Advisory, Advisor to CitizenM Hotels (NL), private equity firm TPG, CEO practice at Russell Reynolds, advisor to three tech companies, member cross-industry advisory council RBC (CA), advisor Indian School of Hospitality and Red Sea Project.

### Pradeep Pant (1953, m)

First appointed: 2016. End of current term: 2020. 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; member Advisory Board Lee Kong Chian School of Business, Singapore Management University (until mid-September 2018); non-executive Director Max BUPA Health Insurance Co Ltd. (India), non-executive Director Antara Senior Living Ltd. (India); President 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) of Syngenta AG. Supervisory directorships/other positions: non-executive director of the Board of RHI Magnesita NV and non-executive director of the Board of G4S plc, advisor to Clarmondial.

## Managing Board

### Feike Sijbesma (1959, m), CEO/Chairman

Position: CEO/Chairman Managing Board since May 2007; member Managing Board since July 2000.
Nationality: Dutch.
Supervisory directorships/other positions held: Non-executive Director of Unilever; Member Supervisory Board Dutch Central Bank (DNB); Member Global CEO Council (GCC) Chinese People's Association for Friendship with Foreign Countries (CPAFFC); Climate Leader for the World Bank Group and Chair of the High-Level Leadership Forum on Competitiveness and Carbon Pricing, convened by the World Bank Group.
e-mail: feike.sijbesma@dsm.com

### Geraldine Matchett (1972, f), CFO

Position: 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: Board member of Catalyst Europe;
Co-Chair of HRH Prince of Wales' A4S (Accounting 4 Sustainability) CFO Leadership Network;
Non-Executive Director of ABB; Board member of FCLTGlobal.
e-mail: geraldine.matchett@dsm.com

### Dimitri de Vreeze (1967, m)

Position: member Managing Board since September 2013. End of current term: 2021.
Nationality: Dutch.
Supervisory directorships/other positions held: Chairman Supervisory Board DSM Netherlands; Board member of CEFIC (European Chemical Industry Council) and chair Sustainability Advisory Forum; Board member ChemicaInvest; Board member DSM Sinochem Pharmaceuticals (DSP) until 1 November 2018; Board member 'Fonds voor de topsport' (NOC*NSF; Dutch Olympic Committee Fund for top sport); member Supervisory Board Sanquin; member Advisory Board ECP (Electronic Commerce Platform Netherlands); Board member Young Captain Foundation.
e-mail: dimitri.vreeze-de@dsm.com

# What still went wrong in 2018

We are always trying to improve, but sometimes things still go wrong. Here we share the most significant incidents of 2018 across all three dimensions of People, Planet and Profit. This includes health, safety, environment, and security incidents as well as what we have learned from business that has not developed as planned.

Preventing repeat problems requires us to understand each incident to the best of our ability. When a problem occurs, we take care of any injuries, repair any damage, and act throughout with compassion. We also trigger an improvement cycle (see 'Safety, health & wellness' on page 44). This includes investigating root causes and trying to eliminate them. We put new requirements or operating procedures in place as needed.

We apply zero tolerance to violations of the 'DSM Code of Business Conduct' (see page 115). We do not disclose any personal details in cases involving individuals.

In line with our reporting policy, this overview includes incidents and some serious near-misses. Near-misses are cases that did not result in injury, illness or damage but which could have done so. Even when crisis is averted, it is our responsibility to learn from it and do better the next time. DSM has 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 (see 'Monitoring activities' in 'Risk management' on page 120) and our reporting system for SHE and Security incidents.

## People

*Incident resulting in a fatality*

A tragic accident took place at DSM Nutritional Products in Pecém (Brazil). As a sea container was being prepared for unloading, one of its doors opened very forcefully, because a large bag had shifted position and was pressing against the inside of the door. A contractor was hit by the container door and lost his life. The root causes have been thoroughly investigated and the lessons learned are being implemented. We are committed to the safety of all workers and will continue to pay close attention to contractor safety. We are supporting the affected families.

*Other logistic incidents*

At DSM Nutritional Products in Venlo (Netherlands) a contractor was caught by a reversing forklift truck. He suffered bruises to his foot and a laceration to his right elbow that required three stitches.

At DSM Nederland in Geleen (Netherlands) a contractor was injured in the face and sustained a fracture to the jaw while unloading a container with road plates for a demolition area.

As a result of the fatal incident and these two logistical incidents, we have included transport and warehouse safety in our revision of the DSM Life Saving Rules, leading to improved standards on warehouse safety across the whole of DSM.

*Incidents involving falls*

At DSM Food Specialties in Seclin (France) an employee slipped from the second rung of a ladder, falling to the ground. The ladder toppled over and landed on him, causing a broken thumb.

At DSM Resins and Functional Materials in Meppen (Germany) a taxi driver delivering mail to the site fell to the ground while passing through a doorway, resulting in a broken shoulder.

*Other safety incidents*

At DSM Nutritional Products in Sisseln (Switzerland) a research employee analyzing samples experienced a severe skin reaction. There were no indications of incorrect handling or a spill of any kind and the employee was wearing the required personal protective equipment (gloves, safety goggles, and lab coat). The skin disorders observed were diagnosed as an acute allergy and the employee was exempted from this type of work in the future.

At DSM Engineering Plastics in Emmen (Netherlands) a fire damaged a part of the copolymerization control room. The cause of the fire is still under investigation.

At DSM Nutritional Products in Sisseln (Switzerland) three employees were working near a pump when the pump started to emit smoke and burst. The employees were contaminated with 1-pentol and were taken to hospital for treatment. The plant design has been reviewed and thorough actions have been taken to avoid similar accidents from reoccurring.

At DSM Nutritional Products in Jiangshan (Jiangsu Province, China) an employee lost three fingers of his left hand when they got caught in a running rotary valve, as the installed fixed guard had been removed. The application of the Machine Safety Standards on site has been reviewed and embedded in the inspection and maintenance system.

At DSM Nutritional Products in Sisseln (Switzerland) a contractor closing an elevator door had his middle finger caught between the elevator door and the door frame. The contractor's fingertip and nail were severely injured, and the contractor was taken to hospital for treatment.

At DSM Nutritional Products in Grenzach (Germany) an employee suffered abrasions to his thigh and bruised his foot. He was using a lifting system to maneuver a barrel when suddenly the barrel fell out of the lifting system and injured his leg and foot. The lifting system was taken out of service for further investigation.

At DSM Nutritional Products in Ames (Iowa, USA) an employee engaged in resealing a bag with an electric hand-held stitcher lost the top of his left index finger. The bag got jammed in the stitcher and the employee's finger was injured as he tried to release it. The stitcher was taken out of operation and a thorough review of machine safety risk assessments in the region has been completed.

At DSM Nutritional Products in Lima (Peru) a contractor was engaged in installing a new process filter. Working at a level below this contractor was another contractor, who was unaware of the potential risk posed by the activity being carried out above him and who omitted to look up. The bottom part of the filter that was being installed fell down and hit the contractor's thumb, resulting in a severe contusion and multiple bone fractures. As corrective actions, contractors at the site were retrained, safety supervision and inspections were ramped up, and the work permit process was strengthened.

At DSM Nutritional Products in Grenzach (Germany), chemical substances were released due to an unexpectedly violent reaction. The released chemical cloud was contained with water by fire fighters. No one was injured and no chemical substances were detected outside the building. The cause of the incident is still under investigation.

*Privacy incidents*

An email invitation was unintentionally sent to 37,000 email addresses in- and outside DSM due to an incorrect attribute in a dynamic distribution list. The incident was reported to the Dutch Privacy Authority.

### Planet

At DSM Nutritional Products in Piura (Peru) untreated wastewater containing oils and fats was discharged to an external drain. On discovery, the discharge was immediately stopped, and the external drain was cleaned up to the extent possible.

At DSM Nutritional Products in Grenzach (Germany) a leakage occurred in one of the bioreactors of the waste water treatment plant, requiring a shutdown of the plant for a week. This required some production units on the site to operate at reduced capacity for several days.

### Profit

A product recall in the US was necessary for our process flavors that were blended by a third party on behalf of DSM Food Specialties, leading to claims from customers.

DSM Food Specialties in Delft (Netherlands) suffered a temporary lower output as a result of issues in fermentation. This required longer than anticipated to resolve.

At DSM Nutritional Products in Buenos Aires (Argentina) a fire destroyed a building that housed offices, a warehouse and three mixing lines for animal nutrition. All operations and office activities were stopped, temporarily transferred to other locations and resumed within three months after the incident occurred.

At DSM Nutritional Products in Brazil our animal nutrition business was hit by a truck drivers' strike, severely impacting the production and shipment of products to our customers.

At DSM Innovation Center an email was received from an online hacker claiming to be DSM's CEO, requesting assistance for an urgent money transfer. The receiver failed to recognize that the email address was not the actual email address of DSM's CEO, resulting in funds being wired from DSM.

At DSM Nutritional Products a man-in-the-middle attack of a suppliers' email account resulted in a money transfer by DSM to the wrong bank account.

With the increased incidence of cyber attacks, DSM recognized the need to raise employee awareness as a strong control measure. A DSM-wide Cyber Fraud Awareness e-learning was launched.

At Group Business Services a monthly debit tax balance was interpreted as a liability, resulting in erroneous payment to the Dutch tax authorities. Immediately after discovery of the error, mitigating measures were taken and the funds were fully recovered.

At Group Business Services an attempt to transfer money from the company to a fraudster's private bank account (instead of that of a supplier) was timely detected and prevented by carefully following the required procedures (no money was transferred).

At Group Business Services a double payment was made due to an incomplete set-up in the payment system. The money was fully recovered.

At DSM Nutritional Products in Mexico, trucks carrying DSM products were stolen on three occasions. In each of the cases the truck driver was forced to stop on the highway, severely threatened and had to hand over truck and cargo. Fortunately, there were no personal injuries.

# Information about 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 markup 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 2018 was 175,322,889. All shares in issue are fully paid. On 31 December 2018, the company had 175,650,575 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 9 May 2018 this power was extended up to and including 9 November 2019, 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 if the issue takes place within the context of a merger or acquisition within the scope of DSM's strategy as published on the company website. 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 2018:

- ASR Nederland N.V.
- BlackRock, Inc.
- Capital Research and Management Company and Capital Group International Inc.
- NN Group N.V.
- Rabobank Nederland Participatie 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 9 May 2018, the Managing Board was authorized to acquire own shares for a period of 18 months from said date (i.e. up to and including 9 November 2019), 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.

DSM repurchased a number of its own shares during 2018 for the purpose of covering the company's commitments under existing management and employee option plans, share (unit) plans and stock dividend.

In 2018, DSM launched a first share buy back from 19 March 2018 for 1,600,000 shares for a total consideration of € 137 million. This program was destined to cover share-based compensation plans (500,000 shares) and stock dividend as part of the final dividend 2017 (1,100,000 shares). DSM launched a second share buy back from 13 August 2018 for 1,100,000 shares for a total consideration of € 99 million. This program was aimed at covering commitments under share-based compensation plans (500,000 shares) and commitments for stock dividend as part of the interim dividend 2018 (600,000 shares).

In 2018, DSM repurchased 2,700,000 of its own shares in total for a combined consideration of € 236 million.

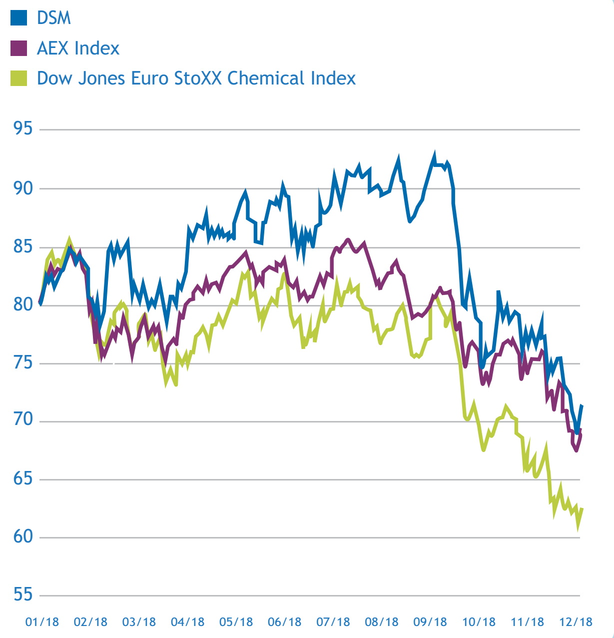
## Development of the number of ordinary DSM shares

| | 2018 | | | 2017 |
|---|---|---|---|---|
| | Issued | Repurchased | Outstanding | Outstanding |
| Balance at 1 January | 181,425,000 | 6,781,525 | 174,643,475 | 175,001,666 |
| Changes: | | | | |
| Reissue of shares in connection with share-based payment plans | - | (2,090,107) | 2,090,107 | 2,238,144 |
| Repurchase of shares | - | 2,700,000 | (2,700,000) | (4,500,000) |
| Dividend in the form of ordinary shares | - | (1,616,993) | 1,616,993 | 1,903,665 |
| Balance at 31 December | 181,425,000 | 5,774,425 | 175,650,575 | 174,643,475 |
| DSM share prices on Euronext Amsterdam (€ per ordinary share): | | | | |
| Highest closing price | | | 92.98 | 81.66 |
| Lowest closing price | | | 68.98 | 57.20 |
| At 31 December | | | 71.44 | 79.67 |
| Market capitalization at 31 December (€ million)[1] | | | 12,961 | 14,454 |

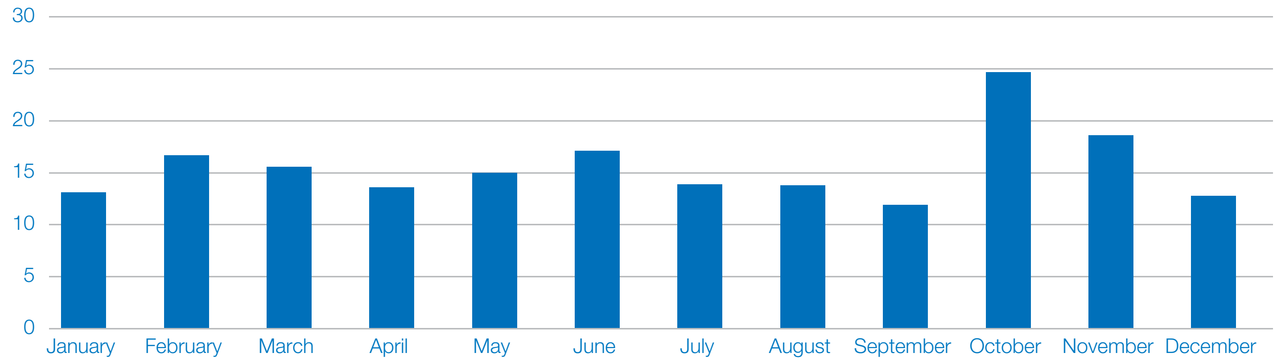
[1] Source: Bloomberg.

## Geographical spread of DSM shares outstanding

| in % (excl. cumprefs A) | 2018 | 2017 |
|---|---|---|
| North America | 38 | 37 |
| United Kingdom | 16 | 18 |
| Netherlands | 14 | 15 |
| France | 11 | 9 |
| Germany | 5 | 5 |
| Switzerland | 4 | 4 |
| Asia-Pacific | 5 | 4 |
| Other countries | 7 | 8 |



**Trading volume ordinary DSM shares 2018**
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 chapter 'Corporate governance' on page 108
- 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

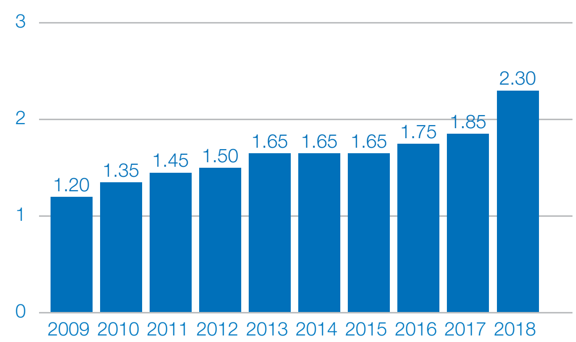
DSM's dividend policy is to provide a stable and preferably rising dividend. DSM proposes to increase the dividend to € 2.30 per ordinary share for 2018. This will be proposed to the Annual General Meeting of Shareholders to be held on 8 May 2019. An interim dividend of € 0.77 ordinary share having been paid in August 2018, the final dividend would then amount to € 1.53 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 11 May 2019.

### Dividend on Cumulative Preference Shares A

DSM will pay a dividend of € 0.17 per share for 2018, identical to the dividend on the cumprefs A for 2016 and 2017.

The dividend on the cumprefs A is based on the dividend yield of the ordinary shares, being about 2.74% for 2018. The Managing Board in consultation with the Supervisory Board decided to use their discretionary option to increase this percentage by about 52 bps to 3.26%. While the proposed dividend for the ordinary shareholders will increase by about 25% versus 2017, the Managing Board felt it appropriate to keep the dividend on the cumprefs A equal to 2017.

**Dividend per ordinary DSM share in €**
2018 dividend subject to approval by Annual General Meeting of Shareholders



# Sustainability statements

## Sustainability statements – People

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Total workforce** | 20,977 | 21,054 | 20,786 | 20,796 | 21,351 |
| Female/male ratio | 28/72 | 27/73 | 27/73 | 28/72 | 27/73 |
| **% by age category**[1] | | | | | |
| <26 years[2] | 5 | 6 | 6 | 5 | 6 |
| 26–35 years | 25 | 26 | 25 | 26 | 25 |
| 36–45 years | 30 | 28 | 28 | 30 | 29 |
| 46–55 years | 26 | 25 | 27 | 27 | 28 |
| >55 | 14 | 15 | 14 | 12 | 12 |
| **% non-Dutch**[1] | | | | | |
| Executives | 60 | 56 | 53 | 49 | 51 |
| Management | 70 | 70 | 67 | 68 | 64 |
| Other | 86 | 85 | 81 | 82 | 77 |
| **% female**[1] | | | | | |
| Executives | 19 | 17 | 15 | 15 | 12 |
| Management | 28 | 27 | 26 | 27 | 24 |
| Other | 28 | 28 | 29 | 29 | 28 |
| | | | | | |
| **% executive hires**[1] | | | | | |
| Non-Dutch | 83 | 95 | 88 | 79 | 88 |
| Female | 61 | 43 | 13 | 38 | 25 |
| **% new hires by region**[1] | | | | | |
| Netherlands | 13 | 11 | 5 | 11 | 11 |
| Rest of Europe | 22 | 26 | 23 | 22 | 19 |
| North America | 25 | 20 | 27 | 16 | 26 |
| China | 16 | 16 | 20 | 18 | 18 |
| Rest of Asia-Pacific | 9 | 11 | 8 | 13 | 18 |
| Rest of the world | 15 | 15 | 17 | 22 | 8 |
| **Total number new hires (excluding acquisitions)** | 3,005 | 2,203 | 1,730 | 2,171 | 1,997 |
| Acquisitions | 80 | 247 | 46 | 1810 | 169 |
| | | | | | |
| **Outflow of employees** [1] | | | | | |
| Voluntary resignations | 1,098 | 766 | 585 | 1,153 | 1,011 |
| Dismissed | 1,331 | 895 | 781 | 647 | 411 |
| Reorganization | 310 | 157 | 208 | 230 | 221 |
| Retirements | 114 | 112 | 143 | 170 | 167 |
| Deceased | 15 | 13 | 12 | 12 | 11 |
| **Total outflow (excluding divestments)** | 2,868 | 1,943 | 1,729 | 2,212 | 1,821 |
| Divestments | 357 | 42 | 57 | 2,324 | 2,479 |
| | | | | | |
| Voluntary resignations (% total workforce)[1] | 5.3 | 4.1 | 2.8 | 5.5 | 4.7 |
| Total resignations (% total workforce)[1] | 13.9 | 10.2 | 8.3 | 10.6 | 8.5 |
| | | | | | |
| Development training in hours per employee | 6[3] | | | | |
| Net sales per employee / net sales (underlying business) per employee (x € 1,000)[4] | 429 | 420 | 386 | 374 | 409 |
| | | | | | |
| **Safety** | | | | | |
| Frequency Index of Recordable Injuries (per 100 DSM employees and contractor employees) | 0.33 | 0.36 | 0.33 | 0.41 | 0.47 |

1 For the indexes based on age, nationalities, gender, inflow and outflow, the companies that are not integrated into the HR systems (approximately 2% of the total workforce) are not taken into account.
2 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.
3 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 is no relevant figure available for 2017.
4 Excluding temporary vitamin effect, see table on page 65

## Sustainability statements – Brighter Living Solutions

| | **2018** | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Brighter Living Solutions sales as % of net sales (underlying business) | 62[1,2] | 62 | 63[3] | | |

[1] Excluding temporary vitamin effect, see table on page 65.
[2] For a small percentage of sales (approximately 2% of sales) classified as BLS, the environmental impact is considered 'best in class' together with other solutions.
[3] 2016 was the first year of reporting; consequently, there are no comparative figures for the previous years.

## Sustainability statements – Planet

| | **2018** | 2017 | 2016 | 2015[1] | 2014[1] |
|---|---|---|---|---|---|
| **Energy and greenhouse gases** | | | | | |
| Energy use (in PJ) | 20.8 | 23.6 | 22.6 | 20.9 | 39.1 |
| Energy efficiency improvement (in %) versus 2015 | 5.1 | 3.8[2] | 2[3] | | |
| Greenhouse gas emissions scope 1 + 2, location-based (in $CO_2$ equivalents x million tons) | 1.38[4] | 1.57 | 1.5 | 1.1 | 4.2 |
| Greenhouse gas emissions scope 1 + 2, market-based (in $CO_2$ equivalents x million tons) | 1.23[4] | 1.50 | 1.4[3] | | |
| **Emissions to air** | | | | | |
| Volatile Organic Compounds (x 1,000 tons) | 4.9 | 6.6 | 8.9 | 3.1 | 4.2 |
| Nitrogen oxide ($NO_x$) (x 1,000 tons) | 0.5 | 0.7 | 0.8 | 0.4 | 1.5 |
| Sulfur dioxide ($SO_2$) (x 1,000 tons) | 0.09 | 0.28 | 0.33 | 0.04 | 0.08 |
| **Discharges to water and landfill** | | | | | |
| Chemical Oxygen Demand discharges to surface waters (x 1,000 tons) | 2.2 | 2.5 | 2.4 | 2.1 | 3.9 |
| Waste recycled (in %) | 83 | 84 | 83[3] | | |
| (Landfilling) Non-hazardous waste (x 1,000 tons) | 18 | 16[2] | 17.5 | 12.9 | 18.2 |
| **Water** | | | | | |
| Water consumption (x million $m^3$) | 22 | 23 | 22[3] | | |
| Water use (x million $m^3$) | 114 | 114 | 104 | 101 | 118 |
| **Raw materials** | | | | | |
| Renewable raw materials (in %) | 14.3 | 15.4 | 16.5 | 16 | 10.8 |
| **Biodiversity** | | | | | |
| Sites in or adjacent to protected areas (in %) | 66 | 61 | 60 | 58 | 52 |
| Fines (in €) | 23,500 | 128,400 | 27,900 | 35,600 | 62,500 |
| Non-monetary sanctions | 6 | 4 | 2 | 5 | 4 |
| Environmental incidents | 71 | 101 | 109[5] | 257 | 297 |
| Environmental complaints | 53 | 35 | 21 | 31 | 56 |

[1] DSM completed several material acquisitions and divestments over the period 2013–2015. The figures presented here are not restated for the effect of this activity and so do not accurately represent our environmental trends. For more information on our environmental footprint, please visit the company website.
[2] The 2017 number has been adjusted positively because of improved data quality.
[3] 2016 was the first year of reporting; consequently, there are no comparative figures for the previous years.
[4] Including a one-time effect of large plant shutdowns, estimated at roughly 150 kt. These effects will not occur in 2019.
[5] As of 2016, the Loss of Primary Containment of non-hazardous substances is no longer included in this number.

## 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, please see 'Stakeholders' on page 34. For information on how we engage with our employees, see 'People' on page 42.

## Customers

Our Strategy 2021: *Growth & Value - Purpose led, Performance driven* defines how we fulfil the current and future needs of our customers and of their consumers. Our starting point is our constantly evolving portfolio designed to serve our evolving customers' needs and attuned to their values. The launch of Maxilact® Smart illustrates the continuous improvement mindset. The premium, lactose-free product segment is growing fast, and this product supports our customers' ambitions in this market. Maxilact® Smart enables a significant increase in production efficiency and capacity at our customers on top of an effective reduction of lactose.

Our portfolio reflects our purpose and supports our pioneering customers. Our innovations contribute to Health, Nutrition and Sustainable Living. Whether it is Niaga® to create a 100% recyclable carpet, waterborne resins that have transformed the container paint industry in China or the creation of the Avansya partnership with Cargill for fermentative steviol glycosides, all these innovations were founded on our purpose-led philosophy and consumer needs.

### *Customer-centricity*

Customer-centricity is the cornerstone of our growth ambition: we strive to understand what drives value for our customers and build multi-level relationships to strengthen customer intimacy. To strengthen our customer relationships at strategic accounts, we have implemented the Triple Fit methodology developed by St. Gallen University's Account Management Center across our business groups. This proven and effective methodology aims to build and maintain high-value relationships with our strategic accounts by identifying and implementing joint value creation projects.

Co-development of solutions and offerings with our customers is a growing area in nearly all the industries we serve. Our partnership with Cooprata, a leading regional cooperative in Brazil to produce solutions for beef cattle, combines local raw materials with our vitamins. TruVitamins — a partnership in the human nutrition market — utilizes the product formulation, branding and marketing expertise of our Nutrition cluster with our customer Happy Enzyme for this new vitamin supplement. The value of the Quali® Brand on the product packaging is a point of differentiation for the consumers in Korea. Increasingly we complement our in-depth customer understanding with consumer understanding to address the needs of the entire value chain and enable incumbent and new players to differentiate themselves by means of our extensive, high-quality portfolio.

Our skilled professionals are continuously trained on what it means to be customer-centric, enabling us to continue bringing value to our customers. This was recognized through the prestigious 2018 EFMD Excellence in Practice Gold Award in the category 'Professional Development'.

### *Digitalization*

Data are critical to understanding the customer and its ecosystem. In 2018, the Data Analytics Center of Excellence was introduced. The data analytics capabilities that are being developed will help to accelerate the development, industrialization and adoption of insights and data analytics within DSM. Through this, we aim to create substantial and additional impact, adding value to our businesses and functions and gaining an ever better understanding of customer/consumer behaviors and needs.

Next to data, digital technologies also help us to strengthen our customer relationships, optimize customer touchpoints and create customer delight. One such example is the YiGouBao app developed for farmers in rural China. This app allows farmers to order products from our distributors in an easy way. It serves as a performance tracker for our customers. Through this new way of interacting we can reach an even larger group of farmers scattered across rural areas, leading to improved penetration in the market and a higher customer loyalty.

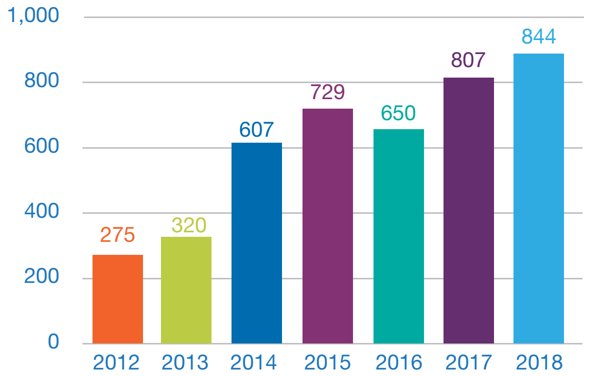
### *Customer loyalty*

We measure customer loyalty through the Net Promoter Score (NPS). In 2018, our NPS score reached 40 (2017: 39). NPS allows us to measure customer satisfaction across the full customer journey over a defined period. Additionally, we measure NPS at key moments of the customer journey to further optimize the process and enable improvements during the journey.

### *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 2018, our brand value continued its positive trajectory and reached € 844 million. Brand Finance attributed the increase to improved growth forecasts.

**DSM Brand Value**[1]
(x € million)

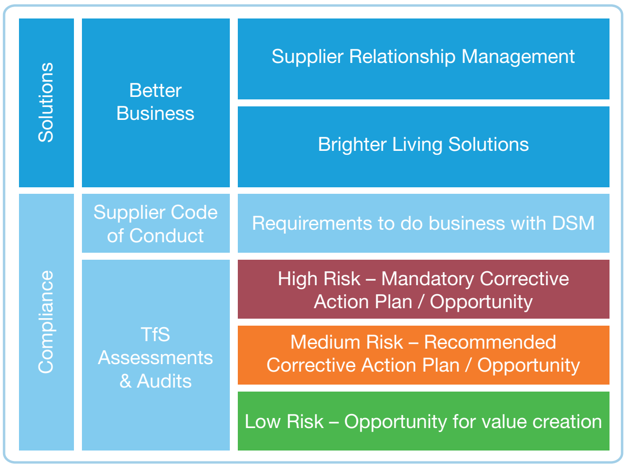



[1] As measured by the Brand Finance valuation methodology

## Suppliers

We engage with approximately 35,000 suppliers through our Supplier Sustainability Program (SSP) to strengthen our supply chain, reduce risk, lower cost and create value for society and our company. Annual supplier sustainability plans and sustainability roadmaps are used to gain insights. The Supplier Sustainability Plan 2018 addressed a number of relevant topics for the materiality matrix: 'Resource scarcity / Circular economy', 'Responsible business practices' and 'Climate change & renewable energy'.

