



# DSM China Integrated Annual Report 2013

HEALTH • NUTRITION • MATERIALS



**DSM**

BRIGHT SCIENCE. BRIGHTER LIVING.

# Life Sciences and Materials Sciences

## DSM, the Life Sciences and Materials Sciences company

*Our purpose is to create brighter lives for people today and generations to come. We connect our unique competences in Life Sciences and Materials Sciences to create solutions that nourish, protect and improve performance.*

DSM uses its Bright Science to create Brighter Living for people today and for generations to come. Based on a deep understanding of key global trends that are driving societies, markets and customers, DSM creates solutions to some of the world's biggest challenges, thus adding to both its own and its customers' success.

DSM believes that its continued success will be driven by its ability to create shared value for all stakeholders, now and in the future. It creates sustainable shared value by innovating in ways that allow its customers to provide better People, Planet and Profit solutions – solutions to the challenges facing society, the environment and end-users. In this way, DSM's customers derive value from being able to offer end-users improved products; society and the planet derive value from the impact of more sustainable, longer-lasting, safer, healthier and more nutritious alternatives; and, as a result, DSM and its shareholders derive value from stronger growth and profitability. Finally, DSM's employees feel engaged and motivated both through the contribution they make to a better world and the success this creates for the company in which they work.

### **DSM – Bright Science. Brighter Living.™**

Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, pharmaceuticals, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM's 24,500 employees deliver annual net sales of around €10 billion. The company is listed on NYSE Euronext. More information can be found at [www.dsm.com](http://www.dsm.com).

# DSM at a glance

DSM's activities have been grouped into business groups representing coherent product/market combinations. The business group directors report directly to the Managing Board.

For reporting purposes, the activities are grouped into five clusters. In addition, DSM reports on a number of other activities, which have been grouped under Corporate Activities.

## Life Sciences

### Nutrition

#### Continued value growth

The Nutrition cluster comprises the business groups DSM Nutritional Products and DSM Food Specialties. They serve the food and beverage, feed, personal care, dietary supplements and pharmaceutical industries. DSM offers the world's widest range of nutritional ingredients, addressing existing markets based on fermentation and chemical synthesis as well as key niches of active compounds derived from plant extracts. DSM has particularly strong positions in vitamins, nutritional lipids (polyunsaturated fatty acids), enzymes, cultures and carotenoids. New nature-identical or natural ingredients as well as the expansion of the premix footprint in high growth economies are important drivers in the areas of human and animal nutrition and health.

### Pharma

#### Leveraging partnerships for growth

The Pharma cluster includes the business group DSM Pharmaceutical Products (DPP), one of the world's leading custom manufacturing organizations to the pharmaceutical industry, biopharmaceutical and crop protection industries, and DSM's 50 percent interest in the DSM Sinochem Pharmaceuticals (DSP) joint venture, the global market leader in beta-lactam anti-infectives. In 2013, DSM announced the formation of a new entity together with JLL Partners, combining DPP and the US-based company Patheon to create a leading global contract development and manufacturing company in which DSM will retain a 49 percent interest. From 2014 onwards DSM will discontinue the use of proportionate consolidation for joint ventures and account for both DPP and DSP in accordance with the equity method.

## Materials Sciences

### Performance Materials

#### Growing via sustainable, innovative solutions

The Performance Materials cluster comprises three business groups: DSM Engineering Plastics (a global supplier of high-performance engineering thermoplastic solutions), DSM Dyneema (the global supplier of Dyneema<sup>®</sup>, the world's strongest fiber<sup>™</sup>) and DSM Resins & Functional Materials (a global supplier of innovative high-quality resins solutions for paints and coatings, composite materials and optical fiber coatings). End-use markets include automotive, aviation, electrical and electronics, marine, sports and leisure, paint and coatings, and construction. Sustainability is a business driver as well as an innovation driver for this cluster. DSM's materials portfolio is shifting towards a higher value-added mix by introducing innovative, more sustainable solutions, leveraging the megatrend Climate and Energy.

### Polymer Intermediates

#### Strengthening backward integration for DSM Engineering Plastics

The Polymer Intermediates cluster contains the business group DSM Fibre Intermediates (DFI), a producer of caprolactam and acrylonitrile. These products are raw materials for synthetic fibers and plastics. Caprolactam is a key feedstock for DSM Engineering Plastics' polyamide production. Globally, DFI is the largest merchant caprolactam supplier and the third largest merchant acrylonitrile supplier.