*DSM Supplier Sustainability Program*




*Supplier Sustainability Program strategy*

Our Supplier Sustainability Program is comprised of two elements: Solutions and Compliance. Insights gathered in the compliance program enabled us to very clearly define how we choose to do business with our suppliers. We have invited suppliers to contribute to our competitiveness in areas of sustainability, innovation, business growth, security of supply, new business models and strategic alliances. This occurs via our 'Better Business' projects and other initiatives.

Our assessment of the maturity level of our SSP was conducted in 2016 and addressed four dimensions: Strategy/Plan; Supply Risk & Opportunity; People, Infrastructure & Measurements; and Processes. Those insights were used to develop our sourcing strategy and position to meet the ambition level for 2020.

*Internal skills and capabilities*

Internal capability-building regarding supplier sustainability continued in 2018. We have shifted the focus from delivering training toward providing hands-on support and promoting peer learning. The peer learnings offer practical experience and knowledge-sharing about integrating sustainability into the daily work of sourcing professionals.

In Indirect Procurement, we initiated a strategy project to increase our sustainability maturity. The strategy aims to move from compliance through supplier selection toward impacting the entire supply chain. The project includes an aligned and approved strategy by the review board, and repetitive trainings to raise sustainability awareness in the entire procurement organization. The supplier selection consists of the sustainable tender principle and risk management through Together for Sustainability insights (TfS). The impact is driven by including sustainability in our Key Supplier Management program and by developing specific sustainability strategies for high-impact categories.

Every year, the DSM Procurement community presents awards to teams who have developed successful projects in several categories, with sustainability a key topic in selecting the winners. The Strategic Sourcing Methodology (SSM) Award promotes strategic thinking, courage and creativity, while the Best Supplier Innovation (BSI) Award recognizes a successful collaboration with a supplier that brings value to DSM.

*Collaboration*

We work with external partners to enhance collaboration in the supply chain such as the Roundtable for Sustainable Palm Oil (RSPO) and TfS.

Our exposure to palm oil is very limited. DSM Nutritional Products is a member of RSPO due to the potential risks to the environment, human rights issues and labor practices in the palm oil supply chain. DSM Food Specialties sources RSPO 'Mass Balance' certified palm-derived glycerin in Asia. Our objective is to use 100% RSPO-certified sustainable palm oil and palm oil derivative products using RSPO 'Mass Balance' supply chain models by 2020. Going forward, we aim to have all of the production sites that use palm oil or palm oil derivative products RSPO-certified. For more information on palm oil, see the company website.

We have 'Friends of the Sea' certification for all of 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.

We held our inaugural Supplier Partnership Day in the Netherlands, which was attended by 75 key strategic suppliers. This event aimed at strengthening key partnerships and making our partners aware of our company's strategy to drive further progress in sustainability through reducing our environmental footprint while making a positive social impact. We value our strategic supplier partnerships in delivering tangible benefits in the areas of performance, innovation and sustainability. As part of the event, we showcased the specific contributions of excellent suppliers in different areas through our Supplier Awards.

*Compliance*

Our approach to compliance is defined in our Supplier Code of Conduct (SCoC). Through assessments and audits, we check that suppliers act in compliance with external and internal norms and values. Where a risk or breach occurs, we work with suppliers to define and execute an improvement plan. If non-compliance still persists, we may choose to terminate the relationship with the supplier. In 2018, 95% of our spend was covered by the SCoC.

**Supplier Sustainability Program results**

| | **2018** | | 2017 | |
|---|---|---|---|---|
| | Target | Achieved | Target | Achieved |
| Spend coverage SCoC | 95% | 95% | 95% | 96% |
| Sustainability assessments | 105 | 74 | 110 | 68 |
| Sustainability audits | 20 | 14 | 21 | 19 |
| Quality audits | - | 316 | - | 343 |
| Solutions | 23 | 36 | 35 | 62 |

We focus on approximately 1,000 critical suppliers, defined as those that provide critical components, are located in potentially high-risk countries, supply a high volume of products or services, are non-substitutable, or have the potential to create shared value in areas of innovation and sustainability.

Since 2015, we have been actively collaborating with TfS. Founded in 2011, TfS now has 22 members and aims to develop and implement a global audit program to assess and improve sustainability practices within the chemical industry's supply chain. TfS works with EcoVadis, a recognized provider of CSR ratings, to implement the program. The EcoVadis methodology is aligned with international standards and supervised by a scientific committee. This collaboration gives DSM access to supplier assessments and audits, which are executed by other TfS members and shared on the TfS platform. The EcoVadis assessment covers Environment, Labor & Human Rights, Ethics and Sustainable Procurement.

The collective (potential) supply base of the TfS members has been rated by 10,566 EcoVadis assessments and 1,526 TfS audits. In 2018, an additional 1,491 sustainability assessments were shared among TfS members and 358 new TfS audit reports were received by the initiative. In 2018, the average EcoVadis assessment score of suppliers that completed an assessment at DSM's request was 49 (up 1 point on 2017). The average of the supplier performance level indicates that our suppliers are engaged with sustainability.

In 2018, as a result of the new Strategy 2021, a new procurement sustainability vision was developed which includes a Procurement Sustainability roadmap that will guide our efforts toward sustainability and will impact TfS (re-)assessments in future years. This new roadmap will support the improvement of our low-scoring suppliers' sustainability performance by actively developing and following up on corrective actions. It will mark the start of a shift from quantity to quality of assessments, and more to sustainability related improvements in DSM's supply chain.

*Better business*

While compliance remains the cornerstone for achieving a sustainable supply base, procurement activities increasingly focus on so-called 'better business'.

As part of our drive to foster better business through our supplier solution projects, our procurement organization engages in proactive dialogue with suppliers in order to move the business agenda forward on topics such as climate change, food and nutrition security, health, and the circular economy. In this context, we pursue initiatives to create joint value, awareness and engagement using similar drivers to those in our Brighter Living Solutions methodology.

Via the $CO_2$ Emission Reduction Initiative, the Global Logistic and Packaging team investigated suppliers' footprints in road transportation, marine, packaging and air transportation to explore opportunities for improvement. Our aim of achieving a 20% reduction per unit of measurement in emissions by the end of 2020 compared to 2010 was reached by the end of

2017, the latest reporting period. This great achievement can be attributed to the engagement in joint initiatives with suppliers that led to environmental benefits in the value chain. Projects such as leveraging operations by optimizing logistics for glass fiber inbound logistics and utilizing non-dedicated containers to increase transport flexibility resulted in significant reduction in $CO_2$ emissions.

Through a collaboration between procurement, supplier and site colleagues, DSM Nutritional Products' site in Kingstree (Georgia, USA) achieved a raw material change that delivered significant advantages. The site uses an imported non-GMO dry dextrose raw material that is shipped in one-ton bags. Through the project, a switch to a liquid solution was realized that reduced material handling risks for the raw material. In addition to safety and ergonomic improvements, a productivity gain was realized thanks to the different biomass behavioral characteristics during the drying process.

### Investors

DSM values the essential role of its capital providers for the success and prosperity of the company, allowing it 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 its debt holders.

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. Next to the Annual General Meeting of Shareholders, we also reach out to the financial markets through events like the Capital Markets Day, participation in investor conferences, and by organizing roadshows. We also 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 rating agencies.

We actively seek feedback from the financial markets, which is discussed and assessed by the company's Managing Board and Supervisory Board from time to time. 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.

We introduced Strategy 2021: *Growth & Value - Purpose led, Performance driven* at our Capital Markets Day in London (UK) in June 2018. We presented how we will capture growth opportunities offered by global megatrends and the SDGs, and the ambitious targets for profit growth and cash generation that are associated with this. The market was also updated on how sustainable long-term organic growth will be supported by our large innovation projects.

This has led to an increased interest from investors and analysts with a strong Environment, Social and Governance (ESG)/SDG mindset. These parties recognize our efforts to pursue good financial returns together with acting with purpose.

We actively participated in various impact investment initiatives including De Nederlandsche Bank (DNB) working group on SDG Impact Measurement in 2018. We also participated in dedicated ESG conferences for investors such as the SRI conferences in The Hague (Netherlands) in March and in Paris (France) in November.

### Society

We engage with society at many levels. We collaborate with renowned universities and research institutes and work with NGOs and civil society to work on solutions for societal challenges. We engage with governments and society to advocate on important issues relating to the Paris Agreement and the Sustainable Development Goals. Here we share some examples of our collaborations with society.

*Scientific research institutions*
We are one of the founding partners of EIT FOOD, which is one of the six European Knowledge and Innovation Communities (KICs) of the European Institute of Innovation and Technology (EIT). The aim of EIT FOOD is to transform the food ecosystem. In 2018, together with our project partners we completed the first EIT FOOD Innovation, 'My Yogurt' – a project to tailor the health, sustainability and sensory attributes of yogurt for the millennial and 60+ generations. We also participated in the education project 'Tasty Macronutrients', looking at the use of plant-based proteins in food.

We are a founding member of the world-class nanotechnology center at MIT in Boston (Massachusetts, USA), which opened in October 2018. MIT.nano is an advanced facility open to the entire community of faculty, researchers, students and industry and will accelerate the pace of research at MIT and with its partners worldwide. We also sponsor collaborative projects to accelerate the innovation process, decreasing the time from the lab to the market.

In the Netherlands, our partnerships tend to be in the so-called golden triangle of governments, universities and knowledge institutions to jointly develop new markets and growth areas, creating jobs and economic value for the Netherlands. The successful growth of the Brightlands Chemelot Campus, which has the Province of Limburg, Maastricht University and DSM as its founding fathers, is an example of a successful partnership and a shared ambition. This has enabled the

Limburg region to become a magnet for top talent from the Netherlands and abroad.

*NGOs*

In Brazil, we support Gastromotiva, a non-profit organization that has reached more than 3,500 at-risk young people through articulated education, professionalism and gastronomy. We supply high nutritional value foods, improving the quality of life of people through micronutrient supplementation. In addition, DSM experts contribute by sharing technical-scientific knowledge for the 'Super-Gastromotive Food League' project, which aims to improve child nutrition and prevent childhood obesity.

In Singapore, we partner with 45Rice, a social enterprise dedicated to improving lives through nutrition. With the motto "Fortifying every meal", 45Rice brings essential vitamins and minerals to a bowl of rice.

*Local communities*

Our DSM Nutritional Products and Food Specialties site in Xinghuo (Shanghai, China) organized with the community an open day for residents to increase transparency and trust in the site. The theme of the open day was 'creating a green life together'. This initiative was welcomed by resident's leaders, the Development Zone and the Environmental Protection Bureau.

In Brazil, we support Enactus Brazil. Enactus is a network of students, executive and academic leaders that provides a platform for college students to create community development projects that put people's skills and talents in focus.

*Governments*

In Europe, DSM engages with governments at several levels. This includes specific visits from Members of Parliament, as well as speaking slots at multi-stakeholder events including the European Commission (EU Circular Business Conference), EEB, HollandBIO, the European Parliament and The European Forum for Industrial Biotechnology and the Bioeconomy.

## Management approach for material topics

In the following tables, we elaborate on the material topics defined in the materiality matrix (see 'Materiality' on page 35) and describe how we manage these topics.

### Society

| Health & wellness | Management approach | Relevant sections |
|---|---|---|
| An aging population, longer lives and changing consumer preferences frame this topic. The increase in non-communicable diseases, obesity and overweight is at odds with consumer preferences for healthier diets and 'natural' food.<br>Health and safety are dominant issues in the home and workforce, where poor health and safety can be a significant drain on individuals, businesses and society.<br>This topic aligns with SDG 3 (Good Health and Well-being). | Health and wellness aligns closely to our focus area of Nutrition & Health. Our Nutrition strategy targets health and well-being, including products that replace sugar, salt and fat. Our Biomedical devices improve health and the quality of life for surgical patients and combat disease. The importance of safety is highlighted in Materials, including safe manufacturing and safer products. We use safer alternatives where feasible and always when required. We strive to offer our staff a safe and healthy workplace. | Strategy 2018<br>Strategy 2021<br>People<br>Review of business |

| Malnutrition & nutrition security | Management approach | Relevant sections |
|---|---|---|
| Malnutrition continues to have major impact on communities around the world, the ramifications of which will be felt for years and affect all of society. Over 800 million people suffer from hunger and over one billion are unable to obtain food that is nutritionally sufficient for health and well-being.<br>This topic aligns with SDG 2 (Zero Hunger). | DSM works closely in partnerships with UN agencies, governments and NGOs to address the quality and availability of the food basket in the developing world. Our Nutrition Improvement provides nutrition and food solutions that address both emerging and developed markets. | Stakeholders — Collaborative platforms and networks<br>Nutrition |

| Global footprint | Management approach | Relevant sections |
|---|---|---|
| Renamed from 'Emerging economies' last year, this topic highlights the global nature of value chains and businesses. It is essential to understand local dynamics and the global context in order to effectively manage a global business. | Our global manufacturing footprint and our regional presence are central to managing our business. We are a company whose purpose is to create brighter lives for all. Customer-centricity is the cornerstone of our growth ambitions, which are centered around the three focus domains, described in Strategy 2021. We manage our global supply chains through our Supplier Sustainability Program. | Strategy 2021<br>Purpose<br>Sustainability statements — DSM Supplier Sustainability Program<br>Review of business |

| Geopolitical tensions & inequalities | Management approach | Relevant sections |
|---|---|---|
| The increasing tension in the political arena has ramifications for businesses and society at large. Political instability in the Middle East, global trade wars and the ever-present threat of terrorism continue to increase tension and inequality. This topic also captures the indirect impact of trade barriers. | Through partnerships and stakeholder engagement activities, we aim to monitor and steer topics relevant to our focus areas. Our Group Risk Management department monitors key developments in this area. — | Stakeholders — Collaborative platforms and networks<br>Risk management |

## Environment

| Climate change & renewable energy | Management approach | Relevant sections |
|---|---|---|
| The Earth is on track to break through the 1.5–2°C ceiling defined by the UN on climate change. Still, greenhouse gas emissions continue to rise. The open letter to world leaders from the Alliance for CEO Climate Leaders demonstrates business' commitment to deliver their contribution. Renewable forms of energy are an integral part of any discussion around climate change.<br>This topic aligns with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). | We manage this topic by improving our own carbon footprint through purchasing electricity from renewable sources and improving our energy efficiency, enabling our customers through innovative solutions and advocating action on climate through our collaborative platforms and networks. We publicly disclose our impact and strategy through, among others, CDP. | Stakeholders — Collaborative platforms and networks<br>Planet<br>Nutrition<br>Materials |

| Resource scarcity / Circular economy | Management approach | Relevant sections |
|---|---|---|
| Valuable resources continue to be lost in our linear economy. A transition to a circular economy, addressing closed loop solutions and renewable materials, is key to meeting the needs of current and future generations.<br>This topic aligns with SDG 12 (Responsible Consumption and Production). | We identify Resources & Circularity as a focus domain within Strategy 2021: *Growth & Value - Purpose led, Performance driven.* We consider circular and bio-based thinking in sourcing, operations, innovation and portfolio, and enabling 'closed loop' solutions through advocacy and partnerships. | Stakeholders — Collaborative platforms and networks<br>Planet<br>Materials<br>Innovation Center |

| Water security | Management approach | Relevant sections |
|---|---|---|
| Water is essential to life and all ecosystems. It is a global issue that has local consequences, from water scarcity to floods and storms. Climate change will only exacerbate water-related issues. Water security is an operational and reputational business risk for companies, including DSM. | We are committed to the responsible use of water resources. Our approach to water is defined in our Responsible Care Plan, and we address water from a risk-based approach. Through this approach, we address water-related issues in areas where they are needed most. We are a signatory to the UN Global Compact CEO Water Mandate. We disclose our water management and strategy via CDP. | Planet |

| Sustainable food systems | Management approach | Relevant sections |
|---|---|---|
| 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. In turn, food systems place pressure on the environment. A transition to sustainable food systems within planetary boundaries is needed to secure the future availability of food. | Through our animal nutrition products, we contribute to the sustainable production of animal protein. Within our Innovation Center, we explore new opportunities in sustainable animal- and plant-based proteins. Our solutions in food support food preservation and reduce food waste. Through our founding partnership in FReSH, we aim to transform global food systems. | Stakeholders — Collaborative platforms and networks<br>Nutrition<br>Innovation Center |

| Biodiversity | Management approach | Relevant sections |
|---|---|---|
| Biodiversity refers to the variety and variability of life on earth and is an important condition for a sustainable planet. Biodiversity supports relevant ecosystem services that we require, such as food, water and clean air. | Biodiversity is a locally relevant issue that potentially impacts 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. | Planet<br>Biodiversity position paper |

## Business Enablers

| Open innovation | Management approach | Relevant sections |
|---|---|---|
| Open innovation encourages us to look beyond our own borders for ideas and knowledge, and enables us to pool capabilities and resources with others. Companies that embrace open innovation typically grow faster and generate more sales. Open innovation and new technologies will help us deliver on the SDGs. | Our innovation and research & development capabilities support us in achieving our growth targets. Through collaborations with our value chain partners, we bring new thinking and new solutions into the company. Through our venturing activities, we invest in emerging innovative companies around the world. | Innovation Center |

| Careers & employment | Management approach | Relevant sections |
|---|---|---|
| Employees are one of the most important stakeholder groups for a company, and careers and employment are an important topic to companies and their stakeholders. Employees seek rewarding career opportunities and a healthy work-life balance. They actively seek companies, and engage with employers, that share their values. | We cannot achieve our purpose without our employees. Our people & organization strategy shapes our engagement with our employees. The DSM Ways of Working enable us to deliver our strategy. We invest in the learning and development of our talents and focus on improving the engagement, inclusiveness and diversity of our global employees. We apply the International Labour Standards of the ILO. | People |

| Advocacy & stakeholder engagement | Management approach | Relevant sections |
|---|---|---|
| Companies are playing an increasing role in contributing to the SDGs. Business leaders are urged to be advocates on issues that are important to their business activities. Companies should engage with internal and external stakeholders to understand key issues and the positions they should take. | We advocate on our focus areas of Nutrition & Health, Climate & Energy and Resources & Circularity. Our purpose recognizes our key stakeholders and describes how and why we engage with them. We are proud of the reputation we have built, and actively manage it. | Purpose<br>Stakeholders<br>Sustainability Statements — Stakeholder engagement |

| Trade barriers | Management approach | Relevant sections |
|---|---|---|
| This topic is closely linked to 'Geopolitical tensions & inequalities' but focuses on the direct impact of trade barriers on businesses. Global trade wars, as well as trade controls, sanctions and embargoes, and restrictions on chemicals are key topics that businesses face. | The DSM Code of Business Conduct is central to our approach on this topic. In our supply chain, the Supplier Code of Conduct and our Supplier Sustainability Program define our approach. Trade Control Compliance is managed through our standard business processes and practices. | DSM Code of Business Conduct |

| Digital transformation | Management approach | Relevant sections |
|---|---|---|
| Digitization is transforming the world we live in and the way we do business. Digitalization impacts multiple areas in business, from manufacturing, through to marketing & sales and careers & employment. Digital also has the potential to disrupt our end-markets, from automotive to medical. | Our Data Analytics Center of Excellence 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. | Risk management<br>Sustainability Statements — Customers |

## Governance

| Responsible business practices | Management approach | Relevant sections |
|---|---|---|
| A company's license to operate is conditional on its approach to business. Companies such as ours are expected to do business in a responsible way. This topic covers a wide range of sub-topics including taxation; corporate governance; human rights; labor policies; Safety, Health and Environment (SHE); anti-bribery and corruption; and privacy. | We take our responsibilities as a business seriously. Our approach toward responsibility is defined in the DSM Code of Business Conduct, Supplier Code of Conduct, our people & organization strategy and our human rights policy. Our tax position is consistent with the normal course of our business operations and reflects our corporate strategy as well as the geographic spread of our activities. Through this Report, and our public statements on the company website, we provide transparency in our reporting. Our position paper on Taxation can be found on the company website. | People<br>DSM Code of Business Conduct<br>Corporate governance and risk management<br>Taxation position paper |

| Product & food safety | Management approach | Relevant sections |
|---|---|---|
| Product & food safety is an operational and reputational risk. If properly managed, it can also present opportunities to companies. The impact of poor product & food safety can lead to injury or death. | Product & food safety is addressed via our approach to product stewardship and our Supplier Sustainability Program. 'Safe by design' is the leading principle in the development of new and better products and services. Our business processes require us to have practices in place that address quality through the production, handling, preparation, storage and use of our solutions. | Planet — Product stewardship<br>Sustainability Statements — Suppliers<br>Review of business |

| Bioethics | Management approach | Relevant sections |
|---|---|---|
| For us, Bioethics refers to the area of biotechnology. It has the potential to support the world with products and services in a time of resource scarcity, climate change and population changes. Genetic modification is treated with suspicion and concern, and it is important to recognize and address these concerns openly. | Our position paper on Industrial Biotechnology can be found on the company website. Our consultations with relevant scientific organizations, industry, NGOs and governments lead our approach to this topic. Genetically modified micro-organisms (GMMs) are employed in the production process of some of our products, however we do not sell GMMs or products containing GMMs. | Biotechnology position paper |

| Product stewardship | Management approach | Relevant sections |
|---|---|---|
| Companies are expected to take responsibility for the effects of their products and solutions on human and animal health and the environment throughout the product life cycle. | Our product stewardship statement describes our approach on this topic. We assess our products and will have an action plan in place for substances of very high concern. 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. | Planet — Product stewardship |

## Taskforce for Climate-related Financial Disclosures (TCFD)

The Taskforce for Climate-related Financial Disclosures (TCFD) recommendations are a set of voluntary, climate-related financial disclosures for use by companies to provide information to their stakeholders. In 2017, we were among the first companies to commit to implementing, as fully as practicable, these recommendations over the following three years as outlined in the TCFD's implementation path. The recommendations are structured around four themes — 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*

#### IAR Disclosures

Sustainability, including climate risks & opportunities, is a direct responsibility of the Managing Board. Sustainability is an integral part of how we do business. It is a key responsibility, our company's core value, and a business growth driver. Our CFO is responsible for the implementation of the TCFD recommendations and has appointed a taskforce for this.

**Sustainability Governance Framework.** Defines in more detail how Sustainability, including climate-related topics, is governed within our company. Our external Sustainability Advisory Board acts as sparring partner to the Managing Board and senior executives.

**Supervisory Board — Committees.** The Sustainability Committee prepares the Supervisory Board's discussions on sustainability topics, including our low-carbon future, improving our climate impact, and reducing our climate risk exposure.

### *Strategy*

#### IAR Disclosures

It is our strategy to grow our business by offering innovative sustainable solutions, some of which can clearly help to deal with climate risks.

**Strategy 2021.** Through our approach to sustainability based on *Improve*, *Enable* and *Advocate* we de-risk our own operations and we capture growth opportunities via our products and innovations. Products in our focus area Climate & Energy enable our customers to deliver solutions to deal with the impact of climate risks. A Risk Assessment was performed on Strategy 2021 including Climate Risks.

**Planet.** The sections on Climate change & renewable energy and Water security outline how we adapt to and mitigate climate change in our own operations. We apply an internal carbon price of €50/t $CO_2$eq in our investment proposals.

**Review of business.** Our portfolio of Health, Nutrition and Sustainable Living products addresses our focus domains. In Innovation, our big-ticket innovations derive from opportunities we have identified in those domains.

#### Future considerations

**Scenario analysis.** We are still defining our approach toward resilience and scenario analysis. We have joined the WBCSD Preparer Forum for the Chemical sector and scenario analysis will be one of the main items to jointly work on.

**Time horizons.** We have defined our time horizons, via our CDP disclosure, but these are not yet integrated, together with the accompanying issues, in our Annual Report.

### *Risk Management*

#### IAR Disclosures

**Risk Management.** Climate risks are integrated in our normal risk management processes and also monitored as such in the Managing Board. Additional focus has been placed on climate related risks during our bottom-up 'Letter of Representation' process to sensitize the organization to long term climate risks. Climate risk is again identified in our Corporate Risk Assessment as an emerging risk with both transitional and physical aspects.

#### Other considerations

**Risk Management.** Quantification and monetization of long-term climate-related risks needs to be addressed.

### *Metrics and Targets*

#### IAR Disclosures

**Strategy 2021.** Our Scope 1 + 2 target is based on a below 2°C scenario and is supported by a range of measures including our energy efficiency improvement and renewable electricity targets.

**Planet.** We disclose our Scope 1 + 2 and Scope 3 emissions, and risks and opportunities relating to them. We apply an internal carbon price of €50/t $CO_2$eq in our large investment proposals. We also report on avoided emissions, water, waste, and other emissions.

**Remuneration policy of the Managing Board.** Climate-related metrics are part of the Short-Term and Long-Term Incentives of the Managing Board.

#### Future considerations

**Additional Metrics.** We disclose additional information about DSM's footprint via CDP and the company website. These are not yet integrated into this Report. The targets and metrics will be updated as risk assessments and scenario analysis will develop further.

## DSM and the Sustainable Development Goals

All 17 of the UN Sustainable Development Goals (SDGs) are important. Our level of engagement with each of the SDGs varies. While our focus areas of Nutrition & Health, Climate & Energy and Resources & Circularity link most closely to our 'key' SDGs 2, 3, 7, 12 and 13, we also engage with the other SDGs.

Through partnerships such as the WFP and Africa Improved Foods (AIF), we contribute to economic development and agricultural learning in developing countries.
Engagement: Moderate

Through our partnership with WFP and our joint venture, AIF, we contribute to agricultural learning. We provide learning opportunities to our employees following the 70:20:10 principle.
Engagement: Minor

We aim to have a better gender diversity in our executive population and talent pipeline. Through partnerships, such as with Catalyst, we foster female participation.
Engagement: Moderate

Water is a global issue that has local impact. Our approach to water is local and risk-based. We mitigate water-related risks as required.
Engagement: Minor

Our partnerships and our joint venture, AIF, demonstrate our role in the developing world. We contribute to local development and economies through our global footprint.
Engagement: Moderate

Innovation is central to DSM today, and for the future, and enables us to make a positive contribution to society. Our R&D footprint is global in nature.
Engagement: Moderate

We are an equal opportunity employer, as detailed in our Code of Business Conduct, and we expect the same from our value chain partners. At local level, we work with local programs to address inclusive employment.
Engagement: Moderate

We support philanthropic initiatives in local communities. Through our products, we contribute to safer and more sustainable buildings and transportation.
Engagement: Minor

Our joint venture, Veramaris®, helps reduce the reliance on the ocean ecosystem for food. Like DSM Dyneema in nets, Veramaris® supports sustainable aquaculture. Through our partnership with The Ocean Cleanup, we support the removal of plastic waste from our oceans.
Engagement: Moderate - Major

We monitor areas of high biodiversity near our sites. We employ sustainable biomass as a raw material. Through our products, we support the reduction of land use for agricultural purposes.
Engagement: Minor

Our Code of Business Conduct details our approach to ethics, business and good corporate governance.
Engagement: Minor

Partnerships are crucial to achieve the other 16 SDGs. Our partnerships enable and support our advocacy on key societal topics. Information on our partnerships is described throughout this Report.
Engagement: Major

### Philanthropy and sponsorships

We are recognized for our efforts in our sustainable growth areas of Nutrition & Health, Climate & Energy and Resources & Circularity. On top of this, we also engage in philanthropic and sponsorship activities. In 2018, we again donated funds to a range of initiatives, resulting in an on average yearly contribution of around €6 million over the next few years, which is in line with previous years. As outlined in our Code of Business Conduct, we do not make political donations. The full text of the Code can be found on the company website.

*DSM Brighter Living Foundation*
In 2018, DSM established and sponsored the DSM Brighter Living Foundation (full name: Stichting Royal DSM – Brighter Living). The Foundation aims to support initiatives and activities in and outside the Netherlands that promote social and ecological awareness and are aligned with our People and Planet approach. Examples of these are the development of sustainable innovative solutions or solutions that answer to societal needs and contribute to brighter lives. The Foundation operates independently of DSM, but has a strong connection to us, given the link between the aim of the Foundation and our strategy. In 2018, DSM and the Foundation started the transfer of former beneficiaries of donations and contributions from us to the Foundation. This process will be finalized in 2019.

*Asia-Pacific*
On International Children's Day, a group of DSM 'Rainbow Ambassadors' delivered lectures on English, science, and the Netherlands to local school students in China. We provided them with new summer school uniforms and water dispensers to address water hygiene.

In India, we contributed to the Jeewan Jyoti Women's Empowerment Institute. This Institute aims to address women's empowerment and combat malnutrition in rural Pune. Our contribution will fund eight teachers over three years to support the Institute. In addition to financial support, we are also exploring how our fortified foods could be involved in the program.

*Europe*
In the Netherlands, our activities focus on knowledge and education, innovation, arts and culture and sports. We are engaged in long-term partnerships, such as the Nemo Science Museum in Amsterdam; Artis Microbia (Amsterdam), the world's first museum of microbes; the Bonnefanten Museum in Maastricht; and Natuurmonumenten, a Dutch association that manages and protects natural resources in the Netherlands.

We are a proud partner of Team Sunweb, and we support the cyclists with innovations that support their performance, such as tailor-made multivitamin supplements, Fruitflow® (to support healthy blood flow), PeptoPro® (to support recovery) and bib-shorts (containing DSM Dyneema, to protect cyclists from abrasions).

*Latin America*
We supported a number of educational initiatives such the Young Professional Project in Mairinque (Brazil), and PALCO Project in Jaguaré (Brazil). These initiatives engage with students on education, careers and job market with local high school students. We also supported the Agrinho program, an initiative of the National Service of Rural Knowledge (SENAR), which has provided educational material and trained teachers in dozens of cities.

Local Initiatives supporting environmental awareness in Brazil included a school partnership for a vegetable garden, engaging the students in growing food that will be used in school meals, and tree planting activities with students and teachers on Earth Day.

*North America*
We continued to support the Union County College Foundation Close the Gap initiative to provide scholarships to help African American students complete their degrees. We also continued to work with the Global Health Corps to underwrite the cost of two Fellows to 1,000 Days to further public health equity.

The DSM NA employee relief fund also continued throughout the year to support employees who were adversely impacted by natural disasters.

*Sight and Life*
*Sight and Life* Foundation is a humanitarian nutrition think tank delivering innovative solutions to eliminate all forms of malnutrition in children and women of childbearing age and improve the lives of the world's most vulnerable populations. Through continued support of the *Sight and Life* Foundation, DSM delivers value in the nutrition sphere by accelerating the translation of science to innovative solutions at scale.

The *Sight and Life* Foundation is engaged in many initiatives, such as OBAASIMA, creating demand for nutritious food in Ghana; the recently launched Nutrition Kiosk for good nutrition in low- and middle-income countries; and the EGGciting project, making eggs available and affordable to low-income households through new poultry business models.

Creating new knowledge and thought leadership on key public health topics is an essential part of *Sight and Life*'s work, and in December 2018 *Sight and Life* Foundation launched a special issue of *Sight and Life* Magazine on the double burden of malnutrition, which brings new voices to the discourse, including private-sector actors in the food system. For more information, please visit: www.sightandlife.org

# 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 2018.

### Effect of new accounting standards adopted in 2018
The International Accounting Standards Board (IASB) and IFRIC have issued IFRS 9 and IFRS 15, which became effective as of 1 January 2018. DSM's accounting policies were updated to reflect the changes driven by the implementation of these standards. For completeness, a summary of the impact on the accounting policies is provided below as well.

### IFRS 9 'Financial Instruments'
IFRS 9 replaced IAS 39 'Financial Instruments: Recognition and Measurement'. For DSM this mainly impacted the classification and measurement of its other participating interests (OPI) reported under Other financial assets, which under IAS 39 were accounted for as available for sale securities measured at fair value, with changes in fair value recognized in Other comprehensive income (OCI) or at cost. Under IFRS 9, these OPIs will be measured at Fair value through profit or loss (FVTPL). However, in certain cases DSM will use the irrevocable election to classify an OPI at Fair value through OCI (FVOCI). The impact of this re-measurement was not material. The table below summarizes the impact of IFRS 9 on the measurement of the OPIs. The difference in the carrying amount is recognized in retained earnings at 1 January 2018.

| | Original classification under IAS 39 | New classification under IFRS 9 |
|---|---|---|
| *Financial assets* | | |
| Other financial assets – OPI | Available for sale Fair value / At cost | FVTPL/FVOCI |
| Carrying amount | 89 | 90 |

Another impact of the implementation of IFRS 9 was the introduction of a new model for impairment, the Expected credit loss (ECL) model. For DSM, this model resulted in the recognition of a small and therefore insignificant default credit loss risk for loans to, and guarantees for, third parties and associated parties. For trade receivables, the transition to the new loss model did not have a significant impact on the valuation.

With regard to hedge accounting, DSM has elected to apply as of 1 January 2018 the new hedge requirements from IFRS 9 instead of the old requirements from IAS 39. This has no direct reportable impact on DSM's hedge practices. However, it ensures that the company's hedge accounting relationships are aligned with its risk management objectives and strategy, and it provides a more qualitative and forward-looking approach to assessing hedge effectiveness.

DSM has applied IFRS 9 retrospectively from 1 January 2018 and used the option not to restate comparative information for prior periods.

### IFRS 15 'Revenue from contracts with customers'
IFRS 15 provides a framework for revenue recognition replacing old standards like IAS 11 'Accounting for Construction Contracts' and IAS 18 'Revenue'. DSM has adopted IFRS 15 as of 1 January 2018 using the cumulative effect method, where the impact of adoption should be recognized in retained earnings as of 1 January 2018, and the comparatives will not be restated. The effect of applying IFRS 15, however, was immaterial and did not have a significant impact on revenue recognition compared to the old revenue recognition policies.

### Effect of forthcoming accounting standards not yet applied
IFRS 16 is forthcoming but is not yet being applied by DSM. It will be adopted on the required effective date of 1 January 2019.

### IFRS 16 'Leases'
IFRS 16 establishes a new model for lessee accounting that requires a lessee to recognize right-of-use assets and lease liabilities for the rights and obligations created by leases.

Additionally, the nature of expenses related to leases will change, as IFRS 16 replaces the straight-line operating lease expense with a depreciation charge for right-of-use assets and interest expense on lease liabilities. Furthermore, the classification of cash flows will also be affected, as operating lease payments under IAS 17 are presented as operating cash flows, whereas under the IFRS 16 model, the lease payments will be split into a principal and an interest portion which will both be presented as financing cash flows. The new standard is effective for annual reporting periods beginning on or after 1 January 2019.

During 2018, DSM finalized its impact assessment of IFRS 16 on its consolidated financial statements. The standard will primarily affect the accounting for DSM's operating leases. The impact assessment performed indicates that the majority of these arrangements will meet the definition of a lease under IFRS 16, and hence DSM will recognize a lease liability and a corresponding right-of-use asset in respect of these leases. Based on the impact assessment of IFRS 16, DSM expects that the recognition of the leases will result in an impact of around €208 million on the balance sheet and will result in a reclassification in the profit and loss from operating expenses to depreciation/amortization and financial expenses of around €45 million. It should be noted that these are management estimates based on assumptions and contract data gathered up to and including 2018.

The actual impact of applying IFRS 16 on the financial statements in the period of initial application will depend on future economic conditions, including DSM's borrowing rate in 2019, the composition of DSM's lease portfolio at that date, DSM's latest assessment of whether it will exercise any lease renewal options, and the extent to which DSM chooses to use practical expedients and recognition exemptions, as well as the transition approach.

DSM plans to apply the modified retrospective transition approach under which the right-of-use asset is measured at an amount equal to the lease liability, adjusted for any prepayments or accruals.

New IFRIC interpretations are not expected to have a material effect on the financial statements of DSM.

### Consolidation

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. 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 to 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.

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.

### 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 in so far 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

Finance leases, which transfer to the group substantially all the risks and benefits incidental to ownership of the leased item, are capitalized at inception of the lease at the fair value of the leased property or, if lower, at the present value of the minimum lease payments. All other leases are operating leases.

Lease payments for finance leases are apportioned to finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are included in interest costs.

Capitalized leased assets are depreciated over the shorter of the estimated useful life of the asset or the lease term. Operating lease payments are recognized as an expense over the lease term.

## 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 where 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.

## Non-derivative financial instruments

DSM initially recognizes loans and receivables and debt securities on the date when they are originated. All other financial assets and financial liabilities are initially recognized 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 cancelled, 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 to hold-to-collect contractual cash flows only. Loans and long-term receivables 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 nominal value, less an adjustment for expected credit loss. The proceeds from these assets and the gain or loss upon their disposal are 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. With the adoption of IFRS 9 in 2018, DSM has opted for the existing other participating interests to apply the irrevocable election to present fair value changes in other comprehensive income (Fair value reserve) instead of profit or loss. These changes will not be recycled through profit and loss upon disposal of the asset. Dividends received will be presented in profit or loss.

## Impairment of assets

When there are indications that the carrying amount of a non-current 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-current 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.

## Expected credit loss

All financial assets measured at amortized cost are reviewed for expected credit loss as of initial recognition of the asset. 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 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 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 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 held for sale and disposal groups 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 cancelled 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, and the result on the transaction is presented as share premium. 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 interest costs.

### 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. Amortized cost is calculated taking into account any discount or premium. Interest expenses are recorded in profit or loss.

Where 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.

### Financial derivatives
Financial derivatives are recognized on the day of trading at fair value, with changes recognized in profit and loss.

### Revenue for contracts with customers

Revenues from contracts with customers are 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, which is at the point in time when transfer of control of the goods passes to the buyer, is satisfied. This revenue is measured at the fair value of the transaction price received.

Income coming from the rendering of services is recognized when the service, i.e. the performance obligation, has been performed. The revenue is measured at the fair value of the transaction price received.

Net sales represent the invoice value less estimated rebates and cash discounts, and excluding indirect taxes.

Income relating to the sale or licensing of technologies or technological expertise is recognized in the income statement at a point in time when the contractually identified performance obligations are satisfied, such as transfer of the rights and obligations associated with those technologies. This income is reported in Net sales when the income is part of the ordinary and recurring activities of the business and, if not, 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

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 (Share Appreciation Rights). No expense is recognized for options that do not ultimately vest, except for options where vesting is conditional upon a market condition, which are treated as vesting, irrespective of whether or not the market condition is satisfied, provided that all other performance conditions are met.

Performance shares and restricted share units are granted free of charge and vest after three years on the achievement of previously determined targets. 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.

### 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 to material items of income and expense arising from circumstances such as Acquisitions/ divestments, Restructuring, Impairments and Other.

'Other' APM adjustments 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. 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. They 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 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.

### Financial instruments

Financial instruments are contractually agreed 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.

### Financial derivatives and hedging

The group uses financial derivatives such as foreign currency forward contracts and interest rate swaps to hedge risks associated with foreign currency and interest rate fluctuations. Financial derivatives are initially recognized in the balance sheet at fair value. Subsequently, financial derivatives, bank balances and deposits in foreign currency are valued against the rates applicable on the balance sheet closing date. Changes in fair value are recognized in profit or loss unless cash flow hedge accounting or net investment hedge accounting is applied. For the measurement basis, see page 205.

Changes in the fair value of financial 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. Changes in the fair value of financial 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 financial 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

DSM has both defined contribution plans and defined benefit plans. In the case of defined contribution plans, obligations are limited to the payment of contributions, which are recognized as Employee benefit costs. In the case of 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 | 2018 | 2017 |
|---|---|---|---|
| | | | |
| Net sales | 5 | 9,267 | 8,632 |
| Cost of sales | 5 | (5,862) | (5,699) |
| **Gross margin** | | **3,405** | **2,933** |
| | | | |
| Marketing and sales | | (1,303) | (1,221) |
| Research and development | | (348) | (334) |
| General and administrative | | (530) | (524) |
| Other operating income | | 104 | 104 |
| Other operating expense | | (83) | (112) |
| | 5 | **(2,160)** | **(2,087)** |
| | | | |
| **Operating profit** | | **1,245** | **846** |
| Financial income | 6 | 18 | 35 |
| Financial expense | 6 | (119) | (139) |
| | | | |
| Profit before income tax expense | | 1,144 | 742 |
| Income tax expense | 7 | (194) | (115) |
| Share of the profit of associates and joint ventures | 10 | 11 | (83) |
| Other results related to associates and joint ventures | 10 | 118 | 1,237 |
| | | | |
| **Profit for the year** | | **1,079** | **1,781** |
| | | | |
| Of which: | | | |
| Profit attributable to non-controlling interests | 17 | 2 | 12 |
| **Net profit attributable to equity holders of Koninklijke DSM N.V.** | | **1,077** | **1,769** |
| | | | |
| Dividend on cumulative preference shares | | (8) | (8) |
| | | | |
| **Net profit available to holders of ordinary shares** | | **1,069** | **1,761** |
| | | | |
| Earnings per share (EPS) (in €): | | | |
| - Net basic EPS | 2 | 6.10 | 10.07 |
| - Net diluted EPS | 2 | 6.06 | 10.04 |

Please refer to Note 2 'Alternative performance measures' for the reconciliation to Adjusted EBITDA of € 1,822 million (2017: € 1,445 million) and other adjusted IFRS performance measures.

## Consolidated statement of comprehensive income

| x € million | 2018 | 2017 |
|---|---|---|
| **Items that will not be reclassified to profit or loss** | | |
| Remeasurements of defined benefit pension plans | (77) | 83 |
| Fair value changes Other participating interests | 16 | (3) |
| Exchange differences on translation of foreign operations relating to the non-controlling interests | (1) | (8) |
| | | |
| **Items that may subsequently be reclassified to profit or loss** | | |
| Exchange differences on translation of foreign operations | | |
| - Change for the year | 129 | (610) |
| - Reclassification adjustment to the income statement | 14 | (14) |
| Hedging reserve | | |
| - Change for the year | (44) | 98 |
| - Reclassification adjustment to the income statement | 22 | (39) |
| | | |
| Equity accounted investees - share of Other comprehensive income | (4) | 4 |
| | | |
| **Other comprehensive income, before tax** | **55** | **(489)** |
| | | |
| Income tax (expense)/income relating to: | | |
| - Remeasurements of defined benefit plans | 11 | (9) |
| - Exchange differences on translation of foreign operations | 2 | (9) |
| - Hedging reserve | 7 | (7) |
| Total income tax (expense) / income | 20 | (25) |
| | | |
| **Other comprehensive income, net of tax** | **75** | **(514)** |
| | | |
| Profit for the year | 1,079 | 1,781 |
| | | |
| **Total comprehensive income** | **1,154** | **1,267** |
| | | |
| Of which: | | |
| - Attributable to non-controlling interests | 1 | 4 |
| - Attributable to equity holders of Koninklijke DSM N.V. | 1,153 | 1,263 |

## Consolidated balance sheet at 31 December

| x € million | Notes | 2018 | 2017 |
|---|---|---|---|
| | | | |
| **Assets** | | | |
| **Non-current assets** | | | |
| Intangible assets | 8 | 3,090 | 3,058 |
| Property, plant and equipment | 9 | 3,511 | 3,313 |
| Deferred tax assets | 7 | 248 | 281 |
| Share in associates and joint ventures | 10 | 205 | 227 |
| Financial derivatives | 23 | 14 | 16 |
| Other financial assets | 11 | 263 | 475 |
| | | **7,331** | **7,370** |
| **Current assets** | | | |
| Inventories | 12 | 1,993 | 1,848 |
| Trade receivables | 13 | 1,575 | 1,542 |
| Income tax receivables | 13 | 83 | 55 |
| Other current receivables | 13 | 80 | 93 |
| Financial derivatives | 23 | 21 | 41 |
| Current investments | 14 | 1,277 | 954 |
| Cash and cash equivalents | 15 | 1,281 | 899 |
| | | **6,310** | **5,432** |
| | | | |
| **Total** | | **13,641** | **12,802** |
| | | | |
| **Equity and liabilities** | | | |
| **Equity** | 16 | | |
| Shareholders' equity | | 7,782 | 6,962 |
| Non-controlling interests | 17 | 33 | 103 |
| | | **7,815** | **7,065** |
| **Non-current liabilities** | | | |
| Deferred tax liabilities | 7 | 254 | 259 |
| Employee benefit liabilities | 24 | 413 | 356 |
| Provisions | 18 | 116 | 151 |
| Borrowings | 19 | 2,272 | 2,551 |
| Financial derivatives | 23 | 3 | 4 |
| Other non-current liabilities | 20 | 197 | 188 |
| | | **3,255** | **3,509** |
| **Current liabilities** | | | |
| Employee benefit liabilities | 24 | 46 | 39 |
| Provisions | 18 | 37 | 53 |
| Borrowings | 19 | 380 | 77 |
| Financial derivatives | 23 | 51 | 20 |
| Trade payables | 21 | 1,430 | 1,452 |
| Income tax payables | 21 | 100 | 51 |
| Other current liabilities | 21 | 527 | 536 |
| | | **2,571** | **2,228** |
| | | | |
| **Total** | | **13,641** | **12,802** |

## 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 2017 | **338** | **489** | **(339)** | **396** | **5,188** | **6,072** | **108** | **6,180** |
| Dividend | - | - | - | - | (320) | (320) | (3) | (323) |
| Options / performance shares granted | - | - | - | 26 | - | 26 | - | 26 |
| Options / performance shares exercised / canceled | - | - | - | (22) | 22 | - | - | - |
| Reissued shares | - | - | 238 | - | (5) | 233 | - | 233 |
| Change in DSM's share in subsidiaries | - | - | - | - | - | - | (6) | (6) |
| Repurchase of shares | - | - | (297) | - | - | (297) | - | (297) |
| Reclassification | - | - | - | (18) | 18 | - | - | - |
| Other | - | - | - | - | (15) | (15) | - | (15) |
| Total comprehensive income | - | - | - | (581) | 1,844 | 1,263 | 4 | 1,267 |
| Balance at 31 December 2017 | **338** | **489** | **(398)** | **(199)** | **6,732** | **6,962** | **103** | **7,065** |
| Dividend | - | - | - | - | (365) | (365) | (3) | (368) |
| Options / performance shares granted | - | - | - | 25 | - | 25 | - | 25 |
| Options / performance shares exercised / canceled | - | - | - | (23) | 23 | - | - | - |
| Reissued shares | - | - | 263 | - | (21) | 242 | - | 242 |
| Change in DSM's share in subsidiaries | - | - | - | - | - | - | (67) | (67) |
| Repurchase of shares | - | - | (236) | - | - | (236) | - | (236) |
| Other | - | - | - | - | 1 | 1 | (1) | - |
| Total comprehensive income | - | - | - | 142 | 1,011 | 1,153 | 1 | 1,154 |
| Balance at 31 December 2018 | **338** | **489** | **(371)** | **(55)** | **7,381** | **7,782** | **33** | **7,815** |

## Consolidated cash flow statement (Note 26)

| x € million | | 2018 | | 2017 |
|---|---|---|---|---|
| | | | | |
| *Operating activities* | | | | |
| Profit for the year | | 1,079 | | 1,781 |
| Share of the profit of associates and joint ventures | | (129) | | (1,154) |
| Income tax | | 194 | | 115 |
| Profit before income tax expense | | 1,144 | | 742 |
| Financial income and expense | | 101 | | 104 |
| Operating profit[1] | | 1,245 | | 846 |
| Depreciation, amortization and impairments | | 509 | | 502 |
| Earnings before interest, tax, depreciation and amortization (EBITDA)[1] | | 1,754 | | 1,348 |
| Adjustments for: | | | | |
| - (Gain) or loss from disposals | (22) | | (5) | |
| - Acquisition/divestment related in EBITDA | 16 | | 2 | |
| - Change in provisions | (41) | | (3) | |
| - Defined benefit plans | (25) | | (61) | |
| | (72) | | (67) | |
| Income tax received | 15 | | 15 | |
| Income tax paid | (122) | | (81) | |
| Share-based compensation | 25 | | 23 | |
| Other | 29 | | (5) | |
| Changes, excluding working capital | | (125) | | (115) |
| | | | | |
| **Operating cash flow before changes in working capital** | | **1,629** | | **1,233** |
| Changes in operating working capital: | | | | |
| - Inventories | (166) | | (201) | |
| - Trade receivables | (74) | | (121) | |
| - Trade payables | (6) | | 127 | |
| | (246) | | (195) | |
| Changes in other working capital | 8 | | (42) | |
| Changes in working capital | | (238) | | (237) |
| | | | | |
| **Cash provided by operating activities** | | **1,391** | | **996** |

[1] Please refer to Note 2 'Alternative performance measures' for the reconciliation to Adjusted EBITDA of € 1,822 million (2017: € 1,445 million) and other adjusted IFRS performance measures.

## Consolidated cash flow statement (Note 26) continued

| x € million | 2018 | 2017 |
|---|---|---|
| **Cash provided by operating activities** | **1,391** | **996** |
| | | |
| *Investing activities* | | |
| Capital expenditure for:[1] | | |
| - Intangible assets | (108) | (98) |
| - Property, plant and equipment | (565) | (449) |
| Payments regarding drawing rights | (20) | (8) |
| Proceeds from disposal of property, plant and equipment | 18 | 11 |
| Acquisition of subsidiaries and associates | (22) | (242) |
| Cash from net investment hedge | - | (21) |
| Disposal of subsidiaries, businesses and associates | 316 | 1,525 |
| Additions to fixed-term deposits | (1,544) | (1,319) |
| Withdrawal from fixed-term deposits | 1,222 | 1,286 |
| Interest received | 20 | 30 |
| Other financial assets: | | |
| - Capital payments and acquisitions | (77) | (98) |
| - Dividends received | 2 | 4 |
| - Additions to loans granted | (4) | (23) |
| - Repayment of loans granted | 156 | 81 |
| - Proceeds from disposals | 1 | 10 |
| | | |
| **Cash from/(used in) investing activities** | **(605)** | **689** |
| | | |
| *Financing activities* | | |
| Settlement derivatives internal loans | 1 | (28) |
| Capital payments from/to non-controlling interests | - | 3 |
| Loans taken up | 25 | 14 |
| Repayment of loans | (13) | (818) |
| Change in debt to credit institutions | 9 | 10 |
| Dividend paid | (225) | (200) |
| Interest paid | (59) | (135) |
| Proceeds from reissued treasury shares | 97 | 107 |
| Repurchase of shares | (236) | (297) |
| | | |
| **Cash (used in)/from financing activities** | **(401)** | **(1,344)** |
| | | |
| **Change in cash and cash equivalents** | **385** | **341** |
| | | |
| **Cash and cash equivalents at 1 January** | **899** | **604** |
| Exchange differences relating to cash held | (3) | (46) |
| | | |
| **Cash and cash equivalents at 31 December** | **1,281** | **899** |

[1] An amount of € 9 million included in capital expenditure was funded by customers (2017: € 1 million) and € 18 million via financial lease (2017: none).

# 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. The policies that management considers to be the most important to the presentation of the financial condition and results of operations are 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 certain items as 'APM adjustments' relating to the alternative performance measures, the identification of cash generating units (CGUs) and the classification of activities as 'held for sale' and 'discontinued operations'.

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) and 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 mainly of goodwill and development projects requires judgments by management, among other things with respect to the determination of CGUs, the estimation of future cashflows, growth rates and discount rates to apply (Notes 2, 8, 9 and 10). Significant judgment is also required for the determination of earn-out receivables and payables 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.

### 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 | |
|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 |
| US dollar | 1.15 | 1.20 | 1.18 | 1.13 |
| Swiss franc | 1.13 | 1.17 | 1.16 | 1.11 |
| Brazilian real | 4.44 | 3.97 | 4.31 | 3.61 |
| Chinese renminbi | 7.88 | 7.80 | 7.81 | 7.63 |

### 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 and 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. freight).

**Research and 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 are made that impact the EBIT(DA), net profit, ROCE and the EPS. A reconciliation of these Alternative performance measures to the most directly comparable IFRS measures can be found on page 174.

The APM adjustments to net profit, as included in the APMs, can be specified as follows:

| | **2018** | 2017 |
|---|---|---|
| APM adjustments: | | |
| - Acquisitions/divestments | - | 11 |
| - Other consolidation changes | (11) | - |
| - Restructuring | 68 | 60 |
| - Other | 11 | 26 |
| - Impairments of PPE and intangible assets | 32 | 14 |
| - Income tax related to adjustments | (23) | (28) |
| - Adjustments to result in associates and joint ventures | (122) | (1,158) |
| | | |
| **Total APM adjustments (income)/expense** | **(45)** | **(1,075)** |

**2018**

The APM adjustments in 2018 are listed below:

- Restructuring costs of € 68 million relate to project costs of the restructuring projects together with the redundancy schemes connected to the dismissal of employees and costs of termination of contracts
- The other consolidation change relates to the deconsolidation of Yantai Andre Pectin, which led to an accounting profit of € 11 million
- The other APM adjustments of € 11 million relate to a changed and remeasured earn-out arrangement with Amyris Brasil
- Impairments of property, plant and equipment (PPE) and intangible assets of € 32 million relate mainly to an R&D building of DSM Nutritional Products in Switzerland and the impairment of a development project within DSM Food Specialties
- APM adjustments to the result from associates and joint ventures mainly relate to the gain on the sale of the 50% share in DSM Sinochem Pharmaceuticals (DSP) of € 109 million and the gain on the sale of the shares in Essential Medical of € 13 million

**2017**

The APM adjustments in 2017 are listed below:

- Restructuring costs of € 60 million relate to project costs of the restructuring projects together with the redundancy schemes connected to the dismissal of employees and costs of termination of contracts
- Acquisition and divestment costs of € 11 million relate to acquisition costs of € 4 million for among others Amyris Brasil and Twilmij, and the divestment costs for Innovative Synthesis of € 7 million
- The other APM adjustments of € 26 million relate mainly to the demolition of buildings (€ 15 million), and some site closure and relocation costs (€ 11 million)
- The impairments of property, plant and equipment (PPE) and intangible assets of € 14 million mainly relate to asset impairments within DSM Food Specialties (€ 4 million), DSM Bio-based Products & Services (€ 11 million) and an asset write-off of a plant of DSM Nutritional Products in China (€ 7 million), offset by some reversals of impairments within DSM Resins & Functional Materials (€ 8 million)
- APM adjustments to the result from associates mainly relate to a gain on the sale of the shares in Patheon N.V. of € 1,250 million, offset by an impairment of the joint venture POET-DSM of € 65 million and other associated companies of € 30 million in total

## Alternative performance measures

| | 2018 | 2017 |
|---|---|---|
| Operating profit | 1,245 | 846 |
| Depreciation, amortization and impairments | 509 | 502 |
| **EBITDA** | **1,754** | **1,348** |
| | | |
| APM adjustments to EBITDA: | | |
| - Acquisitions/divestments | - | 11 |
| - Other consolidation changes | (11) | - |
| - Restructuring | 68 | 60 |
| - Other | 11 | 26 |
| Total APM adjustments | 68 | 97 |
| | | |
| **Adjusted EBITDA** | **1,822** | **1,445** |
| | | |
| **Operating profit** | **1,245** | **846** |
| | | |
| APM adjustments to Operating profit: | | |
| - APM adjustments to EBITDA | 68 | 97 |
| - Impairments of PPE and intangible assets | 32 | 14 |
| Total APM adjustments | 100 | 111 |
| | | |
| **Adjusted operating profit** | **1,345** | **957** |
| | | |
| **Profit for the year** | **1,079** | **1,781** |
| | | |
| APM adjustments to: | | |
| - Operating profit | 100 | 111 |
| - Result relating to associates/joint ventures | (122) | (1,158) |
| Income tax related to APM adjustments | (23) | (28) |
| Total APM adjustments | (45) | (1,075) |
| | | |
| **Adjusted net profit** | **1,034** | **706** |
| Profit attributable to non-controlling interests | (2) | (12) |
| Dividend on cumulative preference shares | (8) | (8) |
| | | |
| **Adjusted net profit available to holders of ordinary shares** | **1,024** | **686** |
| | | |
| **Earnings per share** | | |
| | | |
| Average number of ordinary shares outstanding (x 1,000) | 175,323 | 174,795 |
| Effect of dilution due to share options (x 1,000) | 1,000 | 683 |
| Adjusted average number of ordinary shares outstanding (x 1,000) | 176,323 | 175,478 |
| | | |
| Earnings per share (EPS) (in €): | | |
| - Net basic EPS | 6.10 | 10.07 |
| - Net diluted EPS | 6.06 | 10.04 |
| - Adjusted net basic EPS | 5.84 | 3.92 |
| - Adjusted net diluted EPS | 5.81 | 3.91 |

## Alternative performance measures

| | 2018 | 2017 |
|---|---|---|
| Capital employed | | |
| Intangible assets | 3,090 | 3,058 |
| Property, plant and equipment | 3,511 | 3,313 |
| Investment grants / drawing rights | (94) | (104) |
| Inventories | 1,993 | 1,848 |
| Current receivables | 1,738 | 1,690 |
| Current liabilities | (2,057) | (2,039) |
| **Capital employed at 31 December** | **8,181** | **7,766** |
| Average capital employed | | |
| Capital employed at 1 January | 7,766 | 7,889 |
| Capital employed at 31 March | 7,740 | 7,913 |
| Capital employed at 30 June | 8,115 | 7,692 |
| Capital employed at 30 September | 8,220 | 7,620 |
| Capital employed at 31 December | 8,181 | 7,766 |
| **Average capital employed** | **8,004** | **7,776** |
| Adjusted operating profit | 1,345 | 957 |
| ROCE in % | 16.8% | 12.3% |

## 3 Change in the scope of the consolidation

### Acquisitions

In 2018 DSM did not acquire any new businesses.

The PPAs for the 2017 acquisitions of Inner Mongolia Rainbow Biotechnology, Twilmij, BioCare Copenhagen and Amyris Brasil were finalized in 2018. In accordance with IFRS 3, the purchase price was allocated to identifiable assets and liabilities acquired. The PPA of Twilmij resulted in a reallocation of goodwill (-€ 31 million) to mainly other intangible assets for customer relations and the brand name. The PPA of the BioCare Copenhagen acquisition led to a reallocation of goodwill (-€ 21 million) to other intangible assets for technology and customer relations. The finalization of the PPA of Amyris Brasil resulted in recognition of an additional contingent consideration of € 50 million. This was reallocated to intangible assets for customer relations, IP and goodwill.

The impact of the acquisitions on DSM's consolidated balance sheet (measured at the date of acquisition) is shown in the following table.

| Acquisitions: finalization of PPA | Amyris Brasil | Twilmij | BioCare | Other | Total |
|---|---|---|---|---|---|
| *Assets* | | | | | |
| Intangible assets | 47 | 39 | 26 | 4 | 116 |
| Property, plant and equipment | (3) | 2 | - | - | (1) |
| Other non-current assets | (13) | - | - | (2) | (15) |
| Receivables | - | - | 2 | - | 2 |
| **Total assets** | **31** | **41** | **28** | **2** | **102** |
| | | | | | |
| *Non-controlling interests and liabilities* | | | | | |
| Non-controlling interests | - | - | - | (1) | (1) |
| Non-current liabilities | (16) | 10 | 6 | 1 | 1 |
| Current liabilities | (2) | - | 1 | - | (1) |
| **Total non-controlling interests and liabilities** | **(18)** | **10** | **7** | **-** | **(1)** |
| | | | | | |
| **Net assets** | **49** | **31** | **21** | **2** | **103** |
| | | | | | |
| **Consideration** | **50** | **-** | **-** | **-** | **50** |
| | | | | | |
| **Goodwill** | **1** | **(31)** | **(21)** | **(2)** | **(53)** |
| Acquisition costs recognized in APM adjustments | 1 | - | - | 3 | 4 |

### Disposals

There were no material disposals in 2018.