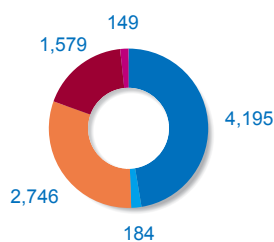
## Innovation Center

The Innovation Center is an enabler and accelerator of innovation. It facilitates DSM's strategic transition towards becoming an intrinsically innovative organization. The cluster also includes the three Emerging Business Areas (EBAs), growth engines that focus on new business areas outside the current scope of the company's business groups. DSM Biomedical produces novel materials-based solutions for the medical device and biopharmaceutical industries with coatings, drug delivery platforms and a wide range of biomedical materials for use in implantable medical devices. DSM Bio-based Products & Services creates solutions for bioconversion of feedstocks for the production of bio-energy including cellulosic biofuels as well as bio-based chemicals and materials. DSM Advanced Surfaces provides smart coatings and surface technologies to the solar industry.

### Sales per cluster in 2013, continuing operations

net sales in € million

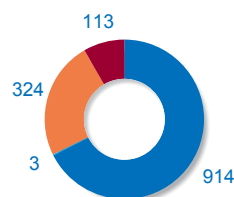
- Nutrition
- Pharma
- Performance Materials
- Polymer Intermediates
- Innovation Center



### EBITDA per cluster in 2013, continuing operations

EBITDA in € million  
excl. Innovation Center (-€ 17 million)

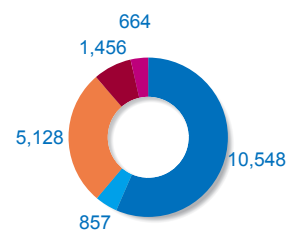
- Nutrition
- Pharma
- Performance Materials
- Polymer Intermediates



### Workforce per cluster in 2013, continuing operations

headcount at year-end 2013

- Nutrition
- Pharma
- Performance Materials
- Polymer Intermediates
- Innovation Center





# Key data for DSM 2013

<b>Net sales, total DSM</b> (x million)	<b>Operating profit plus depreciation and amortization, total DSM<sup>1</sup></b> (x million)	<b>Net profit, total DSM</b> (x million)	<b>Capital expenditure, total DSM</b> (x million)
€9,618	€1,314	€271	€793
<b>Net sales, continuing operations</b> (x million)	<b>Operating profit plus depreciation and amortization, continuing operations<sup>1</sup></b> (x million)	<b>Net profit, continuing operations<sup>1</sup></b> (x million)	<b>Capital expenditure, continuing operations</b> (x million)
€9,051	€1,263	€499	€752
<b>Cash provided by operating activities, total DSM</b> (x million)	<b>Core earnings per ordinary share, continuing operations<sup>2</sup></b>	<b>Dividend per ordinary share<sup>3</sup></b>	<b>ROCE, continuing operations</b> (in %)
€889	€3.19	€1.65	9.7
<b>Workforce</b> (at year-end)	<b>Number of nationalities</b> (at year-end)	<b>Employee engagement - favorable score</b> (in %)	<b>Frequency Index of recordable injuries</b> (per 100 DSM employees and contractor employees)
24,349	83	71	0.38
<b>Greenhouse-gas emissions, total DSM</b> (x million tons)	<b>Energy use, total DSM</b> (in petajoules)	<b>Water use, Total DSM</b> (in million m <sup>3</sup> )	<b>ECO+ solutions as % of running business, total DSM</b>
4.3	43	152	45
<b>ECO+ solutions as % of innovation pipeline, total DSM</b>	<b>Innovation sales as % of total sales</b>	<b>China sales, continuing operations</b> (x USD million)	<b>Sales to High Growth Economies as % of total sales</b>
95	19	1,714	39

<sup>1</sup> Before exceptional items

<sup>2</sup> Before exceptional items and excluding amortization of intangible assets related to purchase accounting

<sup>3</sup> Subject to approval by the Annual General Meeting of Shareholders

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# Letter from the Chairman

Dear readers,

The megatrends that shape our world and markets became even more pronounced in the year, while the uncertainty regarding global economic growth persisted. This offers the context for our company to develop and grow our business with the portfolio we have created over the years. We live in extraordinary times; the race to find sustainable solutions to the world's most pressing economic, social and environmental challenges has only intensified. This offers the context for our company to develop and grow our business with the portfolio we have created over the years.