### Other changes

On 1 January 2018, DSM deconsolidated the Yantai Andre Pectin business, following developments in early January after the refusal of the other shareholders to transfer their shares to DSM despite an earlier agreement.

## 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 and 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, sustainable resins solutions for paints and industrial and optical fiber coatings, as well as the fiber Dyneema®.

The Innovation Center focuses on innovation and 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 a number of costs that cannot be allocated to the clusters.

DSM does not have a single external customer that represents 10% or more of total sales.

## Geographical information

| 2017 | The Nether-lands | Rest of Western Europe | Eastern Europe | North America | Latin America | China | India | Japan | Rest of Asia | Rest of the world | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Net sales by origin | | | | | | | | | | | |
| In € million | 2,193 | 2,560 | 182 | 1,430 | 669 | 1,023 | 82 | 123 | 286 | 84 | 8,632 |
| In % | 25 | 30 | 2 | 17 | 8 | 12 | 1 | 1 | 3 | 1 | 100 |
| | | | | | | | | | | | |
| Net sales by destination | | | | | | | | | | | |
| In € million | 316 | 2,074 | 564 | 1,918 | 1,059 | 1,116 | 200 | 299 | 821 | 265 | 8,632 |
| In % | 4 | 24 | 7 | 22 | 12 | 13 | 2 | 3 | 10 | 3 | 100 |
| | | | | | | | | | | | |
| Workforce at year-end (headcount) | 3,831 | 4,905 | 504 | 3,264 | 2,078 | 4,593 | 537 | 195 | 870 | 277 | 21,054 |
| Average workforce (FTE) | 3,735 | 4,676 | 469 | 3,204 | 2,066 | 4,572 | 504 | 194 | 846 | 267 | 20,533 |
| | | | | | | | | | | | |
| *Intangible assets and Property, plant and equipment* | | | | | | | | | | | |
| Capital expenditure | 134 | 209 | 4 | 126 | 45 | 53 | 4 | 2 | 6 | 3 | 586 |
| Carrying amount | 1,674 | 1,692 | 31 | 1,864 | 387 | 547 | 19 | 37 | 97 | 23 | 6,371 |
| | | | | | | | | | | | |
| Total assets (total DSM) | 4,656 | 2,530 | 141 | 2,739 | 877 | 1,110 | 104 | 139 | 403 | 103 | 12,802 |
| | | | | | | | | | | | |
| **2018** | | | | | | | | | | | |
| Net sales by origin | | | | | | | | | | | |
| In € million | 2,299 | 3,301 | 195 | 1,403 | 574 | 938 | 95 | 113 | 264 | 85 | 9,267 |
| In % | 25 | 36 | 2 | 15 | 6 | 10 | 1 | 1 | 3 | 1 | 100 |
| | | | | | | | | | | | |
| Net sales by destination | | | | | | | | | | | |
| In € million | 405 | 2,229 | 597 | 2,070 | 1,081 | 1,131 | 233 | 322 | 906 | 293 | 9,267 |
| In % | 4 | 24 | 7 | 22 | 12 | 12 | 3 | 3 | 10 | 3 | 100 |
| | | | | | | | | | | | |
| Workforce at year-end (headcount) | 3,827 | 5,069 | 523 | 3,281 | 2,214 | 4,104 | 556 | 204 | 904 | 295 | 20,977 |
| Average workforce (FTE) | 3,644 | 4,851 | 511 | 3,258 | 2,139 | 4,335 | 545 | 199 | 884 | 284 | 20,650 |
| | | | | | | | | | | | |
| *Intangible assets and Property, plant and equipment* | | | | | | | | | | | |
| Capital expenditure | 150 | 208 | 7 | 121 | 36 | 116 | 3 | 3 | 6 | 3 | 653 |
| Carrying amount | 1,678 | 1,961 | 33 | 1,823 | 362 | 568 | 19 | 41 | 93 | 23 | 6,601 |
| | | | | | | | | | | | |
| Total assets (total DSM) | 5,094 | 2,732 | 143 | 2,778 | 939 | 1,064 | 132 | 170 | 482 | 107 | 13,641 |

## Business segments

| 2018 | Nutrition | Materials | Innovation Center | Corporate Activities | Elimina- tions | Total |
|---|---|---|---|---|---|---|
| *Financial performance* | | | | | | |
| Net sales | 6,137 | 2,913 | 172 | 45 | - | 9,267 |
| Supplies to other clusters | 46 | 9 | 19 | - | (74) | - |
| | | | | | | |
| Supplies | 6,183 | 2,922 | 191 | 45 | (74) | 9,267 |
| | | | | | | |
| Adjusted EBITDA | 1,407 | 512 | 8 | (105) | - | 1,822 |
| EBITDA | 1,379 | 490 | 7 | (122) | - | 1,754 |
| Adjusted operating profit | 1,111 | 383 | (14) | (135) | - | 1,345 |
| Operating profit | 1,050 | 362 | (15) | (152) | - | 1,245 |
| | | | | | | |
| Depreciation and amortization | 291 | 128 | 22 | 28 | - | 469 |
| Impairments | 38 | - | - | 2 | - | 40 |
| - of which included in APM adjustments | 33 | (1) | - | - | - | 32 |
| Additions to provisions | 8 | 11 | 2 | 14 | - | 35 |
| Result related to associates and joint ventures | 3 | - | (2) | 128 | - | 129 |
| R&D costs[1] | 153 | 114 | 50 | 31 | - | 348 |
| Wages, salaries and social security costs | 965 | 334 | 74 | 270 | - | 1,643 |
| | | | | | | |
| *Financial position* | | | | | | |
| Total assets | 7,201 | 2,293 | 735 | 3,412 | - | 13,641 |
| Total liabilities | 2,011 | 729 | 59 | 3,027 | - | 5,826 |
| Capital employed at year-end | 5,683 | 1,878 | 597 | 23 | - | 8,181 |
| Capital expenditure | 463 | 132 | 32 | 26 | - | 653 |
| Share in equity of associates and joint ventures | 54 | 3 | 71 | 77 | - | 205 |
| | | | | | | |
| Adjusted EBITDA margin (in %) | 22.9 | 17.6 | | | | 19.7 |
| | | | | | | |
| *Workforce* | | | | | | |
| Average in FTE | 13,432 | 4,566 | 681 | 1,971 | - | 20,650 |
| Year-end (headcount) | 13,628 | 4,643 | 701 | 2,005 | - | 20,977 |

[1] R&D costs relate to the functional area Research and development and exclude R&D costs included in the functional areas Cost of sales and Marketing and sales as well as R&D expenditure capitalized.

## Business segments

| 2017 | Nutrition | Materials | Innovation Center | Corporate Activities | Elimina-tions | Total |
|---|---|---|---|---|---|---|
| *Financial performance* | | | | | | |
| Net sales | 5,579 | 2,825 | 169 | 59 | - | 8,632 |
| Supplies to other clusters | 52 | 10 | 22 | - | (84) | - |
| | | | | | | |
| Supplies | 5,631 | 2,835 | 191 | 59 | (84) | 8,632 |
| | | | | | | |
| Adjusted EBITDA | 1,053 | 488 | 9 | (105) | - | 1,445 |
| EBITDA | 1,022 | 485 | 10 | (169) | - | 1,348 |
| Adjusted operating profit | 770 | 361 | (30) | (144) | - | 957 |
| Operating profit | 728 | 367 | (40) | (209) | - | 846 |
| | | | | | | |
| Depreciation and amortization | 280 | 125 | 25 | 34 | - | 464 |
| Impairments | 14 | (8) | 26 | 6 | - | 38 |
| - of which included in APM adjustments | 11 | (9) | 11 | 1 | - | 14 |
| Additions to provisions | 17 | - | 6 | 71 | - | 94 |
| Result related to associates and joint ventures | - | - | (103) | 1,257 | - | 1,154 |
| R&D costs[1] | 127 | 112 | 63 | 32 | - | 334 |
| Wages, salaries and social security costs | 955 | 327 | 78 | 296 | - | 1,656 |
| | | | | | | |
| *Financial position* | | | | | | |
| Total assets | 6,811 | 2,162 | 674 | 3,155 | - | 12,802 |
| Total liabilities | 1,900 | 696 | 70 | 3,071 | - | 5,737 |
| Capital employed at year-end | 5,420 | 1,786 | 562 | (2) | - | 7,766 |
| Capital expenditure | 407 | 124 | 43 | 12 | - | 586 |
| Share in equity of associates and joint ventures | 1 | 3 | 53 | 170 | - | 227 |
| | | | | | | |
| Adjusted EBITDA margin (in %) | 18.9 | 17.3 | | | | 16.7 |
| | | | | | | |
| *Workforce* | | | | | | |
| Average in FTE | 13,243 | 4,472 | 639 | 2,179 | - | 20,533 |
| Year-end (headcount) | 13,676 | 4,635 | 685 | 2,058 | - | 21,054 |

[1] R&D costs relate to the functional area Research and development and exclude R&D costs included in the functional areas Cost of sales and Marketing and sales as well as R&D expenditure capitalized.

## 5 Net sales and costs

### Net sales

| | 2018 | 2017 |
|---|---|---|
| Goods sold | 9,091 | 8,451 |
| Services rendered | 164 | 173 |
| Royalties | 12 | 8 |
| **Total** | **9,267** | **8,632** |

Fulfillment of the performance obligations of goods 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

| | 2018 | 2017 |
|---|---|---|
| Nutrition | | |
| DSM Nutritional Products: | | |
| - Animal Nutrition & Health | 3,134 | 2,660 |
| - Human Nutrition & Health | 2,019 | 1,939 |
| - Personal Care & Aroma Ingredients | 382 | 353 |
| - Other | 112 | 86 |
| | 5,647 | 5,038 |
| DSM Food Specialties | 490 | 541 |
| **Total** | **6,137** | **5,579** |
| Materials | | |
| DSM Engineering Plastics | 1,516 | 1,448 |
| DSM Dyneema | 344 | 332 |
| DSM Resins & Functional Materials | 1,053 | 1,045 |
| **Total** | **2,913** | **2,825** |
| Innovation Center | 172 | 169 |
| Corporate Activities | 45 | 59 |
| **Total** | **9,267** | **8,632** |

### Total costs

In 2018, total operating costs amounted to €8.0 billion, €0.2 billion higher than in 2017, when these costs stood at €7.8 billion. Total operating costs in 2018 included Cost of sales amounting to €5.9 billion (2017: €5.7 billion); gross margin as a percentage of net sales stood at 37% (2017: 34%).

### Employee benefit costs

| | 2018 | 2017 |
|---|---|---|
| Wages and salaries | 1,433 | 1,452 |
| Social security costs | 185 | 181 |
| Pension costs (see also Note 24) | 110 | 112 |
| Share-based compensation (see also Note 27) | 25 | 23 |
| **Total** | **1,753** | **1,768** |

### Depreciation, amortization and impairments

| | 2018 | 2017 |
|---|---|---|
| Amortization of intangible assets | 149 | 146 |
| Depreciation of property, plant and equipment | 320 | 318 |
| Impairment losses | 40 | 38 |
| **Total** | **509** | **502** |

### Other operating income

| | 2018 | 2017 |
|---|---|---|
| Release of provisions | 8 | 6 |
| Gain on sale of assets and activities | 25 | 20 |
| Insurance benefits | 18 | 4 |
| Amendments/settlements pension plans | 11 | 20 |
| Earn-out payments and other settlements | 10 | 28 |
| Sundry | 32 | 26 |
| **Total** | **104** | **104** |

## Other operating expense

| | 2018 | 2017 |
|---|---|---|
| Additions to provisions | 36 | 87 |
| Exchange differences | 7 | 8 |
| Acquisitions/Disposals | 7 | 3 |
| Earn-out Amyris Brasil | 11 | - |
| Sundry | 22 | 14 |
| **Total** | **83** | **112** |

## 6 Financial income and expense

| | 2018 | 2017 |
|---|---|---|
| *Financial income* | | |
| Interest income | 13 | 11 |
| Fair value change commodity hedges | - | 14 |
| Unwinding discounted receivables | 5 | 10 |
| **Total financial income** | **18** | **35** |
| *Financial expense* | | |
| Interest expense | (102) | (125) |
| Interest relating to defined benefit plans | (6) | (8) |
| Capitalized interest during construction | 5 | 3 |
| Exchange differences | (3) | (4) |
| Unwinding discounted payables | (12) | (3) |
| Sundry | (1) | (2) |
| **Total financial expense** | **(119)** | **(139)** |
| **Financial income and expense** | **(101)** | **(104)** |

In 2018, the interest rate applied in the capitalization of interest during construction was 4% (2017: 5%; as of July, 4%).

## 7 Income tax

The income tax expense on the total result was € 194 million, which represents an effective income tax rate of 17.0% (2017: € 115 million, representing an effective income tax rate of 15.5%) and can be broken down as follows:

| | 2018 | 2017 |
|---|---|---|
| Current tax expense: | | |
| - Current year | (162) | (78) |
| - Prior-year adjustments | 3 | (4) |
| - Tax credits compensated | 4 | 2 |
| - Non-recoverable withholding tax | (1) | (1) |
| | **(156)** | **(81)** |
| Deferred tax expense: | | |
| - Originating from temporary differences and their reversal | 23 | (19) |
| - Prior-year adjustments | 4 | 2 |
| - Change in tax rate | (8) | 25 |
| - Changes arising from (reversal of) write-down deferred tax assets | (8) | 9 |
| - Other changes in tax losses and tax credits | (49) | (51) |
| | **(38)** | **(34)** |
| **Total** | **(194)** | **(115)** |
| Of which related to: | | |
| - Adjusted taxable result | (217) | (143) |
| - APM adjustments | 23 | 28 |

The effective tax rate on the Adjusted taxable result was 17.4% in 2018 (2017: 16.8%). The effective tax rate in 2017 was positively impacted by the adjusted federal tax rate in the US. The effective tax rate in 2018 was positively impacted by the geographical spread. The relationship between the income tax rate in the Netherlands and the effective tax rate on the result is as follows:

## Effective tax rate

| in % | 2018 | 2017 |
|---|---|---|
| | | |
| Domestic income tax rate | 25.0 | 25.0 |
| | | |
| Tax effects of: | | |
| - Deviating rates | (8.0) | (4.6) |
| - Change in tax rates | 0.7 | (3.0)[1] |
| - Tax-exempt income and non-deductible expense | (0.9) | (0.5) |
| - Other effects | 0.6 | (0.1) |
| | | |
| **Effective tax rate adjusted result** | **17.4** | **16.8** |
| APM adjustments (see Note 2) | (0.4) | (1.3) |
| **Total effective tax rate** | **17.0** | **15.5** |

[1] Change due to US tax reform only

In Change in tax rates of 0.7%, the impact of the measurement and/or remeasurement of the deferred tax assets and liabilities (caused by the tax reform in the Netherlands and other European countries) is included. The change in tax rate in 2017 was related to the impact of the US tax reform only.

The balance of deferred tax assets and deferred tax liabilities decreased by €28 million owing to the changes presented in the next table:

## Deferred tax assets and liabilities

| | 2018 | 2017 |
|---|---|---|
| | | |
| Balance at 1 January | | |
| Deferred tax assets | 281 | 355 |
| Deferred tax liabilities | (259) | (278) |
| | | |
| **Total** | **22** | **77** |
| | | |
| Changes: | | |
| - Income tax income/(expense) in income statement | (30) | (59) |
| - Income tax: change in tax percentage | (8) | 25 |
| Income tax expense | (38) | (34) |
| - Income tax: sale of Patheon | - | (22) |
| Total income statement | (38) | (56) |
| | | |
| - Income tax expense in OCI | 20 | (25) |
| - Acquisitions and disposals | (17) | (5) |
| - Other consolidation changes | 3 | - |
| - Exchange differences | - | 22 |
| - Transfer | 4 | 9 |
| | | |
| Balance at 31 December | **(6)** | **22** |
| | | |
| Of which: | | |
| - Deferred tax assets | 248 | 281 |
| - Deferred tax liabilities | (254) | (259) |

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

| | **2018** | | 2017 | |
|---|---|---|---|---|
| | Deferred tax assets | Deferred tax liabilities | Deferred tax assets | Deferred tax liabilities |
| Intangible assets | 12 | (161) | 14 | (152) |
| Property, plant and equipment | 21 | (166) | 22 | (159) |
| Financial assets | 3 | (10) | 9 | (8) |
| Inventories | 64 | (34) | 53 | (33) |
| Receivables | 8 | (14) | 5 | (17) |
| Equity | 1 | (1) | 1 | (1) |
| Other non-current liabilities | 14 | (3) | 19 | (1) |
| Non-current provisions | 77 | (2) | 74 | (3) |
| Other current liabilities | 87 | (5) | 70 | (12) |
| | **287** | **(396)** | **267** | **(386)** |
| Tax losses carried forward | 103 | - | 141 | - |
| Set-off | (142) | 142 | (127) | 127 |
| **Total** | **248** | **(254)** | **281** | **(259)** |

No deferred tax assets were recognized for loss carryforwards amounting to € 237 million (2017: € 211 million). Unrecognized loss carryforwards amounting to € 58 million will expire in the years up to and including 2023 (2017: € 77 million up to and including 2022), € 112 million between 2024 and 2028 (2017: € 72 million between 2023 and 2027) and the remaining € 67 million between 2029 and beyond (2017: € 63 million between 2028 and 2032).

The valuation of deferred tax assets depends on the probability of the reversal of temporary differences and the utilization of tax loss carryforwards. 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 likely to be realized. 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 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 2017* | | | | | | |
| Cost | 1,977 | 215 | 105 | 133 | 1,748 | 4,178 |
| Amortization and impairment losses | 19 | 111 | - | 33 | 827 | 990 |
| Carrying amount | **1,958** | **104** | **105** | **100** | **921** | **3,188** |
| Changes in carrying amount: | | | | | | |
| - Capital expenditure | - | - | 26 | 70 | 2 | 98 |
| - Put into operation | - | 32 | (68) | - | 36 | - |
| - Acquisitions | 159 | 21 | 23 | - | 15 | 218 |
| - Amortization | - | (11) | - | (7) | (128) | (146) |
| - Impairment losses | (3) | (11) | - | (11) | (9) | (34) |
| - Exchange differences | (181) | (10) | (6) | - | (70) | (267) |
| - Other reclassifications | - | - | (14) | 30 | (15) | 1 |
| | **(25)** | **21** | **(39)** | **82** | **(169)** | **(130)** |
| *Balance at 31 December 2017* | | | | | | |
| Cost | 1,950 | 225 | 66 | 215 | 1,657 | 4,113 |
| Amortization and impairment losses | 17 | 100 | - | 33 | 905 | 1,055 |
| Carrying amount | **1,933** | **125** | **66** | **182** | **752** | **3,058** |
| Changes in carrying amount: | | | | | | |
| - Capital expenditure | - | - | 38 | 70 | - | 108 |
| - Put into operation | - | 7 | (31) | - | 24 | - |
| - Acquisitions | (53) | 18 | - | - | 98 | 63 |
| - Deconsolidation | (1) | (19) | - | - | (3) | (23) |
| - Amortization | - | (11) | - | (11) | (127) | (149) |
| - Impairment losses | - | (1) | - | (14) | (2) | (17) |
| - Exchange differences | 30 | - | 1 | 3 | 14 | 48 |
| - Other reclassifications | - | (12) | (24) | 23 | 15 | 2 |
| | **(24)** | **(18)** | **(16)** | **71** | **19** | **32** |
| *Balance at 31 December 2018* | | | | | | |
| 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** |

The amortization of intangible assets is included in Cost of sales, Marketing and sales, Research and development and General and 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. A change in assumptions and estimates could change the values allocated to certain assets and their estimated useful lives, which could affect the amount or timing of charges to the income statement, such as amortization of intangible assets.

The deconsolidation relates to the Yantai Andre Pectin business. See also Note 3 'Change in the scope of the consolidation'. For impairments, see Note 2 'Alternative performance measures'.

The breakdown of the carrying amount of goodwill at year-end 2018 is as follows:

### Goodwill per acquisition

| Acquisition | 2018 | 2017 | Cash generating unit | Functional currency | Year of acquisition |
|---|---|---|---|---|---|
| Martek | 406 | 387 | DSM Nutritional Products | USD | 2011 |
| NeoResins | 358 | 358 | DSM Resins & Functional Materials | EUR | 2005 |
| Fortitech | 304 | 290 | DSM Nutritional Products | USD | 2012 |
| Ocean Nutrition Canada | 191 | 198 | DSM Nutritional Products | CAD | 2012 |
| Kensey Nash | 141 | 135 | DSM Biomedical | USD | 2012 |
| Tortuga | 90 | 102 | DSM Nutritional Products | BRL | 2013 |
| The Polymer Technology Group | 76 | 73 | DSM Biomedical | USD | 2008 |
| Other acquisitions | 343 | 390 | | | |
| **Total** | **1,909** | **1,933** | | | |

### Goodwill per Cash-generating unit

| Cash generating unit | 2018 | 2017 |
|---|---|---|
| DSM Nutritional Products | 1,155 | 1,189 |
| DSM Resins & Functional Materials | 384 | 383 |
| DSM Biomedical | 218 | 208 |
| DSM Food Specialties | 49 | 48[1] |
| DSM Dyneema | 40 | 40 |
| DSM Hydrocolloids | 22 | 25[1] |
| DSM Advanced Solar | 16 | 16 |
| DSM Engineering Plastics | 16 | 15 |
| DSM Bio-based Products & Services | 9 | 9 |
| **Total** | **1,909** | **1,933** |

[1] Changed for purposes of comparison

The annual impairment tests of goodwill are performed in the fourth quarter. The recoverable amount of the Cash-generating units (CGUs) concerned is based on a value-in-use calculation. DSM Nutritional Products, DSM Resins & Functional Materials and DSM Biomedical are the three CGUs to which significant amounts of goodwill are allocated.

The cash flow projections are derived from DSM's business plan (Corporate Strategy Dialogue) as adopted by the Managing Board, updated on a yearly basis. Mature businesses come to a terminal value after 5 years. The terminal value growth rate is determined with the assumption of limited inflationary growth. For emerging businesses, an explicit forecast period of 10 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

| | 2018 | 2017[1] |
|---|---|---|
| Forecast period (years) | | |
| - Mature business | 5 | 5 |
| - Emerging business | 10 | 10 |
| Terminal value growth | 1% | 1% |
| Pre-tax discount rate | | |
| - DSM Nutritional Products | 7.9% | 8.4% |
| - DSM Resins & Functional Materials | 9.7% | 10.3% |
| - DSM Biomedical | 9.8% | 10.6% |
| Organic Sales growth | | |
| DSM Nutritional Products | | |
| - Year 1–5 | 3–8% | 4–9% |
| DSM Resins & Functional Materials | | |
| - Year 1–5 | 3–9% | 2–10% |
| DSM Biomedical | | |
| - Year 1–10 | 8% | 8% |

[1] Changed for purposes of comparison

For DSM Nutritional Products the growth assumptions are based on the growth of the global food and feed markets, for DSM Resins & Functional Materials on the demand for advanced coating resins (influenced by growth in building and construction markets) and for DSM Biomedical on the growth of the market for medical devices.

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 2018 amounted to € 12,961 million (31 December 2017: € 14,454 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 2018 included € 224 million (2017: € 156 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). For one development project, an impairment of € 18 million was recorded. See also Note 2 'Alternative performance measures'.

## Other intangible assets

| | | | | 2018 | 2017 |
|---|---|---|---|---|---|
| | Cost | Amortization | Carrying amount | Of which acquisition-related | Of which acquisition-related |
| Application software | 269 | (206) | 63 | 3 | 4 |
| Marketing-related | 123 | (35) | 88 | 77 | 67 |
| Customer-related | 622 | (306) | 316 | 283 | 249 |
| Technology-based | 437 | (359) | 78 | 48 | 63 |
| Drawing rights | 240 | (56) | 184 | - | - |
| Other | 85 | (43) | 42 | 15 | 13 |
| **Total** | **1,776** | **(1,005)** | **771** | **426** | **396** |
| Total 2017 | 1,657 | (905) | 752 | 396 | |

Other intangible assets include drawing rights contracts with Fibrant. Fibrant will continue to supply at least 80% of DSM Engineering Plastics' caprolactam needs in Europe and North America for 15 years (2015–2030) via a drawing rights contract, effectively maintaining DSM Engineering Plastics' backward integration. Initially the fair value of this contract has been recognized as an intangible asset by DSM Engineering Plastics; 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 2018, it had a carrying amount of € 184 million (2017: € 198 million), a remaining useful life of 12 years, and an amount of € 57 million was still payable to Fibrant for the acquisition of the drawing rights (2017: € 72 million).

Other intangible assets also include the customer relationships that were part of the Fortitech acquisition in 2012, with a carrying amount at the end of 2018 of € 94 million (2017: € 99 million). Furthermore, acquisition-related intangibles are included in the annual goodwill impairment test previously discussed in this section. These intangible assets are amortized on a straight-line basis. There are no intangible assets with an indefinite useful life (2017: € 46 million).

## 9 Property, plant and equipment

| | Land and buildings | Plant and machinery | Other equip-ment | Under construc-tion | Not used for operating activities | Total |
|---|---|---|---|---|---|---|
| Balance at 1 January 2017 | | | | | | |
| Cost | 2,138 | 4,176 | 220 | 508 | 15 | 7,057 |
| Depreciation and impairment losses | 879 | 2,689 | 154 | 1 | 9 | 3,732 |
| Carrying amount | **1,259** | **1,487** | **66** | **507** | **6** | **3,325** |
| Changes in carrying amount: | | | | | | |
| - Capital expenditure | 8 | 54 | 4 | 422 | - | 488 |
| - Put into operation | 71 | 183 | 16 | (270) | - | - |
| - Acquisitions | 12 | 48 | 1 | 2 | - | 63 |
| - Disposals | (4) | (1) | (1) | - | - | (6) |
| - Depreciation | (73) | (226) | (19) | - | - | (318) |
| - Impairment losses | (5) | (7) | (2) | (1) | - | (15) |
| - Impairment reversals | - | 11 | - | - | - | 11 |
| - Exchange differences | (89) | (97) | (4) | (43) | - | (233) |
| - Other changes | 2 | (1) | 1 | (4) | - | (2) |
| | **(78)** | **(36)** | **(4)** | **106** | **-** | **(12)** |
| Balance at 31 December 2017 | | | | | | |
| Cost | 2,070 | 4,177 | 219 | 613 | 14 | 7,093 |
| Depreciation and impairment losses | 889 | 2,726 | 157 | - | 8 | 3,780 |
| Carrying amount | **1,181** | **1,451** | **62** | **613** | **6** | **3,313** |
| Changes in carrying amount: | | | | | | |
| - Capital expenditure | 8 | 38 | 21 | 478 | - | 545 |
| - Put into operation | 53 | 340 | 13 | (406) | - | - |
| - Acquisitions | - | (1) | - | - | - | (1) |
| - Disposals | (7) | (1) | - | - | - | (8) |
| - Deconsolidation | (11) | (15) | - | - | - | (26) |
| - Depreciation | (72) | (230) | (18) | - | - | (320) |
| - Impairment losses | (17) | (8) | - | - | - | (25) |
| - Impairment reversals | 2 | - | - | - | - | 2 |
| - Exchange differences | 12 | 16 | - | 5 | - | 33 |
| - Other changes | 3 | (2) | (1) | (2) | - | (2) |
| | **(29)** | **137** | **15** | **75** | **-** | **198** |
| Balance at 31 December 2018 | | | | | | |
| Cost | 2,104 | 4,618 | 247 | 689 | 12 | 7,670 |
| Depreciation and impairment losses | 952 | 3,030 | 170 | 1 | 6 | 4,159 |
| Carrying amount | **1,152** | **1,588** | **77** | **688** | **6** | **3,511** |

There were no material finance lease agreements in 2018 (as was the case in 2017).

In 2018, impairment losses of € 25 million (2017: € 15 million) were recognized on property, plant and equipment. See also Note 2 'Alternative performance measures'.

Deconsolidation relates to the Yantai Andre Pectin business. See also Note 3 'Change in the scope of the consolidation'.

## 10 Associates and joint arrangements

In 2018 the following events took place related to the associates and joint arrangements:

In the reporting year, the legal structure of ChemicalInvest changed. ChemicalInvest is owned 35% by DSM and 65% by CVC Capital Partners. As a result of the restructuring and the divestment of the caprolactam business of Fibrant by ChemicalInvest, DSM now has a direct share in the acrylonitrile business of AnQore (35%) and in the composite resins business of AOC Aliancys (18.9%). ChemicalInvest sold its share in the caprolactam business of Fibrant in the Netherlands and China to Highsun. DSM anticipates receiving about € 200 million in cash related to this transaction, of which € 120 million was received in 2018.

On 31 October 2018, DSM divested its share in DSM Sinochem Pharmaceuticals (DSP). Bain Capital acquired DSP from DSM and Sinochem Group, who each held an equity stake of 50%. DSM received € 247 million for its equity stake, excluding an earn-out (recognized at € 36 million) and transaction costs, resulting in a book profit of € 109 million on the transaction. DSM received € 271 million in cash following closing, including repayment of debt and after transaction costs.

### Divestment of share in DSM Sinochem Pharmaceuticals

| | |
|---|---|
| Consideration | 247 |
| Earn-out | 36 |
| Total consideration | 283 |
| | |
| Book value associate | 144 |
| | |
| **Book result** | **139** |
| | |
| Translation reserve | (12) |
| Transaction and other related costs | (18) |
| | |
| **Total transaction result in income statement** | **109** |

Following the outcome of the court case in January 2018, DSM deconsolidated Yantai Andre Pectin with effect from 1 January 2018. DSM's 28.95% stake in Yantai Andre Pectin is now accounted for as a Share in an associate, initially at fair value (€ 43 million). This deconsolidation has led to an accounting profit of € 11 million.

On 4 October 2018, DSM Innovation Center sold its 22.8% share in Essential Medical for a consideration of USD 14.7 million plus an estimated earn-out of USD 3 million. The book result amounts to € 13 million.

### 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.

| | **2018** | | | 2017 |
|---|---|---|---|---|
| | Associates | Joint Ventures | Total | Total |
| Balance at 1 January | **38** | **189** | **227** | **586** |
| - Share of the profit of associates and joint ventures | 54 | (18) | 36 | (116) |
| - Other comprehensive income | - | - | - | (14) |
| - Capital payments and dividends received | 9 | 44 | 53 | 60 |
| - Disposals | (2) | (144) | (146) | (249) |
| - Other | 40 | (5) | 35 | (40) |
| Balance at 31 December | **139** | **66** | **205** | **227** |

Disposals relate mainly to the divestment of DSM Sinochem Pharmaceuticals.

Other includes the initial recognition of Yantai Andre Pectin at fair value, following its deconsolidation.

### Joint operations

In 2017, DSM and Evonik established Veramaris®, a joint operation for omega-3 fatty acid products from natural marine algae for animal nutrition. DSM Nutritional Products and Evonik Nutrition & Care each hold a 50% share in the joint operation and will co-own the production facility, which is currently being built in Blair (Nebraska, USA). The construction of the USD 200 million facility, in which both joint operators will invest USD 100 million over two years, is progressing on time and according to plan. Commercial quantities of algal oil are scheduled to be ready for delivery in mid-2019. Pilot-scale quantities are already being supplied to selected feed producers and farmers for market development. The joint operation is headquartered in Delft (Netherlands). DSM accounts for the assets, liabilities, revenues and expenses relating to Veramaris® in accordance with IFRS 11 for joint operations.

## 11 Other financial assets

| | Loans associates and joint ventures | Other participating interests | Other receivables | Other deferred items | Total |
|---|---|---|---|---|---|
| Balance at 1 January 2017 | **253** | **50** | **136** | **24** | **463** |
| Changes: | | | | | |
| - Charged to the income statement | 12 | (8) | 31 | (6) | 29 |
| - Acquisitions | - | 7 | 18 | 2 | 27 |
| - Capital payments | - | 47 | - | - | 47 |
| - Disposals | - | (3) | - | - | (3) |
| - Loans granted / prepayments | - | - | 49 | - | 49 |
| - Repayments | (65) | - | (47) | - | (112) |
| - Other consolidation changes | (2) | - | - | - | (2) |
| - Exchange differences | (4) | (4) | (9) | (1) | (18) |
| - Transfers | (1) | 1 | (2) | - | (2) |
| - Changes in fair value | - | (1) | - | - | (1) |
| - Other | - | - | 1 | (3) | (2) |
| Balance at 31 December 2017 | **193** | **89** | **177** | **16** | **475** |
| Changes: | | | | | |
| - Charged to the income statement | - | - | (29) | (5) | (34) |
| - Acquisitions | - | - | (13) | (1) | (14) |
| - Capital payments | - | 22 | - | - | 22 |
| - Loans granted / prepayments | 8 | - | 2 | - | 10 |
| - Repayments | (175) | - | (29) | 5 | (199) |
| - Other consolidation changes | - | - | - | (6) | (6) |
| - Exchange differences | - | - | (1) | - | (1) |
| - Transfers | (24) | - | (18) | - | (42) |
| - Changes in fair value | - | 16 | - | - | 16 |
| - Other | - | 37 | (1) | - | 36 |
| Balance at 31 December 2018 | **2** | **164** | **88** | **9** | **263** |

Other participating interests relate to equity instruments in companies whose activities support DSM's business and which can be quoted or unquoted. In view of the adoption of IFRS 9 Financial Instruments as of January 2018, DSM revalued the Other participating interests which were not yet recognized at fair value. The adoption of this standard has not resulted in a significant impact on the financial information. See Note 23 'Financial instruments and risks' for the fair value hierarchy.

Repayments to the value of € 192 million relate to the settlement of various loans and the financing of ChemicalInvest. See also Note 10 'Associates and joint arrangements'.

Transfers mainly relate to the reclassification to current assets.

Other includes the earn-out relating to the sale of DSM Sinochem Pharmaceuticals. See Note 10 'Associates and joint arrangements'.

## 12 Inventories

| | 2018 | 2017 |
|---|---|---|
| Raw materials and consumables | 509 | 517 |
| Intermediates and finished goods | 1,574 | 1,392 |
| | **2,083** | **1,909** |
| Adjustments to lower net realizable value | (90) | (61) |
| **Total** | **1,993** | **1,848** |

The carrying amount of inventories adjusted to net realizable value was €271 million (2017: €216 million).

### Changes in the adjustment to net realizable value

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | **(61)** | **(63)** |
| Additions charged to income statement | (97) | (99) |
| Utilization/reversals | 69 | 97 |
| Exchange differences | (1) | 4 |
| Balance at 31 December | **(90)** | **(61)** |

## 13 Current receivables

With respect to the trade accounts receivable, information about impairment losses is included under 'Credit risk' in Note 23.

Deferred items comprised €40 million (2017: €31 million) in prepaid expenses that will impact profit or loss in future periods.

### Current receivables

| | 2018 | 2017 |
|---|---|---|
| Trade receivables | | |
| Trade accounts receivable | 1,395 | 1,356 |
| Other trade receivables | 174 | 172 |
| Deferred items | 39 | 29 |
| Receivables from associates | 2 | 6 |
| | **1,610** | **1,563** |
| Value adjustment | (35) | (21) |
| **Total Trade receivables** | **1,575** | **1,542** |
| Income tax receivable | **83** | **55** |
| Other current receivables | | |
| Other taxes and social security contributions | 20 | 36 |
| Employee-related receivables | 7 | 15 |
| Acquisition-/disposal-related receivables | 26 | 8 |
| Loans | 24 | 7 |
| Receivables associates and joint ventures relating to cash facility | - | 21 |
| Other receivables | 2 | 4 |
| Deferred items | 1 | 2 |
| **Total Other current receivables** | **80** | **93** |
| **Total current receivables** | **1,738** | **1,690** |

## 14 Current investments

| | 2018 | 2017 |
|---|---|---|
| Fixed term deposits | 1,277 | 954 |
| **Total** | **1,277** | **954** |

All fixed-term deposits have been placed with institutions with a high credit rating in line with the policy as outlined in Note 23 'Financial instruments and risks'. The deposits earn interest relative to the fixed term.

## 15 Cash and cash equivalents

| | 2018 | 2017 |
|---|---|---|
| Deposits | 245 | 242 |
| Money market funds | 340 | 40 |
| Cash at bank and in hand | 683 | 596 |
| Payments in transit | 11 | 19 |
| Bills of exchange | 2 | 2 |
| **Total** | **1,281** | **899** |

Cash at year-end 2018 was not being used as collateral and therefore was not restricted (same as in 2017).

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 on short notice for general use by the group. The amount of cash held in these countries was € 104 million (2017: € 116 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.

Cash held by DSM includes cash from certain associates and joint ventures that continue to participate in the cash-pooling arrangements of DSM. At the end of 2018, the amount had decreased by € 14 million to € 5 million. See also Note 21 'Current liabilities'.

## 16 Equity

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | **7,065** | **6,180** |
| Net profit | 1,079 | 1,781 |
| Net exchange differences | 143 | (645) |
| Net actuarial gains/(losses) on defined benefit obligations | (66) | 74 |
| Dividend | (368) | (323) |
| Proceeds from reissue of ordinary shares | 242 | 233 |
| Repurchase of shares | (236) | (297) |
| Other changes | (44) | 62 |
| Balance at 31 December | **7,815** | **7,065** |

In 2018, the following dividends were proposed by the Managing Board:

### Dividend

| | 2018 | 2017 |
|---|---|---|
| Per cumulative preference share A: € 0.17 (2017: € 0.17) | 8 | 8 |
| Per ordinary share: € 2.30 (2017: € 1.85) | 404 | 323 |
| **Total** | **412** | **331** |

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 B, see page 222.

### Share capital

On 31 December 2018, the authorized capital amounted to € 1,125 million (2017: € 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 changes in the number of issued and outstanding shares in 2017 and 2018 are shown in the following table.

#### Overview of shares

| | Issued shares | | Treasury shares |
|---|---|---|---|
| | Ordinary | Cumprefs A | Ordinary |
| Balance at 1 January 2017 | **181,425,000** | **44,040,000** | 6,423,334 |
| Reissue of shares in connection with share-based payments | | | (2,238,144) |
| Repurchase of shares | | | 4,500,000 |
| Dividend in the form of ordinary shares | | | (1,903,665) |
| Balance at 31 December 2017 | 181,425,000 | 44,040,000 | 6,781,525 |
| Number of treasury shares at 31 December 2017 | (6,781,525) | | |
| **Number of shares outstanding at 31 December 2017** | **174,643,475** | **44,040,000** | |
| Balance at 1 January 2018 | **181,425,000** | **44,040,000** | 6,781,525 |
| Reissue of shares in connection with share-based payments | | | (2,090,107) |
| Repurchase of shares | | | 2,700,000 |
| Dividend in the form of ordinary shares | | | (1,616,993) |
| Balance at 31 December 2018 | 181,425,000 | 44,040,000 | 5,774,425 |
| Number of treasury shares at 31 December 2018 | (5,774,425) | | |
| **Number of shares outstanding at 31 December 2018** | **175,650,575** | **44,040,000** | |

The average number of ordinary shares outstanding in 2018 was 175,322,889 (2017: 174,794,656). 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 2018, no cumulative preference shares B were outstanding.

### Share premium

Of the total share premium of € 489 million (2017: € 489 million), an amount of € 99 million (2017: € 101 million) can be regarded as entirely free of tax.

### Treasury shares

At 31 December 2018, DSM possessed 5,774,425 (2017: 6,781,525) ordinary shares (nominal value € 9 million, 2.56% (2017: 3.01%) of the share capital). The average purchase price of the ordinary treasury shares was € 64.22 (2017: € 58.70). At 31 December 2018, 5,616,235 (2017: 6,706,342) of the total number of treasury shares outstanding were held for servicing management and personnel share-option rights and share plans. The remainder, 158,190 shares (2017: 75,183), is the balance of the holding for this purpose at start of the year, the shares that were purchased under the company's share buy-back program and shares that were reissued as stock dividend.

## Other reserves in Shareholders' equity

| | Translation reserve | Hedging reserve | Reserve for share-based compensation | Fair value reserve | Total |
|---|---|---|---|---|---|
| Balance at 1 January 2017 | **530** | **(207)** | **65** | **8** | **396** |
| Changes: | | | | | |
| Fair-value changes of derivatives | - | 98 | - | - | 98 |
| Release to income statement | (14) | (39) | - | - | (53) |
| Fair-value changes of other financial assets | - | - | - | (3) | (3) |
| Exchange differences | (610) | - | - | - | (610) |
| Options and performance shares granted | - | - | 26 | - | 26 |
| Options and performance shares exercised/canceled | - | - | (22) | - | (22) |
| Reclassification[1] | - | - | (18) | - | (18) |
| Changes in joint ventures and associates | (4) | 7 | - | - | 3 |
| Income tax | (9) | (7) | - | - | (16) |
| Total changes | (637) | 59 | (14) | (3) | **(595)** |
| Balance at 31 December 2017 | **(107)** | **(148)** | **51** | **5** | **(199)** |
| Changes: | | | | | |
| Fair-value changes of derivatives | - | (44) | - | - | (44) |
| Release to income statement | 14 | 22 | - | - | 36 |
| Fair-value changes of other financial assets | - | - | - | 16 | 16 |
| Exchange differences | 129 | - | - | - | 129 |
| Options and performance shares granted | - | - | 25 | - | 25 |
| Options and performance shares exercised/canceled | - | - | (23) | - | (23) |
| Changes in joint ventures and associates | (1) | (3) | - | - | (4) |
| Income tax | 2 | 7 | - | - | 9 |
| Total changes | 144 | (18) | 2 | 16 | **144** |
| Balance at 31 December 2018 | **37** | **(166)** | **53** | **21** | **(55)** |

[1] Reclassification to retained earnings

The increase in the Translation reserve in 2018 is mainly caused by a weakening of the euro against the US dollar and Swiss franc, partly offset by a strengthening against the Brazilian real. As a consequence, the value of the subsidiaries in those countries increased, which led to a positive exchange difference of € 129 million. In addition, there was a € 14 million release of the cumulative translation reserve of mainly DSM Sinochem Pharmaceuticals to the income statement.

The Translation reserve, Hedging reserve and the Fair value reserve are legal reserves in accordance with Dutch law and cannot be distributed to shareholders. Additional information is provided in Note 7 to the 'Parent company financial statements'.

## 17 Non-controlling interests

| | 2018 | | | 2017 |
|---|---|---|---|---|
| | Andre Pectin | Other | Total | Total |
| % of non-controlling interest | 71% | | | |
| Balance at 1 January | **67** | **36** | **103** | **108** |
| Changes: | | | | |
| - Share of profit/charged to income statement | - | 2 | 2 | 12 |
| - Acquisitions | - | (1) | (1) | 1 |
| - Capital payments | - | - | - | 3 |
| - Dividend paid | - | (3) | (3) | (3) |
| - Other consolidation changes | (67) | - | (67) | (9) |
| - Exchange differences | - | (1) | (1) | (9) |
| Total changes | (67) | (3) | (70) | (5) |
| Balance at 31 December | **-** | **33** | **33** | **103** |

Other consolidation changes are related to the deconsolidation of Yantai Andre Pectin, in which DSM has a stake of 28.95%. See also Note 3 'Change in the scope of the consolidation'.

### Not fully-owned subsidiaries on a 100% basis

| | 2018 | 2017 |
|---|---|---|
| *Assets* | | |
| Intangible assets | 34 | 54 |
| Property, plant and equipment | 173 | 185 |
| Other non-current assets | 27 | 29 |
| Inventories | 27 | 51 |
| Receivables | 60 | 109 |
| Cash and cash equivalents | 20 | 28 |
| **Total assets** | **341** | **456** |
| *Liabilities* | | |
| Provisions (non-current) | 2 | 4 |
| Borrowings (non-current) | 14 | 15 |
| Other non-current liabilities | 20 | 23 |
| Borrowings and financial derivatives (current) | 79 | 73 |
| Other current liabilities | 90 | 104 |
| **Total liabilities** | **205** | **219** |
| **Net assets (100% basis)** | **136** | **237** |
| Net sales | 243 | 274 |
| Profit for the year | 7 | 22 |
| Operating cash flows | 86 | 35 |
| Dividend paid to non-controlling interests | 3 | 3 |

## 18 Provisions

| | Restructuring costs and termination benefits | Environmental costs | Other long-term employee benefits | Other provisions | Total |
|---|---|---|---|---|---|
| Balance at 1 January 2017 | **62** | **49** | **44** | **27** | **182** |
| Of which current | 35 | 7 | 3 | 9 | 54 |
| | | | | | |
| Changes in 2017 | | | | | |
| - Additions | 30 | 27 | 2 | 35 | 94 |
| - Releases | (2) | - | - | (4) | (6) |
| - Uses | (50) | (6) | (3) | (8) | (67) |
| - Exchange differences | (1) | - | (1) | (1) | (3) |
| - Other change | - | - | - | 4 | 4 |
| | - | - | - | | |
| Total changes | (23) | 21 | (2) | 26 | 22 |
| | | | | | |
| Balance at 31 December 2017 | **39** | **70** | **42** | **53** | **204** |
| Of which current | 31 | 10 | 3 | 9 | 53 |
| | | | | | |
| Changes in 2018 | | | | | |
| - Additions | 33 | 1 | 2 | 2 | 38 |
| - Releases | (2) | (9) | (3) | (2) | (16) |
| - Uses | (53) | (4) | (2) | (11) | (70) |
| - Other change | - | - | - | (3) | (3) |
| | | | | | |
| Total changes | (22) | (12) | (3) | (14) | (51) |
| | | | | | |
| Balance at 31 December 2018 | **17** | **58** | **39** | **39** | **153** |
| Of which current | 12 | 10 | 3 | 12 | 37 |

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 1.9% to 1.8%. The balance of provisions measured at present value increased by €0.6 million in 2018 in view of the passage of time (2017: increase of €0.3 million).

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.

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 mainly relate 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 risks. These provisions have an average life of 1 to 3 years.

The additions to the provisions for restructuring costs and termination benefits in 2018 mainly relate to the various restructuring projects (same as in 2017).

## 19 Borrowings

| | 2018 | | 2017 | |
|---|---|---|---|---|
| | Total | Of which current | Total | Of which current |
| Debenture loans | 2,543 | 300 | 2,542 | - |
| Private loans | 16 | 7 | 13 | 8 |
| Finance lease liabilities | 21 | 1 | 4 | - |
| Credit institutions | 72 | 72 | 69 | 69 |
| **Total** | **2,652** | **380** | **2,628** | **77** |

In agreements governing loans with a residual amount at year-end 2018 of €2,543 million, of which €300 million was of a short-term nature (31 December 2017: €2,542 million, of which €0 million was of a short-term nature), negative pledge clauses have been included that restrict the provision of security.

The documentation of the €300 million bond issued in November 2013, the €500 million bond issued in March 2014, the €500 million bond issued in April 2015, the €500 million bond issued in September 2015 and the €750 million bond issued in September 2016 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 July 2018, Moody's left the stable outlook for their A3 credit rating for DSM unchanged. Standard & Poor's confirmed DSM's credit rating in March 2018 to be A with a stable outlook. At 31 December 2018, there was €1,756 million in borrowings outstanding with a remaining term of more than 5 years (at 31 December 2017, there was €1,746 million with a remaining term of more than 5 years).

The schedule of repayment of borrowings is as follows:

### Borrowings by maturity

| | 2018 | 2017 |
|---|---|---|
| 2018 | - | 77 |
| 2019 | 380 | 301 |
| 2020 | 10 | - |
| 2021 | 1 | - |
| 2022 and 2023 | 505 | 504 |
| After 2023 | 1,756 | 1,746 |
| **Total** | **2,652** | **2,628** |

A breakdown of the borrowings by currency is given in the following table:

### Borrowings by currency

| | 2018 | 2017 |
|---|---|---|
| EUR | 2,566 | 2,543 |
| USD | 25 | 20 |
| CNY | 21 | 16 |
| TWD | 17 | - |
| BRL | 19 | 45 |
| Other | 4 | 4 |
| **Total** | **2,652** | **2,628** |

On balance, total borrowings increased by €24 million due to the following changes:

### Movements of borrowings

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | **2,628** | **3,405** |
| Loans taken up | 25 | 16 |
| Repayments | (13) | (818) |
| Acquisitions/consolidation changes | 10 | 24 |
| Changes in debt to credit institutions | 3 | 2 |
| Exchange differences | (1) | (1) |
| Balance at 31 December | **2,652** | **2,628** |

The average effective interest rate on the portfolio of borrowings outstanding in 2018, including hedge instruments related to these borrowings, amounted to 2.24% (2017: 3.28%).

A breakdown of debenture loans is given below:

**Debenture loans**

| | | | Nom. amt. | 2018 | 2017 |
|---|---|---|---|---|---|
| EUR loan | 1.75% | 2013—2019 | 300 | 300 | 300 |
| EUR loan | 2.38% | 2014—2024 | 500 | 498 | 498 |
| EUR loan | 1.00% | 2015—2025 | 500 | 498 | 497 |
| EUR loan | 1.38% | 2015—2022 | 500 | 499 | 499 |
| EUR loan | 0.75% | 2016—2026 | 750 | 748 | 748 |
| **Total** | | | **2,550** | **2,543** | **2,542** |

All debenture loans have a fixed interest rate and are listed on the AEX.

The 1.75% EUR bond 2013–2019 of € 300 million has an effective interest rate of 1.76%. 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.

A breakdown of private loans is given below:

**Private loans**

| | 2018 | 2017 |
|---|---|---|
| CNY loan | 15 | 12 |
| Other loans | 1 | 1 |
| **Total** | **16** | **13** |

DSM's policy regarding financial-risk management is described in Note 23.

## 20 Other non-current liabilities

| | 2018 | 2017 |
|---|---|---|
| Investment grants | 39 | 40 |
| Deferred items | 20 | 15 |
| Drawing rights | 52 | 69 |
| Other non-current liabilities | 86 | 64 |
| **Total** | **197** | **188** |

The increase in the other non-current liabilities relates mainly to earn-out agreements regarding the acquisition of Amyris Brasil.

## 21 Current liabilities

| | 2018 | 2017 |
|---|---|---|
| Trade payables | | |
| Received in advance | 5 | 4 |
| Trade accounts payable | 1,405 | 1,377 |
| Notes and cheques due | 3 | 3 |
| Owing to associates and joint ventures | 17 | 68 |
| **Total Trade payables** | **1,430** | **1,452** |
| Income tax payable | **100** | **51** |
| Other current liabilities | | |
| Other taxes and social security contributions | 58 | 51 |
| Interest | 21 | 18 |
| Pensions | 3 | 10 |
| Investment creditors | 109 | 133 |
| Employee-related liabilities | 293 | 277 |
| Payables associates and joint ventures relating to cash facility | 5 | 19 |
| Other liabilities | 36 | 28 |
| Deferred items | 2 | - |
| **Total Other current liabilities** | **527** | **536** |
| **Total current liabilities** | **2,057** | **2,039** |

## 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.

| | 2018 | 2017 |
|---|---|---|
| Operating leases and rents | 240 | 245 |
| Guarantee obligations on behalf of associates and third parties | 167 | 113 |
| Outstanding orders for projects under construction | 8 | 12 |
| Other | 42 | 17 |
| **Total** | **457** | **387** |

Guarantee obligations are principally related to VAT and duties on the one hand and to financing obligations of associated companies 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 2019. Property, plant and equipment under operating leases primarily concerns cars, catalysts, buildings and various equipment items.

The commitments for operating leases and rents are spread as follows:

### Operating leases and rents

| | 2018 | 2017 |
|---|---|---|
| 2018 | - | 66 |
| 2019 | 49 | 42 |
| 2020 | 39 | 30 |
| 2021 | 30 | 20 |
| 2022 | 25 | 18 |
| 2023 | 21 | 16 |
| After 2023 | 76 | 53 |
| **Total** | **240** | **245** |

### 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 (after divestment by DSM in 2018 renamed to Centrient Pharmaceuticals) 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 approximately € 18 million (excluding interest of 12% per year). At the end of 2018, 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.

## 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.

The financial derivatives contracts used by DSM are entered into exclusively in connection with the corresponding underlying transaction (hedged item) relating to normal operating business, which provides a risk profile directly opposite that of the hedge. The instruments used are customary products found in the market, such as currency swaps, cross-currency interest rate swaps, collars, forward exchange contracts, interest rate swaps, and commodity 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. This is discussed more extensively in 'Financial and reporting policies' of the Report by the Managing Board, see page 105. The net debt to equity ratio (gearing) is 1.4 (see also Note 25).

### Liquidity risk

Liquidity risk is the financial risk due to uncertain development of liquidity. An entity may not get access to sufficient liquidity if its credit rating falls, when it experiences sudden unexpected cash outflows or an unexpected drop in cash inflows, or some other event causes counterparties to avoid trading with or lending to the institution. A company is also exposed to liquidity risk if 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 December 2018, DSM had cash and cash equivalents of € 1,281 million (2017: € 899 million).

At the end of May 2018, DSM replaced two committed credit facilities of € 500 million each with one committed credit facility of € 1.0 billion, maturing on 29 May 2023. The agreement for the committed credit facility has neither financial covenants nor material adverse changes clauses. The committed credit facility links the interest rate to DSM's Greenhouse gas (GHG) emission reduction. At year-end 2018, no loans had been taken up under the committed credit facility.

Furthermore, DSM has a commercial paper program amounting to € 1,500 million (2017: € 1,500 million). The company will use the commercial paper program to a total of not more than € 1,000 million (2017: € 1,000 million).
At 31 December 2018, € 0 million had been issued as commercial paper (2017: € 0 million). 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 |
|---|---|---|---|---|---|---|---|
| **2017** | | | | | | | |
| Borrowings | 2,628 | 77 | 301 | - | 5 | 499 | 1,746 |
| Monetary liabilities | 2,241 | 2,108 | 46 | 25 | 9 | 4 | 49 |
| Guarantees | 113 | - | - | - | - | - | 113 |
| Derivatives | 24 | 20 | 2 | - | 1 | 1 | - |
| Interest payments | 218 | 35 | 35 | 29 | 29 | 29 | 61[1] |
| Cash at redemption[2] | 46 | 2 | 8 | 10 | 5 | 5 | 16 |
| **Total** | **5,270** | **2,242** | **392** | **64** | **49** | **538** | **1,985** |
| **2018** | | | | | | | |
| Borrowings | 2,652 | 380 | 10 | 1 | 504 | 1 | 1,756 |
| Monetary liabilities | 2,267 | 2,129 | 41 | 9 | 7 | 9 | 72 |
| Guarantees | 167 | - | - | - | - | - | 167 |
| Derivatives | 54 | 51 | - | 2 | 1 | - | - |
| Interest payments | 184 | 35 | 29 | 29 | 29 | 23 | 39[1] |
| Cash at redemption[2] | 89 | 5 | 18 | 14 | 14 | 12 | 26 |
| **Total** | **5,413** | **2,600** | **98** | **55** | **555** | **45** | **2,060** |

1 Cumulative interest payments in remaining years
2 Difference between nominal redemption and amortized costs

The following table reflects the exposure of the financial derivatives to liquidity risk.

The table contains the cash flows from derivatives with positive fair values and from derivatives with negative fair values to have a complete overview of the financial derivatives related cash flows. The amounts are gross and undiscounted.

### Financial derivatives cash flow

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
|---|---|---|---|---|---|---|---|
| 2017 | | | | | | | |
| Inflow | 2,655 | 63 | 42 | 38 | 21 | | 2,819 |
| Outflow | (2,675) | (72) | (45) | (41) | (21) | | (2,854) |
| | | | | | | | |
| **2018** | | | | | | | |
| Inflow | | 3,157 | 42 | 38 | 22 | 56 | 3,315 |
| Outflow | | (3,181) | (41) | (39) | (22) | (55) | (3,338) |

## 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 2018, there was neither debt carried at a floating interest rate (same as 2017), nor outstanding fixed-floating interest rate swaps (end of 2017 none).

The following analysis of the sensitivity of borrowings, assets and related financial derivatives to interest rate movements assumes an instantaneous 1% change in interest rates for all maturities from their level on 31 December 2018, with all other variables held constant. A 1% reduction in interest rates would result in a €25 million pre-tax loss in the income statement and equity on the basis of the composition of financial instruments on 31 December 2018, 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 on 31 December 2018 to changes in interest rates is set out in the following table:

### Sensitivity to change in interest rate

| | **2018** | | | 2017 | | |
|---|---|---|---|---|---|---|
| | Carrying amount | Sensitivity | | Carrying amount | Sensitivity | |
| | | +1% | (1%) | | +1% | (1%) |
| | | | | | | |
| Loans to associates and joint ventures | 26 | - | - | 193 | - | - |
| Current investments | 1,277 | 13 | (13) | 954 | 10 | (10) |
| Cash and cash equivalents | 1,281 | 13 | (13) | 899 | 9 | (9) |
| Short-term borrowings | (380) | (1) | 1 | (77) | (1) | 1 |
| Long-term borrowings | (2,272) | - | - | (2,551) | - | - |

## Currency risk

Currency risk is the risk that adverse movements of foreign currency rates lead to losses on assets or liabilities in currencies, which negatively impacts the results of operations and financial condition of the company. 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 forecasted transactions. The currencies giving rise to these risks are primarily USD, CHF, GBP and JPY. The risks arising from currency exposures are regularly reviewed and hedged when appropriate. DSM uses average-rate currency forward contracts, currency forward contracts, spot contracts, and average-rate currency 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 forecasted 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, 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

| | **2018** | | | 2017 | | |
|---|---|---|---|---|---|---|
| | Carrying amount | Sensitivity | | Carrying amount | Sensitivity | |
| | | +10% | (10%) | | +10% | (10%) |
| Loans to associates and joint ventures | 26 | - | - | 193 | 5 | (5) |
| Current investments | 1,277 | 1 | (1) | 954 | 1 | (1) |
| Cash and cash equivalents | 1,281 | 26 | (26) | 899 | 46 | (46) |
| Short-term borrowings | (380) | (7) | 7 | (77) | (8) | 8 |
| Long-term borrowings | (2,272) | (1) | 1 | (2,551) | (1) | 1 |
| Currency forward contracts | 1 | 35 | (35) | 3 | (18) | 18 |
| Currency forwards related to net investments in foreign entities[1] | (5) | (42) | 42 | 1 | (17) | 17 |
| Average-rate forwards used for economic hedging[2] | (22) | (68) | 68 | 12 | (13) | 13 |
| Commodity hedging | 7 | 1 | (1) | 17 | 2 | (2) |

[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) would affect the translation of financial instruments denominated in these currencies, assuming all other variables being constant.

| | **Profit or loss** | | **Equity** | |
|---|---|---|---|---|
| | Strengthening | Weakening | Strengthening | Weakening |
| EUR | | | | |
| USD (10% movement) | (154) | 154 | (243) | 243 |
| CHF (10% movement) | 1 | (1) | (254) | 254 |
| CNY (10% movement) | (22) | 22 | (62) | 62 |

### Price risk

Financial instruments that are subject to changes in stock exchange prices or indexes are subject to a price risk. At year-end 2018, price risks related to investments in securities were limited.