At DSM our strategy has been to focus on the unmet needs we have identified, and translate them into compelling growth drivers for our business. To this end, we have undertaken a successful transformation of our portfolio in recent years, offering innovative and sustainable solutions, while expanding our global presence. Today, we are uniquely positioned to create value for all stakeholders by contributing to our customers' success in meeting the challenges they increasingly face.

The megatrends that steer our roadmap for growth stem from a globally expanding and aging population, which is increasingly moving to urban areas. The trends we address are broadly divided into three categories: (1) global shifts, which account for the sharp demographic changes and the emergence of a multi-speed global economy; (2) increased attention to climate and energy, which encompasses the world's growing efforts to reduce pollution, achieve a more balanced consumption of resources and energy, and develop new energy forms; and (3) focus on improving health and wellness for all, which refers to the care for people's health, especially through nutrition.

In 2013, we continued to implement our DSM in motion: *driving focused growth* strategy which we launched in 2010 to deliver profitable and sustainable growth by addressing the above-mentioned trends. Although we still have much to achieve, we can say that our strategy has served us well.

In the year, we continued to make good progress against our stated targets in our four business growth drivers: High Growth Economies, Innovation, Sustainability, and Acquisitions & Partnerships. These drivers remain unchanged for the year ahead, and we have set ourselves new sales and profitability targets for 2015 to measure the success of our approach.

Our Nutrition business clearly increased its profit during the year and has shown its resilience as well. Acquisitions, organic growth and harvesting synergies were the main drivers. In the last quarter(s) of the year the results were negatively influenced by the strong euro. In addition, Nutrition was impacted by weakness in the US dietary supplements market, soft demand in

Western food and beverage markets, and price pressures in vitamin E. Despite the exchange rate effects and the current unrelated market headwinds, our Nutrition business remains well positioned to benefit from the structural global megatrends with its unique, broad, integrated and global offering across the value chain. As said, our Pharma business is repositioned in two new ventures and will be deconsolidated as per 2014. Our Performance Materials business performed well over the year in all its businesses. We will continue to upgrade the portfolio in the period ahead to further improve performance. In Polymer Intermediates, we continued to work on options to reduce our exposure to the merchant market for caprolactam, where there is greater volatility.

We are pleased to report that in 2013 DSM delivered significant increases in profitability across all its business clusters, resulting in an EBITDA of € 1,314 million (€ 1,263 million from continuing operations), an 18 percent increase over 2012. We achieved this against a backdrop of challenging macro-economic conditions and adverse currency movements, especially in the fourth quarter of 2013. Growth remained stubbornly low in Europe, while the modest recovery in the US continued and economic activity in Asia remained at a relatively good level.

Our expansion into High Growth Economies (HGEs) has made us a truly global company, with almost 40 percent of our sales originating from high growth economies, a proportion that will continue to rise in the years ahead. At the same time, we have increased our physical presence in these areas, with many of our global business group headquarters and R&D facilities located there.

While HGEs experienced a slowdown in the second half of 2013 compared to previous periods, they will continue to be the primary engines of global growth in the years ahead and an investment focus area for DSM via its products and businesses.

In Innovation we are underway to deliver on our 20 percent innovation sales target for 2015. Innovation sales, which are sales of products and solutions brought to the market within the last five years, will strongly contribute to our growth in years ahead. They also enjoy significantly higher than average EBITDA margins, contributing not only to our sales growth but also to the quality of our profitability. We have a balanced approach between incremental and process innovations on the one hand, and more radical innovations on the other. We are also focusing more on local applications developed in our regional innovation centers around the world.

We have also continued to invest heavily in our Emerging Business Areas (EBAs), three important growth areas that tap

into attractive and fast-growing end markets. In DSM Biomedical, we are making good progress with our product portfolio and have completed the integration of Kensey Nash. In DSM Bio-based Products & Services, we are demonstrating technologies through strategic investments and partnerships, such as the POET-DSM cellulosic bio-ethanol plant in Emmetsburg (Iowa, USA), which has begun to explore its licensing activities as we plan to become the leader in bioconversion technologies, capitalizing on our knowledge and capabilities in industrial biotechnology, for example in enzymes and yeast. In DSM Advanced Surfaces we have increased our production capacity of anti-reflective solutions for the fast growing solar panels market, resulting in good growth rates.