### Credit risk

Credit risk is the risk that a (commercial or financial) counterparty may not be able to honor a financial commitment vis-à-vis 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 other than some financing relationships with associates and joint ventures (see Note 10).

The expected credit loss (ECL) related to each of these financing relationships 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.

The loss allowance that has been taken into consideration at the start and the end of 2018 was below € 1 million.

With regard to treasury activities (for example cash, cash equivalents and financial 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. It is therefore unlikely that significant losses will arise in relation to receivables that have not been provided for.

In line with IFRS 9 standard 'Financial Instruments', the estimation of the value adjustment for doubtful accounts receivable is now based on an Expected credit loss (ECL) model. This change has not led to material changes upon transition. DSM uses an allowance matrix to measure the ECL for trade receivables. The loss rates depend on the specified aging categories and are based on historical write-off percentages. The applied loss rates are calculated separately for exposures in different business segments as these could vary based on the type of customers, type of sales, and the historical write-off date.

The table below provides information about the credit risk exposure per aging category and the ECL for trade receivables of € 1,395 million at 31 December 2018, see Note 13 'Current receivables'.

| | Weighted average loss rate | Gross carrying amount | Loss Allowance |
|---|---|---|---|
| Neither past due nor impaired | 1.1% | 1,166 | (13) |
| 1–29 days overdue | 2.6% | 167 | (4) |
| 30–89 days overdue | 3.4% | 45 | (2) |
| 90 days or more overdue | 92.8% | 17 | (16) |
| **Total** | | **1,395** | **(35)** |

The changes in the allowance for doubtful accounts receivable are as follows:

| | **2018** | 2017 |
|---|---|---|
| Balance at 1 January | **(21)** | **(25)** |
| Additions charged to income statement | (23) | (7) |
| Deductions | 9 | 10 |
| Exchange differences | - | 1 |
| Balance at 31 December | **(35)** | **(21)** |

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

| | **2018** | 2017 |
|---|---|---|
| Receivables from derivatives | 18 | 37 |
| Liabilities from derivatives | (36) | (4) |
| Net amount | (18) | 33 |

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'. Information about material impairments is presented in Note 2 'Alternative performance measures'.

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 are recognized in Other comprehensive income (Hedging reserve), and material 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 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 material 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 2018, DSM hedged USD 654 million (2017: USD 570 million) of its 2019 projected net cash flow in USD against the EUR by means of average-rate currency forward contracts at an average exchange rate of USD 1.22 per EUR for the four quarters of 2019. Each quarter, the relevant hedges for that quarter will be settled and recognized in the income statement. In 2018, DSM also hedged JPY 6,550 million (2017: JPY 5,550 million) of its 2019 projected net cash flow in JPY against the EUR by means of average-rate currency forward contracts at an average exchange rate of JPY 130 per EUR for the four quarters of 2019. DSM also hedged the projected CHF obligations against the EUR, namely CHF 262 million at an average exchange rate of CHF 1.15 per EUR. DSM discontinued the hedge of projected GBP cash obligations against CHF. These hedges have fixed the exchange rate for part of the USD and JPY receipts and CHF payments in 2019. Cash flow hedge accounting is applied for these hedges. As a result of similar hedges concluded in 2017 for the year 2018, € 1 million positive (2017: € 10 million negative) was recognized in the 2018 operating profit of the segments involved in accordance with the realization of the expected cash flows. There was no material 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 € 474 million (2017: CHF 204 million). There was no material ineffectiveness in relation to these hedges.

### Fair value hedges

There were no fair value hedges.

| | Cash flow hedges | | Net investment hedges | |
|---|---|---|---|---|
| | | | Foreign exchange - denominated debt | |
| | Foreign currency risk | | (CHF currency) | |
| | Inventory purchases | Other[1] | Assets | Liabilities |
| 2017 | | | | |
| Nominal amount hedged item | 19 | 511 | - | 175 |
| Carrying amount assets | 4 | 13 | - | 1 |
| Carrying amount liabilities | - | - | - | - |
| Line item balance sheet | Financial derivatives | Financial derivatives | Financial derivatives | Financial derivatives |
| | | | | |
| Change in the value of the hedging instrument | 4 | 40 | - | (1) |
| Costs of hedging recognized in OCI | 4 | 31 | - | (1) |
| Reclassified from hedging reserve to income statement | - | 9 | - | - |
| Line item income statement | Cost of sales | Sales | Other finex | Other finex |
| | | | | |
| **2018** | | | | |
| Nominal amount hedged item | 30 | 359 | - | 416 |
| Carrying amount assets | - | - | - | - |
| Carrying amount liabilities | 6 | 22 | - | 5 |
| Line item balance sheet | Financial derivatives | Financial derivatives | Financial derivatives | Financial derivatives |
| | | | | |
| Change in the value of the hedging instrument | (16) | (34) | - | (5) |
| Costs of hedging recognized in OCI | (10) | (33) | - | (5) |
| Reclassified from hedging reserve to income statement | (6) | (1) | - | - |
| Line item income statement | Cost of sales | Sales | Other finex | Other finex |

[1] Forward contracts, sales, receivables and borrowings.

## 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 financial 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 2017 | | | | | | | | | |
| Non-current financial derivatives | - | 16 | - | - | **16** | - | 16 | - | **16** |
| Other participating interests | - | - | - | 89 | **89** | 47 | - | 42 | **89** |
| Non-current loans to associates and JVs | 193 | - | - | - | **193** | - | 215 | - | **215** |
| Other non-current receivables | 177 | - | - | - | **177** | - | - | 177 | **177** |
| Other non-current deferred items | 16 | - | - | - | **16** | - | - | 16 | **16** |
| Trade receivables | 1,542 | - | - | - | **1,542** | - | - | 1,542 | **1,542** |
| Other current receivables | 93 | - | - | - | **93** | - | - | 93 | **93** |
| Current financial derivatives | - | 41 | - | - | **41** | - | 41 | - | **41** |
| Current investments | 954 | - | - | - | **954** | - | - | 954 | **954** |
| Cash and cash equivalents | 859 | - | 40 | - | **899** | 40 | - | 859 | **899** |
| Liabilities 2017 | | | | | | | | | |
| Non-current borrowings | (2,551) | - | - | - | **(2,551)** | (2,649) | - | - | **(2,649)** |
| Non-current financial derivatives | - | (4) | - | - | **(4)** | - | (4) | - | **(4)** |
| Other non-current liabilities | (188) | - | - | - | **(188)** | (149) | - | (39) | **(188)** |
| Current borrowings | (77) | - | - | - | **(77)** | (77) | - | - | **(77)** |
| Current financial derivatives | - | (20) | - | - | **(20)** | - | (20) | - | **(20)** |
| Trade payables | (1,452) | - | - | - | **(1,452)** | - | - | (1,452) | **(1,452)** |
| Other current liabilities | (536) | - | - | - | **(536)** | - | - | (536) | **(536)** |
| **Assets 2018** | | | | | | | | | |
| Non-current financial derivatives | - | 14 | - | - | **14** | - | 14 | - | **14** |
| Other participating interests | - | - | - | 164 | **164** | 63 | 33 | 68 | **164** |
| Non-current loans to associates and JVs | 2 | - | - | - | **2** | - | 2 | - | **2** |
| Other non-current receivables | 87 | - | - | - | **87** | - | - | 87 | **87** |
| Other non-current deferred items | 9 | - | - | - | **9** | - | - | 9 | **9** |
| Trade receivables | 1,575 | - | - | - | **1,575** | - | - | 1,575 | **1,575** |
| Current loans to associates and JVs | 24 | - | - | - | **24** | - | 26 | - | **26** |
| Other current receivables | 80 | - | - | - | **80** | - | - | 80 | **80** |
| Current financial derivatives | - | 21 | - | - | **21** | - | 21 | - | **21** |
| Current investments | 1,277 | - | - | - | **1,277** | - | - | 1,277 | **1,277** |
| Cash and cash equivalents | 941 | - | 340 | - | **1,281** | 340 | - | 941 | **1,281** |
| **Liabilities 2018** | | | | | | | | | |
| Non-current borrowings | (2,272) | - | - | - | **(2,272)** | (2,321) | - | - | **(2,321)** |
| Non-current financial derivatives | - | (3) | - | - | **(3)** | - | (3) | - | **(3)** |
| Other non-current liabilities | (197) | - | - | - | **(197)** | (117) | - | (80) | **(197)** |
| Current borrowings | (380) | - | - | - | **(380)** | (384) | - | - | **(384)** |
| Current financial derivatives | - | (51) | - | - | **(51)** | - | (51) | - | **(51)** |
| Trade payables | (1,430) | - | - | - | **(1,430)** | - | - | (1,430) | **(1,430)** |
| Other current liabilities | (527) | - | - | - | **(527)** | - | - | (527) | **(527)** |

During the year there were no transfers between individual levels of the fair value hierarchy.

### Notional value of derivative financial instruments

| | 2018 | | | 2017 | | |
|---|---|---|---|---|---|---|
| | Non-current | Current | Total | Non-current | Current | Total |
| Cross-currency interest rate swaps | (157) | (195) | (352) | (180) | (163) | (343) |
| Forward exchange contracts, currency options, currency swaps | - | (2,986) | (2,986) | - | (2,499) | (2,499) |
| Commodity derivatives | 13 | (30) | (17) | 13 | (19) | (6) |
| **Total** | **(144)** | **(3,211)** | **(3,355)** | **(167)** | **(2,681)** | **(2,848)** |

For interest rate swaps, the notional value is the principal on which the swap agreement is based. For cross-currency interest rate swaps, forward exchange contracts, currency options and currency swaps, the notional value is the hedged foreign exchange amount converted into euros. The notional value of the commodity derivatives is the hedged procurement cost translated into euros.

## 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 relate to obligations that will be settled in the future and require assumptions to project benefit obligations. 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) relate to the following:

### Pension costs

| | 2018 | 2017 |
|---|---|---|
| Defined benefit plans: | | |
| - Current service costs pension plans | 27 | 28 |
| - Other post-employment benefits | 2 | 2 |
| Defined contribution plans | 81 | 82 |
| **Total pension costs included in employee benefit costs** | **110** | **112** |
| - Pension costs included in Other operating (income) / expense | (10)[1] | (20)[1] |
| **Total in operating profit** | **100** | **92** |
| Pension costs included in financial income and expense | 6 | 8 |
| **Total** | **106** | **100** |
| Of which: | | |
| - Defined contribution plans | 81 | 82 |
| - Defined benefit plans | 25 | 18 |

[1] Curtailment gains because of plan amendments in the UK and Switzerland (in 2017 also including US)

For 2019, costs for the defined benefit plans relating to pensions are expected to be €39 million (2018: €35 million).

Changes in Employee benefit net liabilities recognized in the balance sheet are shown in the following overview:

### Employee benefit net liabilities

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | 394 | 530 |
| Changes: | | |
| - Balance of actuarial (gains)/losses | 77 | (70) |
| - Employee benefit costs | 24 | 18 |
| - Contributions by employer | (44) | (70) |
| - Exchange differences | 4 | (14) |
| - Transfers | 3 | - |
| **Total changes** | **64** | **(136)** |
| Balance at 31 December | 458 | 394 |

The Employee benefit net liabilities of € 458 million (2017: € 394 million) consist of € 438 million related to pensions (2017: € 374 million), € 6 million related to healthcare and other costs (2017: € 6 million) and € 14 million related to other post-employment benefits (2017: € 14 million).

### 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 2018 was 1.00% (2017: 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 12.4 years (2017: 12.9 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 2018, the Trustees agreed to a reduction of the conversion rate for both the accounts related to the higher and the lower income. This has reduced the pension liabilities in Switzerland. The Trustees also agreed to remove the over mandatory risk benefits to a separate over mandatory pension fund where a mandatory risk insurance is applicable. The plan assets are collectively invested (no individual investment choice). The current (estimated) funding level, based on local standards, is 108% (2017: 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 19.4 years (2017: 20.7 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. Following judgement in the Lloyds case (October 2018) with respect to Guaranteed Minimum Pensions (GMP), DSM estimated that equalization of GMPs will increase the liabilities by approximately 0.6%. As agreed during the 2015 valuation DSM pays an annual recovery contribution of GBP 1 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 98% (2017: 103%).

*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 11.8 years (2017: 12.8 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 2018, an ALM study was performed which will lead to an adjustment of the investment strategy that will be implemented in the course of 2019. 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 95% (2017: 97%), whereas the funding level on local standards (Pension Protection Act) is estimated at 109% (2017: 129%). 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. 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 DNP 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 15.5 years (2017: 15.6 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 €308 million (2017: €297 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**

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | **1,675** | **1,806** |
| Changes: | | |
| - Service costs | 27 | 28 |
| - Interest costs | 25 | 28 |
| - Contributions | 13 | 13 |
| - Actuarial (gains)/losses | (17) | 45 |
| - Past service costs | (10) | (17) |
| - Curtailments/termination benefits | - | 1 |
| - Exchange differences | 47 | (129) |
| - Settlements | - | (25) |
| - Disbursements | (45) | (75) |
| - New pension plan Switzerland | 91 | - |
| - Other | 2 | - |
| Balance at 31 December | **1,808** | **1,675** |

**Fair value of plan assets**

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | **1,301** | **1,298** |
| Changes: | | |
| - Interest income on plan assets | 19 | 20 |
| - Actuarial gains/(losses) | (94) | 115 |
| Actual return on plan assets | **(75)** | **135** |
| - Contributions by employer | 30 | 49 |
| - Contributions by employees | 13 | 13 |
| - Disbursement | (33) | (62) |
| - Exchange differences | 43 | (117) |
| - Settlements | - | (15) |
| - New pension plan Switzerland | 91 | - |
| Balance at 31 December | **1,370** | **1,301** |

The fair value of the plan asset consists of 98% of quoted assets (2017: 99%).

The actuarial gains/losses as included in the previous tables can be specified as follows:

### Remeasurement effects as included in Other comprehensive income

| | **2018** | 2017 |
|---|---|---|
| Defined benefit obligation major pension plans | | |
| Actuarial (gain)/loss due to experience | 35 | 24 |
| Actuarial (gain)/loss due to demographic assumption | - | (7) |
| Actuarial (gain)/loss due to financial assumption changes | (52) | 28 |
| Total | (17) | 45 |
| | | |
| Plan assets major pension plans | | |
| Change in irrecoverable surplus other than interest | - | (1) |
| Return on plan assets (greater)/ less than discount rate | (94) | 116 |
| Total | (94) | 115 |
| | | |
| **Actuarial (gain)/loss major plans** | **77** | **(70)** |
| | | |
| Actuarial (gain)/loss other plans | - | (13) |
| | | |
| **Total actuarial (gain)/loss** | **77** | **(83)** |

The major categories of pension-plan assets as a percentage of total plan assets are as follows:

### Pension-plan assets by category

| | **2018** | 2017 |
|---|---|---|
| Bonds | 47% | 43% |
| Equities | 29% | 35% |
| Property funds | 18% | 18% |
| Other | 6% | 4% |

The pension-plan assets include neither ordinary DSM shares nor property occupied by DSM.

The amounts recognized of these plans in the balance sheet are as follows:

### Net assets/liabilities

| | **2018** | 2017 |
|---|---|---|
| Major plans: | | |
| Present value of funded obligations | (1,490) | (1,370) |
| Fair value of plan assets | 1,370 | 1,301 |
| | | |
| **Net** | **(120)** | **(69)** |
| Present value of unfunded obligations | (318) | (305) |
| | | |
| Funded status | **(438)** | **(374)** |
| Effect of asset ceiling | - | - |
| | | |
| Net (liabilities) / assets major plans | **(438)** | **(374)** |
| | | |
| Net (liabilities) / assets other plans | (20) | (20) |
| | | |
| **Total net (liabilities) assets** | **(458)** | **(394)** |
| | | |
| Of which: | | |
| - Liabilities (Employee benefit liabilities) | (459) | (395) |
| - Assets (Prepaid pension costs) | 1 | 1 |

In 2019, DSM is expected to contribute € 32 million (actual 2018: € 30 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

| | **2018** | 2017 |
|---|---|---|
| Discount rate | 1.61% | 1.49% |
| Price inflation | 1.68% | 1.71% |
| Salary increase | 2.31% | 2.29% |
| Pension increase | 0.85—2.10% | 0.87—2.10% |

Year-end amounts for the current and previous periods are as follows:

### Major defined benefit plans per year

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Defined benefit obligations | (1,808) | (1,675) | (1,806) | (1,745) | (1,564) |
| Plan assets | 1,370 | 1,301 | 1,297 | 1,224 | 1,086 |
| Funded status of asset/(liability) | **(438)** | **(374)** | **(509)** | **(521)** | **(478)** |
| Experience adjustments on plan assets, gain/(loss) | (94) | 115 | 60 | (22) | 61 |
| Experience adjustments on plan liabilities, gain/(loss) | (35) | (24) | 15 | (39) | (1) |
| Gain/(loss) on liabilities due to changes in assumptions | 52 | (21) | (80) | (4) | (222) |

### 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 3.2% (2017: 3.6%) 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% (2017: 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 1.0% (2017:1.1%) in the defined benefit obligation

The sensitivity analysis is based on realistically possible changes as of 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 in 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 2017 | **604** | **944** | **(2,552)** | **(786)** | **(67)** | **(213)** | **(2,070)** |
| **Change from operating activities** | 996 | (20) | (2) | - | - | 45 | 1,019 |
| **Change from investing activities** | 689 | 30 | (4) | (20) | - | 21 | 716 |
| Reclassification from non-current to current | - | - | 12 | (12) | - | - | - |
| Transfers | (794) | - | (6) | 810 | (10) | - | - |
| Dividend | (200) | - | - | - | - | - | (200) |
| Interest | (135) | - | - | - | - | - | (135) |
| Proceeds from reissued shares | 107 | - | - | - | - | - | 107 |
| Repurchase of shares | (297) | - | - | - | - | - | (297) |
| Derivatives | (28) | - | - | - | - | 180 | 152 |
| Other | 3 | - | - | - | - | - | 3 |
| **Change from financing activities** | (1,344) | - | 6 | 798 | (10) | 180 | (370) |
| **Exchange differences** | (46) | - | 1 | - | 8 | - | (37) |
| **Total changes** | 295 | 10 | 1 | 778 | (2) | 246 | 1,328 |
| Balance at 31 December 2017 | **899** | **954** | **(2,551)** | **(8)** | **(69)** | **33** | **(742)** |
| **Change from operating activities** | 1,391 | - | (1) | - | - | 6 | 1,396 |
| **Change from investing activities** | (605) | 323 | - | (10) | 3 | 1 | (288) |
| Reclassification from non-current to current | - | - | 304 | (304) | - | - | - |
| Transfers | 22 | - | (24) | 12 | (9) | (1) | - |
| Dividend | (225) | - | - | - | - | - | (225) |
| Interest | (59) | - | - | - | - | - | (59) |
| Proceeds from reissued shares | 97 | - | - | - | - | - | 97 |
| Repurchase of shares | (236) | - | - | - | - | - | (236) |
| Derivatives | - | - | - | - | - | (58) | (58) |
| **Change from financing activities** | (401) | - | 280 | (292) | (9) | (59) | (481) |
| **Exchange differences** | (3) | - | - | 2 | 3 | - | 2 |
| **Total changes** | 382 | 323 | 279 | (300) | (3) | (52) | 629 |
| Balance at 31 December 2018 | **1,281** | **1,277** | **(2,272)** | **(308)** | **(72)** | **(19)** | **(113)** |

In 2018, the gearing (net debt / equity plus net debt) was 1.4% (in 2017: 9.5%).

## 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.

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

| | **2018** | 2017 |
|---|---|---|
| Operating working capital | | |
| | | |
| Balance at 1 January | 1,938 | 1,928 |
| Balance at 31 December | 2,138 | 1,938 |
| Balance sheet change | **200** | **10** |
| | | |
| Adjustments: | | |
| - Exchange differences | (34) | 200 |
| - Changes in consolidation (including acquisitions and disposals) | 34 | (10) |
| - Transfers/non-cash value adjustments | 46 | (5) |
| Total change in operating working capital according to the cash flow statement | **246** | **195** |

In 2018, the operating working capital was €2,138 million (2017: €1,938 million), which amounts to 24.2% of annualized fourth quarter net sales (2017: 22.3%).

## 27 Share-based compensation

The DSM Stock Incentive Plan provides rules for the grant of Restricted Share Units (RSU) and Performance Share Units (PSU), which have been granted as of 2017 to executives. The grant date of these management share units is the last trading day at the Amsterdam Stock Exchange in March.

The number of management 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 share price at the beginning of the first performance year. 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'); vesting of PSUs is in addition subject to the achievement of predetermined performance goals at the end of the vesting period. The PSUs granted in 2018 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) Efficiency Improvement

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 staff. Stock options have a term of 8 years and are subject to a vesting period of 3 years. Like RSUs, non-performance related stock options are subject to 'time vesting', whereas the vesting of performance related stock options depends on the realization of the same predefined performance goals as applicable to PSUs. Vested stock options can be exercised during a period of 5 years starting as per vesting date, subject to the plan rules. Unvested stock options will be forfeited. If employment is terminated prior to the vesting date, specific rules regarding vesting and forfeitures apply.

Share-based compensation regarding the Managing Board is included in Note 13 'Remuneration of Managing Board and Supervisory Board' to the Financial statements of the parent company.

Share units and stock options are settled by delivery of DSM shares.

## Overview of stock options

| Year of grant | Outstanding at 31 Dec. 2017 | In 2018 Exercised | In 2018 Average price (€) | In 2018 Forfeited/ expired | Outstanding at 31 Dec. 2018 | Fair value on grant date (€) | Exercise price (€) | Expiry date |
|---|---|---|---|---|---|---|---|---|
| 2010 | 60,750 | (60,750) | 82.72 | - | - | 6.07 | 33.10 | 6 Apr. 2018 |
| 2011 | 194,863 | (82,500) | 87.83 | - | 112,363 | 9.60 | 46.20 | 2 May 2019 |
| 2012 | 198,150 | (77,750) | 87.02 | - | 120,400 | 6.88 | 40.90 | 15 May 2020 |
| 2013 | 366,900 | (77,875) | 87.25 | (5,500) | 283,525 | 9.23 | 48.91 | 7 May 2021 |
| 2014 | 716,123 | (266,793) | 86.94 | (11,000) | 438,330 | 10.66 | 52.00 | 9 May 2022 |
| 2015[1,2] | 2,229,300 | (938,288) | 87.66 | (123,275)[3] | 1,167,737 | 9.89 | 50.98 | 5 May 2023 |
| 2016[1] | 2,445,150 | (116,250) | 85.65 | (201,275)[3] | 2,127,625 | 9.36 | 52.57 | 3 May 2024 |
| **2018 Total** | **6,211,236** | **(1,620,206)** | **87.17** | **(341,050)** | **4,249,980** | | | |
| Of which vested | 1,711,536 | | | | 2,250,605 | | | |
| | at 31 Dec. 2016 | | | | at 31 Dec. 2017 | | | |
| 2017 Total | 9,187,752 | (1,791,954) | 68.36 | (1,184,562) | 6,211,236 | | | |
| Of which vested | 1,983,364 | | | | 1,711,536 | | | |

1 Stock options may partly vest, and may therefore immediately be exercised, upon termination of employment in connection with, for example, divestments, retirement or early retirement. The remaining term to exercise stock options after such accelerated vesting is limited to 3 years (the remaining term to exercise in the case of regular vesting is 5 years).
2 Based on TSR performance, the stock incentives tied to performance granted in 2015 vested only partially; the remaining part has been forfeited.
3 Number of forfeited options: 123,275 (2015) and 201,275 (2016).

## Overview of management share units

| Year of issue | Outstanding at 31 Dec. 2017 | In 2018 Granted | In 2018 Vested | In 2018 Forfeited/[1] expired | Outstanding at 31 Dec. 2018 | Share price at date of grant (€) | Expiry date |
|---|---|---|---|---|---|---|---|
| 2017 | 440,143 | - | (23,114) | (39,299) | 377,730 | 67.33 | 5 May 2020 |
| 2018 | - | 292,270 | (4,932) | (12,948) | 274,390 | 80.04 | 31 Mar 2021 |
| **2018 Total** | **440,143** | **292,270** | **(28,046)** | **(52,247)** | **652,120** | | |
| | at 31 Dec. 2016 | | | | at 31 Dec. 2017 | | |
| 2017 Total | - | 449,312 | (4,206) | (4,963) | 440,143 | | |

1 Restricted and Performance Share Units may partly vest upon termination of employment in connection with, for example, divestments, retirement or early retirement.

DSM granted certain members of senior management share units based on Adjusted EBITDA and ROCE performance measures set for 2018 and 2019. Settlement in shares takes place after this two-year period. If employment is terminated prior to the settlement date, specific rules regarding vesting and forfeitures apply. Under this plan a total of 39,546 shares was granted, of which at the end of 2018 36,967 shares were outstanding and 2,579 were forfeited. The fair value of these shares is determined based on the market price at the end of the first quarter of 2018, adjusted for loss of dividend.

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. 2017 | In 2018 Granted | Exercised | Average price (€) | Forfeited/ expired | Outstanding at 31 Dec. 2018 | Fair value on grant date (€) | Exercise price (€) | Exercise period until |
|---|---|---|---|---|---|---|---|---|---|
| 2013 | 29,635 | - | (24,480) | 84.11 | (5,155) | - | 6.51 | 48.91 | May 2018 |
| 2014 | 57,075 | - | (19,500) | 85.59 | (140) | 37,435 | 5.68 | 52.00 | May 2019 |
| 2015 | 26,285 | - | (7,190) | 85.70 | (145) | 18,950 | 4.50 | 50.98 | May 2020 |
| 2016 | 138,730 | - | (37,275) | 85.69 | (1,170) | 100,285 | 4.38 | 52.57 | May 2021 |
| 2017 | 301,905 | - | (111,085) | 86.00 | (3,450) | 187,370 | 6.14 | 67.33 | May 2022 |
| 2018 | - | 490,820 | (41,175) | 90.67 | (8,690) | 440,955 | 8.50 | 85.00 | May 2023 |
| **2018 Total** | **553,630** | **490,820** | **(240,705)** | **86.52** | **(18,750)** | **784,995** | | | |
| 2017 Total | 551,230 | 433,505 | (381,900) | 69.80 | (49,205) | 553,630 | | | |

### Measurement of fair value

The costs of management share units are measured by reference to the fair value of the DSM share at the date on which the management 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**

| | 2018 | 2017 |
|---|---|---|
| Management shares | | |
| Risk-free rate | (0.44%) | (0.56%) |
| Expected share life in years | 3 | 3 |
| Nominal share life in years | 3 | 3 |
| Share price in € | 80.04 | 67.33 |
| Expected dividend in € | 5.55 | 5.25 |
| Fair value of share unit granted in € | 74.49 | 62.08 |
| | | |
| Employee options | | |
| Risk-free rate | (0.42%) | (0.56%) |
| Expected option life in years | 2.5 | 2.5 |
| Nominal option life in years | 5 | 5 |
| Share price in € | 85.00 | 67.33 |
| Exercise price in € | 85.00 | 67.33 |
| Volatility | 21.0% | 20.5% |
| Expected dividend | 2.18% | 2.60% |
| Fair value of option granted in € | 8.50 | 6.14 |

An amount of € 25 million is included in the costs for wages and salaries for share-based compensation (2017: € 23 million). The following table specifies the share-based compensation:

**Share-based compensation**

| | 2018 | 2017 |
|---|---|---|
| Employee stock options | 4 | 3 |
| Management stock options and share units | 16 | 16 |
| Performance shares | 5 | 4 |
| Total expense | **25** | **23** |

## 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 chapter '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 | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Sales to | 2 | 22 | 6 | 24 |
| Purchases from | 7 | 6 | 332 | 381 |
| Loans to | - | 12 | 26 | 181 |
| Receivables from | - | 26 | 8 | 122 |
| Payables to | - | 24 | 23 | 141 |
| Interest from | - | 4 | 7 | 14 |
| Commitments to | - | - | 4 | 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 € 72 million (2017: € 64 million).

Other related-parties disclosure relates entirely to the key management of DSM, being represented by the company's Managing Board, Executive Committee and Supervisory Board. For further details about the remuneration of the Managing Board, the Executive Committee and the Supervisory Board, please refer to Note 13 to the 'Parent company financial statements'.

## 29 Service fees paid to external auditors

The service fees recognized in the financial statements 2018 for the service of KPMG amounted to € 5.3 million (2017: € 4.9 million). The amounts per service category are shown in the following table.

The services rendered by KPMG NL in addition to the statutory audit include assurance engagements on non-financial information, on internal controls, a government grant and a regulatory filing, as well as agreed upon procedures on certain information for the remuneration committee, the pension fund and their external auditor, an insurance company and a third-party association.

| | Total service fee | | Of which | |
|---|---|---|---|---|
| | **KPMG** | KPMG | **KPMG NL** | KPMG NL |
| | **2018** | 2017 | **2018** | 2017 |
| Audit of the Group financial statements | 4.4 | 4.4 | 3.0 | 2.8 |
| Audit of other (statutory) financial statements | 0.5 | 0.4 | 0.1 | - |
| Other assurance services | 0.4 | 0.1 | 0.4 | 0.1 |
| **Total assurance services** | **5.3** | **4.9** | **3.5** | **2.9** |

## 30 Events after the balance sheet date

On 29 January 2019, DSM announced the intention to set up a company together with Nenter & Co. Inc. in China. DSM will acquire a 75% majority shareholding in this company for a cash consideration of about € 135 million, which will include all Nenter's production and related assets for Vitamin E. The company will exclusively produce Vitamin E for DSM subject to existing supply agreements of Nenter, and there will be a profit share agreement in place between DSM and Nenter. The transaction is subject to several regulatory approvals and expected to close in the second or third quarter of 2019. As of the date of gaining control, DSM will consolidate the entity.

On 4 February 2019, DSM agreed with the shareholders to increase its shareholding in Yantai Andre Pectin Co., Ltd. (China) from 28.95% to 75% for a consideration of about € 150 million. The remaining 25% of the shares in Yantai Andre Pectin continues to be held by the Shandong Andre Group. Andre Pectin is a leading specialty food ingredient producer. The company sales are about € 65 million with an EBITDA margin above 25%. DSM will consolidate the activities of Yantai Andre Pectin in its group results. The transaction is expected to close in the first half of the year 2019.

# Parent company financial statements

**Balance sheet at 31 December of Koninklijke DSM N.V. before profit appropriation**

| x € million | Notes | 2018 | 2017 |
|---|---|---|---|
| Assets | | | |
| *Non-current assets* | | | |
| Intangible assets | 2 | 431 | 433 |
| Property, plant and equipment | 3 | 13 | 12 |
| Financial assets | 4 | 10,480 | 9,640 |
| Deferred tax assets | 5 | 82 | 131 |
| Other deferred items | | 2 | - |
| | | **11,008** | **10,216** |
| *Current assets* | | | |
| Receivables | 6 | 123 | 79 |
| Financial derivatives | | - | 1 |
| Cash and cash equivalents | | - | 2 |
| | | **123** | **82** |
| | | | |
| **Total** | | **11,131** | **10,298** |
| | | | |
| Shareholders' equity and liabilities | | | |
| *Shareholders' equity* | 7 | | |
| Share capital | | 338 | 338 |
| Share premium | | 489 | 489 |
| Treasury shares | | (371) | (398) |
| Other reserves | | (55) | (622) |
| Retained earnings | | 6,304 | 5,386 |
| Profit for the year | | 1,077 | 1,769 |
| | | **7,782** | **6,962** |
| *Non-current liabilities* | | | |
| Borrowings | 8 | 2,243 | 2,542 |
| Other non-current liabilities | | 8 | - |
| | | **2,251** | **2,542** |
| *Current liabilities* | | | |
| Borrowings | 8 | 300 | - |
| Financial derivatives | | 5 | - |
| Other current liabilities | 9 | 793 | 794 |
| | | **1,098** | **794** |
| | | | |
| **Total** | | **11,131** | **10,298** |

## Income statement of Koninklijke DSM N.V.

| x € million | Notes | 2018 | 2017 |
|---|---|---|---|
| Other income | 1 | 167 | 173 |
| Cost of outsourced work and other external costs | | (88) | (84) |
| Wages and salaries | 11 | (65) | (72) |
| Social security and pension charges | | (7) | (8) |
| Amortization of intangible assets and depreciation of Property, plant and equipment | | (9) | (12) |
| Total operating expenses | | (169) | (176) |
| **Operating profit** | | **(2)** | **(3)** |
| Financial income | 12 | - | 15 |
| Financial expense | 12 | (76) | (105) |
| **Result before income tax** | | **(78)** | **(93)** |
| Income tax | 5 | 14 | 18 |
| Share of the profit of subsidiaries | 4 | 1,054 | 590 |
| **Result after income tax** | | **990** | **515** |
| Share of the profit of associates and joint ventures | 4 | 11 | 18 |
| Other results related to associates and joint ventures | 4 | 76 | 1,236 |
| **Net profit attributable to equity holders of Koninklijke DSM N.V.** | | **1,077** | **1,769** |

# Notes to the parent company financial statements

## 1 General

Unless stated otherwise, all amounts are in € million.

The Parent company financial statements are the financial statements of Koninklijke DSM N.V., which have been prepared in accordance with accounting principles generally accepted in the Netherlands.

The accounting policies used are the same as those used in the consolidated 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. The balance sheet presentation is aligned with the consolidated financial statements in order to enhance transparency and facilitate understanding.

The statutory seat of Royal DSM is Het Overloon 1, Heerlen (Netherlands). A list of DSM 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 with the Dutch Commercial Register under number 14022069.

Information on the use of financial instruments and on related risks for the group is provided in the 'Notes to the consolidated financial statements of Royal DSM'.

Other income consists mainly of the charged corporate overhead and services to the group companies.

The company forms a fiscal unity for corporate income tax 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.

## 2 Intangible assets

The carrying amount of intangible assets mainly comprises goodwill on the acquisition of NeoResins in 2005 (€358 million), Crina in 2006 (€8 million) and Pentapharm in 2007 (€34 million). For further information on these assets including the discussion of the related impairment tests, please refer to Note 8 'Intangible assets' in the 'Notes to the consolidated financial statements of Royal DSM'.

| | Goodwill | Under construction | Other | Total |
|---|---|---|---|---|
| *Balance at 1 January 2017* | | | | |
| Cost | 403 | 4 | 78 | 485 |
| Amortization and impairment losses | - | - | 38 | 38 |
| Carrying amount | **403** | **4** | **40** | **447** |
| Change in carrying amount | | | | |
| - Capital expenditure | - | 1 | - | 1 |
| - Put into operation | - | (4) | 4 | - |
| - Exchange difference | (4) | - | - | (4) |
| - Amortization | - | - | (8) | (8) |
| - Impairment losses | - | - | (3) | (3) |
| | (4) | (3) | (7) | (14) |
| *Balance at 31 December 2017* | | | | |
| Cost | 399 | 1 | 83 | 483 |
| Amortization and impairment losses | - | - | 50 | 50 |
| Carrying amount | **399** | **1** | **33** | **433** |
| Change in carrying amount | | | | |
| - Capital expenditure | - | 4 | - | 4 |
| - Put into operation | - | (1) | 1 | - |
| - Exchange difference | 1 | - | - | 1 |
| - Amortization | - | - | (7) | (7) |
| | 1 | 3 | (6) | (2) |
| *Balance at 31 December 2018* | | | | |
| Cost | 400 | 4 | 85 | 489 |
| Amortization and impairment losses | - | - | 58 | 58 |
| Carrying amount | **400** | **4** | **27** | **431** |

## 3 Property, plant and equipment

This item mainly relates to land and buildings. Capital expenditure in 2018 was €2 million (2017: €2 million), while the depreciation charge in 2018 was €2 million (2017: €1 million). The historical cost of Property, plant and equipment at 31 December 2018 was €63 million (2017: €61 million); accumulated depreciation amounted to €50 million (2017: €49 million).

## 4 Financial assets

| | Subsidiaries | | Associates and JVs | | Other | Receivables | Total |
|---|---|---|---|---|---|---|---|
| | Share in equity | Loans | Share in equity | Loans | participating interests | | |
| Balance at 1 January 2017 | **9,433** | **-** | **432** | **-** | **-** | **110** | **9,975** |
| Changes: | | | | | | | |
| - Share in profit | 590 | - | 18 | - | - | - | 608 |
| - Charged to income statement | - | - | - | - | - | 30 | 30 |
| - Dividend received | (80) | - | - | - | - | - | (80) |
| - Capital payments | 11 | - | - | - | - | - | 11 |
| - Repayments | - | - | - | - | - | (43) | (43) |
| - Net actuarial gains/(losses) | 61 | - | - | - | - | - | 61 |
| - Change in Fair value reserve | (3) | - | - | - | - | - | (3) |
| - Change in Hedging reserve | 35 | - | 5 | - | - | - | 40 |
| - Exchange differences | (591) | - | (47) | - | - | (6) | (644) |
| - Disposals | - | - | (249) | - | - | - | (249) |
| - Impairments | - | - | (20) | - | - | - | (20) |
| - Others | (47) | - | 1 | - | - | - | (46) |
| Balance at 31 December 2017 | **9,409** | **-** | **140** | **-** | **-** | **91** | **9,640** |
| Changes: | | | | | | | |
| - Share in profit | 1,054 | - | 11 | - | - | - | 1,065 |
| - Charged to income statement | - | - | - | - | - | (33) | (33) |
| - Dividend received | (198) | - | - | - | - | - | (198) |
| - Capital payments | 49 | - | - | - | - | - | 49 |
| - Repayments | - | - | - | - | - | - | - |
| - Net actuarial gains/(losses) | (66) | - | - | - | - | - | (66) |
| - Change in Fair value reserve | 15 | - | - | - | 1 | - | 16 |
| - Change in Hedging reserve | (38) | - | (2) | - | - | - | (40) |
| - Exchange differences | 138 | - | - | - | - | - | 138 |
| - Disposals | - | - | (144) | - | - | - | (144) |
| - Other | 44 | - | (5) | - | 36 | (22) | 53 |
| Balance at 31 December 2018 | **10,407** | **-** | **-** | **-** | **37** | **36** | **10,480** |

For movements in 'Associates and joint arrangements', Note 10 to the 'Consolidated financial statements'.

Disposals in 2018 relate to the divestment of DSM's share in DSM Sinochem Pharmaceuticals. Disposals in 2017 relate to the divestment of DSM's share in Patheon, including the settlement of the earn-out receivable. See Note 10 to the 'Consolidated financial statements'.

## 5 Deferred tax assets

This item mainly relates to net operating losses in the Dutch fiscal unity. In 2018, a tax income of € 14 million (2017: tax income of € 18 million) was included and other movements (mainly settlements with group companies and utilization of net operating losses) of -€ 63 million (2017: -€ 60 million).

## 6 Receivables

| | 2018 | 2017 |
|---|---|---|
| Receivable from subsidiaries | 94 | 52 |
| Other receivables / deferred items | 29 | 27 |
| **Total** | **123** | **79** |

## 7 Shareholders' equity

| | 2018 | 2017 |
|---|---|---|
| Balance at 1 January | 6,962 | 6,072 |
| Net profit | 1,077 | 1,769 |
| Exchange differences, net of income tax | 144 | (637) |
| Net actuarial gains/(losses) on defined benefit obligations | (66) | 74 |
| Dividend | (365) | (320) |
| Repurchase of shares | (236) | (297) |
| Proceeds from reissue of ordinary shares | 242 | 233 |
| Other changes | 24 | 68 |
| Balance at 31 December | 7,782 | 6,962 |

For details see the consolidated statement of changes in 'Equity' (Note 16) on page 191.

In 2018, an amount of €423 million was transferred from retained earnings to other reserves in order to apply a consistent treatment with the consolidated financial statements.

### Legal reserve

In Shareholders' equity, an amount of €37 million (2017: -€107 million) is included for Translation reserve, -€166 million (2017: -€148 million) for Hedging reserve, €21 million (2017: €5 million) for Fair value reserve and €253 million (2017: €182 million) for intangible assets related to product development projects. In addition, a legal reserve of €108 million (2017: €126 million) is recognized for profits that cannot be distributed and received in the Netherlands.

### 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 2018, the net profit is €1,077 million (2017: €1,769 million) and the amount to be appropriated to the reserves has been established at €665 million (2017: €1,438 million). From the subsequent balance of the net profit of €412 million (2017: €331 million), dividend is first distributed on the cumulative preference shares B. At the end of 2018 no cumprefs B were in issue (same as for 2017). Subsequently, a 3.26% (2017: 3.26%) dividend is distributed on the cumulative preference shares A, based on a share price of €5.29 (2017: €5.29) per cumulative preference share A. For 2018, this distribution amounts to €0.17 (2017: €0.17) per share, which is €8 million in total. An interim dividend of €0.06 per cumulative preference share A having been paid in August 2018, the final dividend will then amount to €0.11 per cumulative preference share A.

The profit remaining after distribution of these dividends on the cumulative preference shares A of €1,069 million (2017: €1,761 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 2018 of €2.30 (2017: €1.85) per share. With an interim dividend of €0.77 (2017: €0.58) per ordinary share having been paid in August 2017, the final dividend would then amount to €1.53 (2017: €1.27) 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:

**Profit appropriation**

| | 2018 | 2017 |
|---|---|---|
| Net profit | 1,077 | 1,769 |
| Profit appropriation: | | |
| - To be added to the reserves | 665 | 1,438 |
| - Dividend on cumprefs A | 8 | 8 |
| - Interim dividend on ordinary shares | 135 | 101 |
| - Final dividend distributable on ordinary shares | 269 | 222 |

## 8 Borrowings

| | 2018 | | 2017 | |
|---|---|---|---|---|
| | Total | Of which current | Total | Of which current |
| Debenture loans | 2,543 | 300 | 2,542 | - |
| Commercial paper | - | - | - | - |
| **Total** | **2,543** | **300** | **2,542** | **-** |

At 31 December 2018, there were four debenture loans (€2,543 million, maturing in 2019, 2022 and from 2023 through 2027).

The repayment schedule for borrowings (excluding commercial paper) is as follows:

### Borrowings by maturity

| | 2018 | 2017 |
|---|---|---|
| 2018 | - | - |
| 2019 | 300 | 300 |
| 2020 | - | - |
| 2021 and 2022 | 500 | 500 |
| 2023 through 2027 | 1,743 | 1,742 |
| **Total** | **2,543** | **2,542** |

In agreements governing loans with a residual amount at year-end 2018 of €2,543 million, of which €300 million is of a current nature (31 December 2017: €2,542 million, of which zero was of a current nature), 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

| | 2018 | 2017 |
|---|---|---|
| Liabilities to subsidiaries | 732 | 729 |
| Other liabilities | 61 | 65 |
| **Total** | **793** | **794** |

## 10 Contingent liabilities

Guarantee obligations on behalf of affiliated companies and third parties amounted to €462 million (31 December 2017: €379 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 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 2018 was 350 (2017: 372), all of whom are based in the Netherlands.

## 12 Financial income and expense

Financial expense of €76 million (2017: net €90 million) mainly consists of the interest costs on bonds issued and the counterpart of the net investment hedge. See also Note 19 and Note 23 to the 'Consolidated financial statements'.

## 13 Remuneration of Managing Board and Supervisory Board

### Remuneration Managing Board in 2018

The actual remuneration of the members of the Managing Board is determined by the Supervisory Board within the framework of the Remuneration Policy as approved by the Annual General Meeting of Shareholders. More details on the 'Remuneration policy Managing Board' on page 131 are included in the 'Report by the Supervisory Board'.

### Base salary in 2018

Base salaries have been adjusted at the discretion of the Supervisory Board taking into consideration the 'general increase' (market movement) for DSM executives in the Netherlands as well as the general movements of the labor-market peer group as described in our remuneration policy. On average the adjustment amounts to 2.7% (CEO 2.4% and members Managing Board 2.9%).

**Fixed annual base salary**

| in € | **1 July 2018** | 1 July 2017 |
|---|---|---|
| Feike Sijbesma | 942,500 | 920,000 |
| Geraldine Matchett | 622,500 | 605,000 |
| Dimitri de Vreeze | 622,500 | 605,000 |

### Short-Term Incentives (STI) for 2018

STI targets are revised annually to ensure that they are stretching but realistic. Considerations regarding the performance targets are influenced by the operational and strategic course taken by the company and are directly linked to the company's ambitions. The targets are determined at the beginning of the year for each Board member.

*Target STI level and pay-out*

The on target STI level set in the remuneration policy is 50% of annual base salary. Excellent over-achievement may increase the STI pay-out to 100% of the annual base salary. This Report presents the Short-Term Incentives earned on the basis of the results achieved in 2018. These Short-Term Incentives will be paid out in 2019.

The Supervisory Board has established the extent to which the targets set for 2018 were achieved, resulting in an average overall achievement of 80%, compared to 75% in 2017. All targets for 2018 were set in line with the published strategic, financial and sustainability goals. The financial targets Adjusted EBITDA, Gross Free Cash Flow and Net sales growth have all been achieved at maximum level. For the sustainability targets, the score on Brighter Living Solutions was on target, and the score on the Employee Engagement Index was significantly overachieved. The Safety Performance score was, disappointingly, below target. Managing Board members also have individual targets. The scores achieved on these targets were above target. The realization of the 2018 financial STI targets has been assessed by KPMG. Furthermore, KPMG has assessed the validation process for target realization of the non-financial STI targets.

Under the STI Deferral and Share Matching Plan, only part of the STI outcome is paid in cash: 25% of the gross STI pay-out is mandatorily converted into DSM Investment Shares. In addition, Managing Board members may decide to convert an additional part of the STI pay-out into Investment Shares (minimum 5%; maximum 25%; incremental steps of 5%). The company matches these STI Investment Shares with an equivalent number of Performance Share Units (PSUs), vesting after three years, subject to holding the Investment Shares during the vesting period and the achievement of predefined performance targets equivalent to the measures under the Long-Term Incentive (LTI) Plan. The remainder (if any left after deduction for tax) of the STI pay-out (50% to maximum 75%) is delivered in cash.

**Short-Term Incentives**

| in € | **2018**[1] | 2017[2] |
|---|---|---|
| Feike Sijbesma | 756,641 | 682,500 |
| Geraldine Matchett | 498,672 | 448,125 |
| Dimitri de Vreeze | 483,328 | 448,125 |

[1] Based on results achieved in 2018 and therefore payable in 2019.
[2] Based on results achieved in 2017 and therefore paid in 2018.

All members of the Managing Board decided to invest the maximum of 50% of their gross 2017 STI (payable in 2018) in accordance with the STI Deferral and Share Matching Plan. In all cases, these Investment Shares were matched with an equal number of Performance Share Units (PSUs). This was also the case with the gross 2018 STI (to be paid in 2019).

### Long-Term Incentives (LTI)

The following table provides an overview of the LTI Performance Shares granted to members of the Managing Board. These Performance Shares are subject to a three-year vesting period.

**Number of LTI performance shares granted[1]**

| | **2018** | 2017 |
|---|---|---|
| Feike Sijbesma | 17,000 | 23,500 |
| Geraldine Matchett | 11,000 | 15,500 |
| Dimitri de Vreeze | 11,000 | 15,500 |

[1] Grant according to Koninklijke DSM N.V. Performance Share Plan

For 2019, the number of conditionally granted ordinary shares under the LTI program will be:

- Chairman 18,500
- Members 12,500

For an overview of all granted and vested stock options and Performance Shares, see 'Overview of stock options' on page 227.

In 2018, the Supervisory Board determined the vesting of the Performance Shares granted in 2015. The following performance measures applied to the 2015 grant: relative Total Shareholder Return (TSR) versus peer group, Return on Capital Employed (ROCE), Energy Efficiency Improvement (EEI) and the Greenhouse Gas Emissions (GHGE) Efficiency Improvement, each determining 25% of the total vesting percentage. The applicable vesting schemes were published in DSM's 2015 Integrated Annual Report. DSM's TSR performance resulted in a vesting above target level yet below maximum; the performance on the remaining targets (Return on Capital Employed, Greenhouse Gas Emissions and Energy Efficiency Index) resulted in maximum vesting. This strong performance on all financial and non-financial parameters over the last 3 years resulted in a clear increase in the number of shares vested (much smaller number of shares forfeited) to 142.5% of target. As explained in the remuneration policy, based on face value, the initial grant equals 150% of target, therefore this performance leads to the vesting of 95% of the number of shares granted in 2015.

### Pensions in 2018

The members of the Managing Board participate in the Dutch pension fund Stichting Pensioenfonds DSM Nederland (PDN). This pension scheme for the Managing Board is equal to the pension scheme for other DSM employees in the Netherlands. Reference is made to the website of the pension fund.

### Revision and claw-back of incentives

As in 2017, no revision or claw-back of any incentives occurred in 2018.

### Pay ratio

Under the Dutch Corporate Governance Code companies are required to publish a pay ratio. As the code does not provide a definition of the pay ratio, the calculation method applied will vary per company, which will make the pay ratio data incomparable. The pay ratio per company will also differ year on year, since the variable pay (as a percentage of annual base salary) of the CEO/Managing Board is typically much higher (100% at target) than the variable pay of the comparable average employee group (about 5-10% of annual base pay), and this variable pay will fluctuate with business results. On top of that, different regions of the world have different pay structures, so acquisitions/divestments, growth in certain areas and foreign exchange rates will equally influence the pay ratio. DSM complies with the Dutch Corporate Governance Code in providing a pay ratio, as measured per 31 December 2018.

The pay ratio calculated versus the Dutch employee remuneration average, will be 26:1 (2017: 20:1) (compared to CEO remuneration) or 20:1 (2017: 16:1) (compared to average Managing Board remuneration). This is based on total cost of €503 million in the Netherlands (which includes the remuneration of the Managing Board and has been deducted in the ratio calculation) and a head count in the Netherlands of 3,827 as per 31 December 2018. The increase is due to the higher number of shares that now vested (so a lower number of shares that were forfeited over the period 2015-2017) of the total number of shares that were granted in 2015, due to the good performance of the company.
The ratio of total remuneration, including annual base salary, Short-Term Incentive, Long-Term Incentive and other benefits such as pension (as reported in this Integrated Annual Report) versus the average of total global employee (i.e. including Dutch) remuneration is for the CEO 40:1 (2017: 32:1). The pay ratio of the average Managing Board total remuneration versus the average of total global employee remuneration is 31:1 (2017: 25:1). The increase is due to the explanation given above.

However, if the pay ratio is calculated on the basis of the estimated vesting %, so without the additional non-cash vesting of shares for the series 2015-2017, the pay ratio compared to the Dutch employee average for the CEO would be 22:1 (2017: 20:1) and for the average of the Managing Board remuneration 17:1 (2017: 16:1). Compared to the total global employee remuneration these would be 34:1 (2017: 32:1) for the CEO and 26:1 (2017: 25:1) for the average of the Managing Board.

Underlying data for the pay ratio calculation can be retrieved from table 'DSM's remuneration expense for the Managing Board and the Executive Committee' (see next table) and the accompanying Note explaining the adjustment in the column Share-based compensation, as well as Note 4 table 'Geographical information' on page 177 under 'Workforce at year-end' and Note 5 table 'Employee benefit costs' on page 180 of the 'Consolidated financial statements'. Data for the Netherlands are explicitly mentioned as they are not directly retrievable.

### Related party identification of key management personnel per IAS 24

The members of the Executive Committee in 2018 are the Managing Board members Feike Sijbesma (CEO/Chairman), Geraldine Matchett (CFO) and Dimitri de Vreeze (Materials), as well as Chris Goppelsroeder (Nutritional Products), Philip Eykerman (Food Specialties and Strategy and M&A), Rob van Leen (R&D and Innovation) and Judith Wiese (People & Organization). The members of the Executive Committee meet the definition of key management personnel as defined in IAS24 'related parties'.

To comply with the disclosure requirements for key management personnel, the table provides, for each Managing Board Member, the total remuneration expenses (including base salary Short- and Long-term incentives, pension- and other expenditures), including other related costs according to IFRS accounting rules, not always being payments to the individual members. In addition, the table provides the aggregated total remuneration and related costs for the other Executive Committee members.

### DSM's remuneration expense for the Managing Board and the Executive Committee (the costs reported here for DSM, according to IFRS definitions, are not in all cases the compensation paid, nor the cash outflows for DSM)

| x € thousand | Salary | | Short-Term Incentive | | Pension expenditure | | Share-based[1] compensation | | Other items[2] | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2018** | 2017 | **2018** | 2017 | **2018** | 2017 | **2018** | 2017 | **2018** | 2017 | **2018** | 2017 |
| Feike Sijbesma | 931 | 910 | 757 | 683 | 218 | 214 | 1,415 | 850 | 58 | 50 | 3,379 | 2,707 |
| Geraldine Matchett | 614 | 598 | 499 | 448 | 107 | 101 | 933 | 634 | 116 | 74 | 2,269 | 1,855 |
| Stephan Tanda[3] | - | 49 | - | - | - | 9 | - | (895) | - | 1 | - | (836) |
| Dimitri de Vreeze | 614 | 598 | 483 | 448 | 123 | 112 | 922 | 552 | 46 | 39 | 2,188 | 1,749 |
| **Total Managing Board** | **2,159** | **2,155** | **1,739** | **1,579** | **448** | **436** | **3,270** | **1,141** | **220** | **164** | **7,836** | **5,475** |
| Other members of the Executive Committee | 2,056 | 1,995 | 1,648 | 1,497 | 421 | 432 | 1,529 | 1,271 | 1,173[4] | 298 | 6,827 | 5,493 |
| **Total Executive Committee** | **4,215** | **4,150** | **3,387** | **3,076** | **869** | **868** | **4,799** | **2,412** | **1,393** | **462** | **14,663** | **10,968** |

1 Share-based compensation expense represents the non-cash cost for DSM of performance shares awarded to members of the Managing Board and stock options to other members of the Executive Committee. These costs are recognized over the vesting period of the performance shares and stock options and therefore cover several years. The percentage of vesting of shares and stock options will determine the final income for the Managing Board and Executive Committee members.

2 Other items include company car and allowances.

3 Left DSM to pursue his career outside of the company as of 1 February 2017. The cumulative expense of the share-based compensation previously recognized for not yet vested performance shares has been reversed in 2017.

4 Includes € 727,000 subject to Article 32bb of the Dutch Wage Tax Act, being in fact a penalty to the company due to vesting of already granted shares in previous years.

### Note:

The above reported figures include in the column Share-based compensation 2018 amounts related to the period 2015–2017 as a result of shares that vested in 2018 at a percentage higher than previously estimated (so a lower percentage of shares that were forfeited over the period 2015-2017), due to the good performance of the company over the recent years. In accordance with IFRS2 this has been adjusted. The adjustment concerns € 565,000, € 348,000 and € 367,000 (and € 1,280,000 in total) for respectively Feike Sijbesma, Geraldine Matchett and Dimitri de Vreeze. Without this adjustment for accounting purposes, the expenses for share based compensation would be € 850,000 for Feike Sijbesma (*total remuneration expenses would amount to* € 2,814,000); € 585,000 for Geraldine Matchett (*total remuneration expenses would amount to* € 1,921,000) and € 555,000 for Dimitri de Vreeze (*total remuneration expenses would amount to* € 1,821,000).

## Outstanding and exercised stock incentives

The following tables show the number of outstanding stock incentives held by each member of the Managing Board. Since 2010, the Managing Board has been granted LTI Performance Shares instead of stock options.

### Outstanding Performance Shares and Performance Share Units

| | Year of issue | Outstanding at 31 Dec. 2017 | In 2018 Granted | In 2018 Vested | In 2018 Forfeited / expired | Outstanding at 31 Dec. 2018 | Share price at date of grant (€) |
|---|---|---|---|---|---|---|---|
| **Feike Sijbesma** | 2015 | 32,051 | - | (30,601) | (1,450) | - | 52.58 |
| | 2016 | 36,350 | - | - | - | 36,350 | 48.79 |
| | 2017 | 29,333 | - | - | - | 29,333 | 63.65 |
| | 2018 | - | 21,264 | - | - | 21,264 | 80.04 |
| | **Total** | **97,734** | **21,264** | **(30,601)** | **(1,450)** | **86,947** | |
| Retained shares originated from performance shares | | | | | | 97,125 | |
| **Geraldine Matchett** | 2015 | 27,008 | - | (26,058) | (950) | - | 52.58 |
| | 2016 | 24,006 | - | - | - | 24,006 | 48.79 |
| | 2017 | 19,092 | - | - | - | 19,092 | 63.65 |
| | 2018 | - | 13,800 | - | - | 13,800 | 80.04 |
| | **Total** | **70,106** | **13,800** | **(26,058)** | **(950)** | **56,898** | |
| Retained shares originated from performance shares | | | | | | 17,638 | |
| **Dimitri de Vreeze** | 2015 | 20,836 | - | (19,886) | (950) | - | 52.58 |
| | 2016 | 24,005 | - | - | - | 24,005 | 48.79 |
| | 2017 | 19,092 | - | - | - | 19,092 | 63.65 |
| | 2018 | - | 13,800 | - | - | 13,800 | 80.04 |
| | **Total** | **63,933** | **13,800** | **(19,886)** | **(950)** | **56,897** | |
| Retained shares originated from performance shares | | | | | | 14,858 | |
| **Other members Executive Committee** | 2016 | 53,616 | - | (5,968) | (5,967) | 41,681 | 48.79 |
| | 2017 | 45,577 | - | (5,097) | (5,096) | 35,384 | 63.65 |
| | 2018 | - | 34,645 | - | - | 34,645 | 80.04 |
| | **Total** | **99,193** | **34,645** | **(11,065)** | **(11,063)** | **111,710** | |
| | | | | | | - | |

### Outstanding stock options

| | Year of issue | Outstanding at 31 Dec. 2017 | In 2018 Exercised | In 2018 Forfeited/ expired | Outstanding at[1] 31 Dec. 2018 | Average share price at exercise (€) | Exercise price (€) | Expiry date |
|---|---|---|---|---|---|---|---|---|
| **Dimitri de Vreeze** | 2010 | 18,000 | (18,000) | - | - | 80.32 | 33.10 | 6 Apr 2018 |
| | 2011 | 18,000 | - | - | 18,000 | | 46.20 | 2 May 2019 |
| | 2012 | 12,000 | - | - | 12,000 | | 40.90 | 15 May2020 |
| | 2013 | 12,000 | - | - | 12,000 | | 48.91 | 7 May 2021 |
| | **Total** | **60,000** | **(18,000)** | **-** | **42,000** | | | |
| | Of which vested | 60,000 | | | 42,000 | | | |

1 The other members of the Managing Board do not hold any stock options.

### Shareholding

In addition to the Performance Shares granted under the DSM Stock Incentive Plan, the members of the Managing Board have themselves invested in DSM shares. All members of the Managing Board have purchased shares in the company to emphasize their confidence in the company and its strategy. At 31 December 2018, the members of the Managing Board together held 228,753 (2017: 174,734 ) shares in Koninklijke DSM N.V. These shares were bought through private transactions with private funds (including shares purchased through STI deferral) or obtained through the vesting of Performance Shares.