Sustainability continues to be an important business driver in addition to being our core value and responsibility. Our ECO+ solutions, which provide customers with clear ecological benefits over more conventional products, are growing faster and more profitably than non-ECO+ sales. They now account for 45 percent of all DSM sales and over 90 percent of our innovation pipeline. In the year, we also began developing a comparable People+ strategy for those products that improve the lives of people. With the People+ program, we make the people element of People, Planet and Profit more tangible, transparent and comparable, as we have done for planet with ECO+.

Over the recent years we have made significant progress in the development of our portfolio through Acquisitions & Partnerships. Our acquisition of Fortitech at the end of 2012 has strengthened our Human Nutrition & Health business, and once again expanded our value chain presence. This is in addition to earlier value creating acquisitions including Martek, Ocean Nutrition Canada, the enzymes business of Verenium and the Enzymes and Cultures activities of Cargill. In April, we concluded our acquisition of Tortuga, the Brazilian market leader in organic chelates and other feed ingredients, which has boosted DSM's position in one of the world's leading ruminant markets. These steps have been decisive in establishing DSM as a global leader in the field of human and animal nutrition.

In November 2013, we announced our much anticipated strategic partnership for DSM Pharmaceutical Products with Patheon via a joint ownership with the private equity firm JLL Partners to enable this Pharma business to accelerate growth and create a global top Contract Development and Manufacturing Organization (CDMO). This combination is consistent with our strategy to maximize value for this business as a standalone company and represents another major step in the strategic transformation of our Pharma activities. After completion of the partnership we will have put both our Pharma businesses in joint ventures, following the joint venture we established with Sinochem in the area of antibiotics in 2011.

Having concluded the transformation of our portfolio, our focus in the coming years will be on realizing its full potential through operational performance and harvesting important synergy benefits. This work is already well underway and will continue in 2014. Consequently, major acquisitions are not expected for the coming year.

The almost €3 billion we have spent on acquisitions since 2010 has allowed us to create and strengthen our portfolio to a large degree in North America but also in the high growth economies, balancing our global presence and increasing our resilience. Today we are stronger and more stable, with more sustainable growth and profitability. Overall the performance of the acquired companies was clearly satisfactory.

In addition to the delivery of synergies from acquisitions, our success has also been due to our ongoing Profit Improvement Program (PIP). This initiative has continued to optimize functional and business cost infrastructures across our company.



An equally important part of our organizational transformation has been the attention to our culture, values, and mission that drive our strategy. These efforts are embodied in the ONE DSM Culture Agenda to optimize our company by developing the culture we require to achieve our strategic ambitions, mirror the world that we operate in, and become a high performance organization. In the year, we continued to roll out the ONE DSM Culture Agenda throughout the organization, at all levels and in all regions. While much more remains to be done, we are encouraged by the progress we have made to date.



In the year, we conducted our sixth worldwide Employee Engagement Survey, achieving a very high response rate of over 85 percent. This survey measures DSM's Employee Engagement Index, the percentage of employees scoring favorably on a combination of four attributes: commitment, pride, advocacy and satisfaction. The index level reached in 2013 was 71 percent (2012: 72 percent). This is higher than the global average benchmark. We can be proud of such a result. We will take the feedback and use this as input for making further improvements in order to become a truly high-performing company.

We also achieved important improvements in the area of Safety and Health. The Frequency Index of Recordable injuries for 2013 was 0.38 (a decrease of 14 percent), which for the second consecutive year is the lowest ever. This means that fewer people were injured in their work for DSM. Our ultimate aim is that DSM be an injury and incident-free working environment.

We have also continued to make steady progress towards our Inclusion & Diversity goals by addressing the geographical distribution of management and other key functions, looking to achieve a representative balance of DSM's leadership group in gender and nationality. The number of women in executive positions increased from 10 percent to 11 percent in 2013, and we saw as well a further growth in the number of non-European executives.