### Managing Board holdings of DSM shares

| | **31 December 2018** | | | 31 December 2017 | | |
|---|---|---|---|---|---|---|
| | Ordinary shares purchased with private money | Holdings from vested performance shares | Total holdings | Ordinary shares purchased with private money | Holdings from vested performance shares | Total holdings |
| Feike Sijbesma | 68,473 | 97,125 | 165,598 | 64,209 | 81,035 | 145,244 |
| Geraldine Matchett | 10,776 | 17,638 | 28,414 | 7,976 | - | 7,976 |
| Dimitri de Vreeze | 19,883 | 14,858 | 34,741 | 17,083 | 4,431 | 21,514 |
| **Total holdings** | **99,132** | **129,621** | **228,753** | **89,268** | **85,466** | **174,734** |

### Loans

The company did not provide any loans to members of the Managing Board.

### Scenario analysis

In line with the Dutch Corporate Governance Code, a scenario analysis on the possible outcome of variable income components has been conducted.

### Supervisory Board remuneration in 2018

The remuneration package for the Supervisory Board concerns an annual fixed fee and an annual committee membership fee. In addition to the reimbursement of business expenses (partially covered by a fixed representation allowance of € 1,250 per year), Supervisory Board members receive an intercontinental travel allowance for each meeting that they attend outside their continent of residence of € 4,000.

The annual fixed fee for the Chair of the Supervisory Board is € 85,000 (2017: € 85,000). The other members of the Supervisory Board each receive a fixed fee of € 60,000 (2017: € 60,000). Audit Committee membership is awarded € 10,000 (2017: € 10,000) for each member and € 15,000 (2017: € 15,000) for the Chair. Nomination Committee, Remuneration Committee and Sustainability Committee membership is awarded € 7,000 (2017: € 7,000) per member and € 10,000 (2017: € 10,000) for the Chair.

### Overview of remuneration awarded to the Supervisory Board in 2018

The total remuneration (annual fixed fee, annual committee membership fee and other costs such as the intercontinental travel allowance) of the members of the Supervisory Board amounted to € 0.7 million (2017: € 0.7 million).

### Remuneration Supervisory Board members

| in € | Annual fixed fee | Committee fee | Other costs | | Total |
|---|---|---|---|---|---|
| | | | | **2018** | 2017 |
| Rob Routs, Chair | 85,000 | 17,000 | 5,250 | 107,250 | 107,250 |
| Tom de Swaan, Deputy Chair (until 9 May 2018) | 30,000 | 8,800 | 625 | 39,425 | 87,250 |
| Victoria Haynes | 60,000 | 17,000 | 17,250 | 94,250 | 94,250 |
| Pierre Hochuli (until 3 May 2017) | - | - | - | - | 25,980 |
| Eileen Kennedy | 60,000 | 17,000 | 13,250 | 90,250 | 94,250 |
| Pauline van der Meer Mohr, Deputy Chair (as of 9 May 2018) | 60,000 | 17,000 | 5,250 | 82,250 | 82,250 |
| Frits van Paasschen (as of 3 May 2017) | 60,000 | 17,000 | 25,250 | 102,250 | 68,270 |
| Pradeep Pant | 60,000 | 17,000 | 21,250 | 98,250 | 102,250 |
| John Ramsay (as of 3 May 2017) | 60,000 | 17,200 | 5,250 | 82,450 | 51,605 |
| **Total** | **475,000** | **128,000** | **93,375** | **696,375** | **713,355** |
| Total 2017 | 485,000 | 130,667 | 97,688 | 713,355 | |

### Committee Overview

| | Nomination | Remuneration | Audit | Sustainability |
|---|---|---|---|---|
| Rob Routs, Chair | Chair | Member | - | - |
| Tom de Swaan, Deputy Chair (until 9 May 2018) | - | Member until 9 May 2018 | Chair until 9 May 2018 | - |
| Pauline van der Meer Mohr, Deputy Chair (as of 9 May 2018) | Member | Chair | - | - |
| Victoria Haynes | - | Member | Member | - |
| Eileen Kennedy | Member | - | - | Chair |
| Frits van Paasschen | - | - | Member | Member |
| Pradeep Pant | - | - | Member | Member |
| John Ramsay | - | Member as of 9 May 2018 | Chair as of 9 May 2018 | - |

At year-end 2018, three members of the Supervisory Board held shares in Koninklijke DSM N.V.: Victoria Haynes 300 (2017: 300), Pauline van der Meer Mohr 1,529 (2017: 1,029) and John Ramsay 1,057 (2017: 0).

### Loans
The company did not provide any loans to members of the Supervisory Board.

Heerlen, 7 March 2019

Managing Board,

Feike Sijbesma, CEO/Chairman
Geraldine Matchett, CFO
Dimitri de Vreeze

Heerlen, 7 March 2019

Supervisory Board,

Rob Routs, Chair
Pauline van der Meer Mohr, Deputy Chair
Victoria Haynes
Eileen Kennedy
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 2018 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 2018 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 2018 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 2018 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:

- the consolidated balance sheet as at 31 December 2018;
- the following consolidated statements for 2018: the income statement, the statements of comprehensive income, changes in equity and cash flows; and
- the notes comprising a summary of the significant accounting policies and other explanatory information.

The parent company financial statements comprise:

- the parent company balance sheet as at 31 December 2018;
- the parent company income statement for 2018; and
- 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 EU Regulation on specific requirements regarding statutory audits of public-interest entities, the 'Wet toezicht accountantsorganisaties' (Wta, Audit firms supervision act), 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 € 40 million
- 3.2% of adjusted profit before tax

**Group audit**
- Audit at (business) group and local entity level resulting in a coverage of 73% of net sales and 80% of total assets

**Key audit matters**
- Valuation of goodwill
- Divestment of DSM Sinochem Pharmaceuticals

**Opinion**
- Unqualified

*Materiality*

Based on our professional judgement we determined the materiality for the financial statements as a whole at € 40 million (2017: € 30 million). The materiality is determined with reference to adjusted profit before tax (Note 2: € 1,244 million; 2017: € 853 million) of which it represents 3.2% (2017: 3.5%). In addition, the appropriateness of the materiality was assessed by comparing the amount to consolidated net sales of which it represents 0.4% (2017: 0.3%). We have also taken into account misstatements and/or possible misstatements that in our opinion are material for qualitative reasons for the users of the financial statements.

We agreed with the Supervisory Board that misstatements in excess of € 1.5 million (2017: € 1 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 reporting entities (hereafter: entities). 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 entities reporting for group audit purposes. Decisive were the size and/or the risk profile of the entities or operations. On this basis, we selected 22 entities (2017: 25 entities) to perform audits for group reporting purposes on a complete set of financial information as well as 17 entities (2017: 17 entities) to perform specified audit procedures for group reporting purposes on specific items of financial information.

This resulted in a coverage of 73% (2017: 73%) of total net sales and 80% (2017: 80%) of total assets. The remaining 27% of total net sales (2017: 27%) and 20% of total assets (2017: 20%) is represented by a significant number of entities ('Remaining entities'), none of which individually represents more than 2% of total net sales and 1% of total assets.

For these remaining entities, we performed amongst others analytical procedures at (business) group level to validate our assessment that there are no significant risks of material misstatement within these entities.

The audit coverage as stated above can be further specified as follows:

**Total Net sales**

| 52% | 21% | 27% |
| --- | --- | --- |
| Full scope audits | Specified audit procedures | Central procedures remaining entities |

**Total assets**

| 70% | 10% | 20% |
| --- | --- | --- |
| Full scope audits | Specified audit procedures | Central procedures remaining entities |

We have:
- performed audit procedures ourselves at (business) group level in respect of areas such as the annual goodwill impairment tests, other (in)tangible asset impairments, accounting for associates and joint ventures, valuation of deferred tax assets, acquisitions, disposals, restructurings, treasury and shared service centers; and
- used the work of local KPMG auditors when auditing or performing specified audit procedures at business group and local entity level;

The group audit team has set materiality levels for the entities, which ranged from € 5 million to € 12.5 million (2017: € 5 million to € 12.5 million), based on the mix of size and risk profile of the entities within the group.

The group audit team provided detailed instructions to all business group and local entity 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. The group audit team visited entity locations in the United States of America, Switzerland, China, Brazil and the shared service center in India.

Telephone conferences were held with all entity auditors part of the group audit. During these visits and telephone conferences, we discussed the audit approach and the audit findings and observations reported to the group audit team. For a number of these entities we also performed file reviews.

By performing the procedures mentioned above at reporting entities, 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.

*Audit scope in relation to fraud*

In accordance with the Dutch Standards on Auditing we are responsible for obtaining reasonable assurance that the financial statements taken as a whole are free from material misstatement, whether caused by fraud or error. As part of our fraud risk assessment we:
- made use of management's evaluation in relation to fraud risk management (prevention, detections and response);
- assessed Royal DSM's entity level controls which include ethical standards to create a culture of honesty;
- assessed events or conditions that indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud ('fraud risk factors'); and
- involved a KPMG forensic specialist.

Based on our fraud risk assessment, we have not identified any fraud risks in addition to those presumed by the Auditing Standards. Those presumed risks were relevant to our audit and have been discussed with the Managing and Supervisory Board, and are as follows:
- fraud risk in relation to revenue recognition, specifically being the risk of manual override with respect to the cut-off of revenue for the period prior to the financial year-end; and
- fraud risk in relation to management override of controls to meet targets and/or expectations.

Our audit procedures included an evaluation of the design and implementation of internal controls relevant to mitigate these fraud risks and supplementary substantive audit procedures, including detailed testing of high risk journal entries, inspection and testing of documentation such as agreements with the customer and shipping documents, in relation to the correct recognition of revenues for the period prior to the financial year-end and an evaluation of key estimates and judgment by management.

Our audit procedures differ from a specific forensic fraud investigation, which investigation often has a more in-depth character.

*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 we have added as a key audit matter the divestment of Royal DSM's investment in DSM Sinochem Pharmaceuticals as the accounting for this transaction is significant for the financial statements. Last year's key audit matters about the Impairment of joint venture POET – DSM Advanced Biofuels LLC and the Divestment of Patheon N.V. are not included anymore in 2018, given the decreased risk profile of the valuation of DSM's investment in POET – DSM Advanced Biofuels LLC and the one-off nature of the divestment of Patheon N.V.

**Valuation of goodwill**

*Description*

Royal DSM carries a significant amount of goodwill in the balance sheet. Under EU-IFRSs, Royal DSM is required to test the amount of goodwill for impairment at least annually. The impairment tests were significant to our audit due to the complexity of the assessment process and judgments and assumptions involved which are affected by expected future market and economic developments.

*Our response*

We challenged the cash flow projections included in the annual goodwill impairment tests. Our audit procedures included, amongst others, the involvement of a valuation specialist to assist us in evaluating the assumptions, in particular the terminal growth and pre-tax discount rates, and the valuation methodology used by Royal DSM. We furthermore assessed the appropriateness of other data used by comparing them to external and historical data, such as external market growth expectations and by analyzing sensitivities in Royal DSM's valuation model. We specifically focused on the sensitivity in the available headroom for the cash generating units, evaluating whether a reasonably possible change in key assumptions could cause the carrying amount to exceed its recoverable amount and assessed the historical accuracy of management's estimates. We assessed the adequacy of the disclosure (Note 8) to the financial statements.

*Our observation*

We consider management's key assumptions and estimates to be within the acceptable range and we assessed the disclosure (Note 8) to the financial statements as being proportionate.

**Divestment of DSM Sinochem Pharmaceuticals**

*Description*

On 31 October 2018 Royal DSM completed the sale of its investment in DSM Sinochem Pharmaceuticals. This sale resulted in a gain on disposal of € 109 million. Given the amounts involved as disclosed in Note 10 to the financial statements, the accounting for this transaction is significant for the financial statements.

*Our response*

We tested the accuracy and completeness of the gain on the disposal by comparing the consideration received with the terms and conditions according to the Share Purchase Agreement (SPA), the cash receipts and by reconciling the book value of the disposed amount to the underlying accounting records. We verified whether the gain on disposal was calculated in accordance with the relevant clauses of the SPA underlying the transaction. When verifying the gain on disposal we assessed the net present value of the earn-out receivable which is linked to future performance of the divested business. We also evaluated the adequacy of the disclosure (Note 10) of this disposal in the financial statements.

*Our observation*

We consider that the gain on disposal is appropriately reflected in the financial statements and we assessed the disclosure (Note 10) to the financial statements as being proportionate.

## 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 that consists of:

- Report by the Managing Board which includes the chapters Key data, Letter from the CEO, Report by the Managing Board, Review of business, Reporting policies and Corporate governance and risk management;

- Report by the Supervisory Board which includes the chapters Report by the Supervisory Board and Supervisory Board and Managing Board Royal DSM;
- Other information pursuant to Part 9 of Book 2 of the Dutch Civil Code;
- Other information which consists of the chapters What still went wrong in 2018, Information about the DSM share, Sustainability statements, DSM figures: five-year summary and Explanation of some concepts and ratios.

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 substantially 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 Report by the Managing Board in accordance with Part 9 of Book 2 of the Dutch Civil Code and the other information pursuant to 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 ever 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 the Managing Board 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 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 the company'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 to this auditor's report. This description forms part of our auditor's report.

Amstelveen, 7 March 2019

KPMG Accountants N.V.

E.H.W. Weusten RA

## Appendix: Description of our responsibilities for the audit of the financial statements

We have exercised professional judgement and have maintained professional skepticism 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 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 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 audit committee 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.

We have audited the sustainability information in the sections 'Letter from the CEO', 'DSM and the Sustainable Development Goals', 'Report by the Managing Board, consisting of Strategy 2018, Purpose, Strategy 2021, How we create value for our stakeholders, Stakeholders, People, Planet and the 'Sustainability Statements', as included in the Integrated Annual Report for the year 2018 (hereafter: the Sustainability Information) of Koninklijke DSM N.V. (hereafter: Royal DSM), based in Heerlen, the Netherlands. An audit engagement is aimed at obtaining reasonable assurance.

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' on page 106 of the Integrated Annual Report.

## Basis for our opinion

We have 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'.

Our responsibilities under those standards 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) 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 that the assurance 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 Sustainability Reporting Standards of the Global Reporting Initiative (GRI) and Royal DSM's internally developed supplemental reporting criteria as disclosed in the section 'Non-financial reporting policy' on page 106 of the Integrated Annual Report.

The GRI sustainability standards are the most widely adopted global standards for sustainability reporting and are used by DSM for reporting publicly on its economic, environmental and social sustainability indicators.

## Scope of the group audit

Royal DSM is the parent company of a group of reporting entities (hereafter: entities). The Sustainability Information incorporates the consolidated information of this group of entities.

Our group audit procedures consisted of audit procedures at corporate, business group and at local entity level. Our selection of entities in scope of our assurance procedures is primarily based on the local entity's individual contribution to the consolidated Sustainability Information. Furthermore, our selection of entities considered relevant reporting risks and geographical spread.

By performing our procedures at corporate, business group and local entity 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 are those matters that, in our professional judgment, were of most significance in our audit of the Sustainability Information. We have communicated the key assurance matter to the Managing Board and 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 within the scope of our engagement as a whole and in forming our conclusion respectively conclusion thereon, and we do not provide a separate opinion on the key assurance matter.

The sustainability indicator on DSM's solutions labelled 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 do 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 KPI is defined as revenues from BLS as a percentage of total 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 several staff members 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 sufficiently 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 on page 107 are applied and that the assumptions are adequately explained. We also consider the disclosure on BLS as being proportionate.

## Corresponding information

In previous years no reasonable assurance, but limited assurance has been provided on the Sustainability Information.

## 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.

## Responsibilities of the Managing 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' on page 106, 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.

The Managing Board is also responsible for such internal control as it determines is necessary to enable the preparation of the Sustainability Information that is free from material misstatement, 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 the 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 errors and fraud.

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 on 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 engagement 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;
- 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 if 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 include among others:
  - Interviewing management and relevant staff at corporate, business and local entity level responsible for the sustainability strategy, policy and results;
  - Interviewing relevant staff 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 for the group components and locations. For this, the nature, extent and/or risk profile of these components are decisive. Based thereon we selected the components and locations to visit. The visits and remote reviews to 7 production sites in 6 countries are aimed at, on a local 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 the company;
  - 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.
- Reconciling the relevant financial information with the financial statements;
- Evaluating the consistency of the sustainability information with the information in the annual report which is not included in the scope of our audit;
- Evaluating the overall presentation, structure and content of the sustainability information;
- To consider 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, 7 March 2019

KPMG Accountants N.V.

E.H.W. Weusten 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 2018.

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).*

In 2018 board member Mick den Boogert was replaced by Bas Kortmann. Mick passed away in August 2018. With his extensive knowledge of business law, he was a highly respected and valued board member. We thank him for his contribution, over many years, to the Foundation.

On 31 December 2018, 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 at the DSM head office in Heerlen (Netherlands) on Wednesday, 8 May 2019 at 14:00 hours CET.

### Important dates

| | |
|---|---|
| Publication of first-quarter results | Tuesday, 7 May 2019 |
| Ex-dividend quotation | Friday,11 May 2019 |
| Publication of second-quarter results | Thursday, 1 August 2019 |
| Publication of third-quarter results | Tuesday, 5 November 2019 |

# DSM figures: five-year summary

## Balance sheet

| x €million | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| Intangible assets | 3,090 | 3,058 | 3,188 | 3,228 | 2,867 |
| Property, plant and equipment | 3,511 | 3,313 | 3,325 | 3,171 | 3,673 |
| Deferred tax assets | 248 | 281 | 355 | 366 | 427 |
| Share in associates and joint ventures | 205 | 227 | 586 | 644 | 617 |
| Financial derivatives | 14 | 16 | - | 32 | 23 |
| Other financial assets | 263 | 475 | 463 | 419 | 275 |
| **Non-current assets** | **7,331** | **7,370** | **7,917** | **7,860** | **7,882** |
| Inventories | 1,993 | 1,848 | 1,800 | 1,627 | 1,739 |
| Current receivables | 1,738 | 1,690 | 1,653 | 1,556 | 1,769 |
| Financial derivatives | 21 | 41 | 40 | 15 | 24 |
| Current investments | 1,277 | 954 | 944 | 9 | 6 |
| Cash and cash equivalents | 1,281 | 899 | 604 | 665 | 669 |
| | 6,310 | 5,432 | 5,041 | 3,872 | 4,207 |
| Assets held for sale | - | - | - | 11 | 37 |
| **Current assets** | **6,310** | **5,432** | **5,041** | **3,883** | **4,244** |
| **Total assets** | **13,641** | **12,802** | **12,958** | **11,743** | **12,126** |
| **Equity and liabilities** | | | | | |
| Shareholders' equity | 7,782 | 6,962 | 6,072 | 5,541 | 5,723 |
| Non-controlling interests | 33 | 103 | 108 | 90 | 213 |
| **Equity** | **7,815** | **7,065** | **6,180** | **5,631** | **5,936** |
| Deferred tax liabilities | 254 | 259 | 278 | 319 | 365 |
| Employee benefit liabilities | 413 | 356 | 490 | 496 | 479 |
| Provisions | 116 | 151 | 128 | 98 | 105 |
| Borrowings | 2,272 | 2,551 | 2,552 | 2,557 | 1,637 |
| Financial derivatives | 3 | 4 | 14 | 182 | 178 |
| Other non-current liabilities | 197 | 188 | 158 | 228 | 81 |
| **Non-current liabilities** | **3,255** | **3,509** | **3,620** | **3,880** | **2,845** |
| Employee benefit liabilities | 46 | 39 | 40 | 44 | 45 |
| Provisions | 37 | 53 | 54 | 41 | 42 |
| Borrowings | 380 | 77 | 853 | 253 | 1,143 |
| Financial derivatives | 51 | 20 | 239 | 50 | 184 |
| Current liabilities | 2,057 | 2,039 | 1,972 | 1,842 | 1,915 |
| | 2,571 | 2,228 | 3,158 | 2,230 | 3,329 |
| Liabilities held for sale | - | - | - | 2 | 16 |
| **Current liabilities** | **2,571** | **2,228** | **3,158** | **2,232** | **3,345** |
| **Total equity and liabilities** | **13,641** | **12,802** | **12,958** | **11,743** | **12,126** |

## Income statement

| x € million | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Net sales underlying business[1] | 8,852 | 8,632 | 7,920 | 7,722 | 7,051 |
| Net sales | 9,267 | 8,632 | 7,920 | 8,935 | 9,283 |
| | | | | | |
| Adjusted EBITDA underlying business[1] | 1,532 | 1,445 | 1,262 | 1,075 | 1,038 |
| Adjusted EBITDA[2] | 1,822 | 1,445 | 1,262 | 1,170 | 1,166 |
| EBITDA | 1,754 | 1,348 | 1,146 | 1,046 | 1,134 |
| | | | | | |
| Adjusted operating profit (EBIT) underlying business[1] | 1,055 | 957 | 791 | 573 | 587 |
| Adjusted operating profit (EBIT)[2] | 1,345 | 957 | 791 | 650 | 617 |
| Operating profit (EBIT) | 1,245 | 846 | 657 | 304 | 290 |
| Financial income and expense | (101) | (104) | (133) | (174) | (125) |
| Income tax expense | (194) | (115) | (89) | (68) | (7) |
| Share of the profit of associates and joint ventures | 129 | 1,154 | 194 | 30 | (59) |
| | | | | | |
| **Profit for the year** | **1,079** | **1,781** | **629** | **92** | **99** |
| Profit attributable to non-controlling interests | 2 | 12 | 8 | 4 | (46) |
| | | | | | |
| Net profit attributable to equity holders of Koninklijke DSM N.V. | **1,077** | **1,769** | **621** | **88** | **145** |
| Dividend on cumulative preference shares | (8) | (8) | (4) | (10) | (10) |
| | | | | | |
| Net profit available to holders of ordinary shares | **1,069** | **1,761** | **617** | **78** | **135** |

## Key figures and financial ratios

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Capital employed[3] | 8,181 | 7,766 | 7,889 | 7,553 | 8,105 |
| Capital expenditure: | | | | | |
| - Intangible assets and Property, plant and equipment | 653 | 586 | 485 | 570 | 616 |
| - Acquisitions | 51 | 204 | 16 | 106 | - |
| Disposals | 257 | 1,546 | 87 | 307 | 93 |
| Depreciation, amortization and impairments | 509 | 502 | 489 | 742 | 798 |
| Net debt | (113) | (742) | (2,070) | (2,321) | (2,420) |
| Dividend | 412 | 331 | 310 | 297 | 296 |
| | | | | | |
| Workforce at 31 December, headcount | 20,977 | 21,054 | 20,786 | 20,796 | 21,351 |
| Employee benefit costs (x € million) | 1,753 | 1,768 | 1,752 | 1,778 | 1,713 |
| | | | | | |
| Financial ratios[2] | | | | | |
| - ROCE in % underlying business[1] | 13.3 | 12.3 | 10.4 | 7.6 | 8.2 |
| - ROCE in % | 16.8 | 12.3 | 10.4 | 8.2 | 7.8 |
| - Net sales underlying business / average capital employed[1] | 1.11 | 1.11 | 1.04 | 1.03 | 0.99 |
| - Current assets / current liabilities | 2.45 | 2.44 | 1.58 | 1.62 | 1.21 |
| - Equity / total assets | 0.57 | 0.55 | 0.48 | 0.48 | 0.49 |
| - Gearing (net debt / equity plus net debt) | 0.01 | 0.10 | 0.25 | 0.29 | 0.29 |
| - Adjusted EBIT underlying business / net sales in % underlying business[1] | 11.9 | 11.1 | 10.0 | 7.4 | 8.3 |
| - Net profit / average Shareholders' equity available to holders of ordinary shares in % | 24.7 | 28.0 | 11.1 | 1.4 | 2.4 |
| - Adjusted EBITDA underlying business / Financial income and expense[1] | 15.2 | 13.9 | 9.5 | 7.2 | 10.2 |

[1] Continuing operations, excluding temporary vitamin effect 2018, see table on page 65.
[2] In presenting and discussing DSM's financial position, operating results and cashflows, 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 the 'Alternative performance measures' on page 172.
[3] Before reclassification to held for sale.

## Information about ordinary DSM shares

| per ordinary share in € | **2018** | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Adjusted Net profit | 5.84 | 3.92 | 2.90 | 2.14 | 2.34 |
| Net profit | 6.10 | 10.07 | 3.52 | 0.45 | 0.78 |
| Operating cash flow | 7.89 | 5.65 | 5.79 | 3.93 | 4.62 |
| | | | | | |
| Dividend: | 2.30[1] | 1.85 | 1.75 | 1.65 | 1.65 |
| - Interim dividend | 0.77 | 0.58 | 0.55 | 0.55 | 0.55 |
| - Final dividend | 1.53 | 1.27 | 1.20 | 1.10 | 1.10 |
| | | | | | |
| Pay-out including dividend on cumulative preference shares as % of Adjusted net profit | 40 | 48 | 61 | 71 | 69 |
| Dividend yield (dividend as % of average price of an ordinary DSM share) | 2.7 | 2.8 | 3.3 | 3.5 | 3.3 |
| | | | | | |
| Share prices on Euronext Amsterdam (closing price): | | | | | |
| - Highest price | 92.98 | 81.66 | 64.18 | 55.11 | 57.97 |
| - Lowest price | 68.98 | 57.20 | 41.40 | 39.62 | 44.44 |
| - At 31 December | 71.44 | 79.67 | 56.96 | 46.28 | 50.64 |
| | | | | | |
| (x 1,000) | | | | | |
| Number of ordinary shares outstanding: | | | | | |
| - At 31 December | 175,651 | 174,643 | 175,002 | 174,923 | 173,537 |
| - Average | 175,323 | 174,795 | 175,100 | 174,357 | 172,605 |
| | | | | | |
| Daily trading volumes on Euronext Amsterdam: | | | | | |
| - Average | 732 | 676 | 787 | 912 | 801 |
| - Lowest | 130 | 238 | 152 | 130 | 104 |
| - Highest | 2,617 | 2,110 | 2,554 | 4,506 | 7,981 |

[1] Subject to approval by the Annual General Meeting of Shareholders

# Explanation of some concepts and ratios

**PEOPLE**

*Brighter Living Solutions*

See below, Planet — Brighter Living Solutions.

*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."

*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)).

*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 approximately 25% of DSM's total sales. In this first version of Lives Reached, these end markets are in Human Nutrition & Health and Personal Care, with the other businesses currently considered out of scope. These will be added over time.

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.

*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 10 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.

*Brighter Living Solutions*
Brighter Living Solutions (BLS) are products and services that, when considered over the product life cycle, offer an environmental benefit (ECO+) and/or a social benefit (People+) compared to mainstream reference solutions.

ECO+ qualifications are made based on comparative Eco Life Cycle Assessment (LCA). DSM is using the standard approach to evaluate environmental footprint as published by the WBCSD Chemical sector in 2014. Qualifications are also made based on documented expert opinion by business managers or relevant internal experts based on identified mainstream reference solutions and identified environmental differentiators.

The People+ qualifications are made based on DSM People LCA method or expert opinions, similar as for ECO+. The People LCA method helps to identify social impacts of products on the dimensions health, comfort and well-being, working conditions, and community development. This methodology is developed by DSM based on internal standards and external stakeholder dialogues.

More information and definitions can be found on the company website.

*Carbon footprint*
The total set of direct and indirect greenhouse gas emissions expressed as $CO_2$eq.

*Carbon price*
The price that is paid to emit one ton $CO_2$eq into the atmosphere. DSM implements an internal carbon price of € 50/t $CO_2$eq.

*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.

*Greenhouse gas emissions (GHGE)*
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 (GHGE) 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.

*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.

*$NO_x$*

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 and other current liabilities.

*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 developments 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.

*Operating working capital*
The total of inventories and trade receivables, less trade payables.

*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 weighted 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.

# List of abbreviations

| | |
|---|---|
| ADR | American Depositary Receipts |
| AFM | The Dutch Authority for the Financial Markets |
| API | Active Pharmaceutical Ingredients |
| APM | Alternative performance measures |
| BRA | Business Risk Assessment |
| CAGR | Compound Annual Growth Rate |
| CDP | The new name for the Carbon Disclosure Project |
| 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 |
| GMM | Genetically Modified Micro-organisms |
| GRI | Global Reporting Initiative |
| IAS | International Accounting Standards |
| IASB | International Accounting Standards Board |
| IFRIC | International Financial Reporting Interpretation Committee |
| ILO | International Labour Organization |
| IP | Intellectual Property |
| LCA | Life Cycle Assessment |
| LoR | Letter of Representation |
| LTI | Long-Term Incentive |
| LWC | Lost Workday Case |
| NGO | Non-Governmental Organization |
| NPS | Net Promoter Score |
| OCI | Other Comprehensive Income |
| OECD | Organisation for Economic Co-operation and Development |
| PA | Polyamide |
| PDN | Stichting Pensioenfonds DSM Nederland |
| PPA | Purchase Price Allocation |
| PRA | Process Risk Assessment |
| PSI | Process Safety Incident |
| PV | Photovoltaic |
| R&D | Research & Development |
| ROCE | Return on Capital Employed |
| SDG | Sustainable Development Goal |
| SHE | Safety, Health and Environment |
| SSP | Supplier Sustainability Program |
| STI | Short-Term Incentive |
| SUN | Scaling Up Nutrition Movement |
| SVP | Senior Vice President |
| TCFD | Taskforce for Climate-related Financial Disclosures |
| TSR | Total Shareholder Return |
| UN | United Nations |
| VOC | Volatile Organic Compound |
| VP | Vice President |
| WBCSD | World Business Council for Sustainable Development |
| WEF | World Economic Forum |
| WFP | United Nations World Food Programme |

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