We are very proud that in 2013 we were once again named among the leaders in the Dow Jones Sustainability World Index. We are also proud that during 2013 we won several prestigious awards and received a great deal of recognition for our achievements regarding our integrated Triple P approach. We continue to further develop our integrated reporting based on the guidelines of the Global Reporting Initiative. Once again this integrated annual report, our fourth, merits the GRI A+ rating, representing a high level of transparency. We stay committed to

aligning our strategy and operations with the principles of the United Nations Global Compact.

I would like to thank all those who have helped to make 2013 another successful year for DSM. I would like to take this opportunity to show my sincere appreciation and gratitude to Nico Gerardu, our valued Board member for 7 years who retired on 1 September 2013, and Claudio Sonder, who retired from our Supervisory Board in May 2013.

As we look ahead, we are confident to further build on the strategic progress we have made so far contributing amongst others to a further improvement of our profitability. Our Nutrition business will continue to grow and we will take steps to further broaden and deepen our position, becoming ever closer to customers and to end users. In Performance Materials, our aim is to accelerate in markets where we have strong positions and restructure those parts where we are weaker. In both cases, our emphasis will be on operational improvements, organic growth, innovations, sustainability and high growth economies.

Our mission at DSM is to create brighter lives for people today and for generations to come by connecting our unique competences in Life Sciences and Materials Sciences. This is a collective endeavor that would not be possible without the enormous talent and dedication of our employees around the world and the continued support and trust of our customers, our shareholders and other stakeholders for which we are grateful. I look forward to reporting further progress as we continue to create value for all our stakeholders.



Feike Sijbesma  
CEO/Chairman of the Managing Board  
feike.sijbesma@dsm.com

# Letter from DSM China President



Dr. Jiang Weiming  
DSM China President, Corporate Senior Executive Vice President

## Dear readers,

The global economic outlook remains uncertain, and the Chinese economy also showed signs of slowdown in 2013. China has set the goal to achieve sustainable and healthy economic growth by transforming the mode of development and readjusting its economic structure. This has paved the way for DSM in China to develop and grow our business with unique competencies to address local needs.

In 2013, DSM in China made good progress, especially in new business development.

Our nutrition business continued to develop in a positive trend, with the services to animal nutrition market taking big steps after acquisition of Bayer's China feed mill and farm premix business in Chengdu. The world-class Animal Nutrition Center in Bazhou that broke ground in 2012 and inaugurated in May 2014, is expected provide important scientific data to animal nutrition industry development in China. Our human nutrition business was fueled by Fortitech facility and organization set-up in China.

DSM's acquisition of stake in Yantai Andre Pectin Co. Ltd. in the second half of 2013 has further expanded our food additives business in China.

We have taken major steps in developing Emerging Business Areas (EBAs) in China. For the solar industry, we have made solid progress in manufactory set-up in China. Our activities in biomedical is also growing and we have sponsored the major bio-refinery conference in Beijing as one of the partners of the World Economic Forum.

Our Materials Sciences business performed well despite the unfavorable conditions. The successful launch of the

second line in DSM Nanjing Chemical Company Ltd. (DNCC) is a remarkable achievement with considerable less energy consumption and emission discharges.

Our innovation efforts focus on developing local solutions to meet the local business needs. Shandong ICD High Performance Fibre Co. Ltd. (ICD) achieved remarkable progress in 2013. Trevo™ high modulus fiber, the leading brand of high performance fiber in China developed by ICD, was recently honored the global science and technology innovations award at the CCTV-2 "Global Top High Tech" award ceremony.

Safety is always our top priority. In China, the Frequency Index of Total Recordable Injuries further improved to 0.15 (including contractors) in 2013, a 40% reduction compared to 2010.

Following the successful kick-off of the ONE DSM Culture Agenda in 2012, we have held various activities in China last year related to four themes to enhance "ONE DSM" towards being a truly global company. The four themes are essential for DSM to achieve a high performance culture and therefore emphasis will be on accelerating the right behaviors to keep External Orientation, Accountability for Performance, Collaboration with Speed and Inclusion & Diversity 'alive' throughout the organization.

DSM in China has made great efforts in providing innovative and sustainable solutions to help its customers address their current and future needs. China remains an important part of the High Growth Economies and we will continue to invest in China while enhance our efforts in innovations and sustainable development.

Both our employees and all of our external stakeholders are essential to the long-term success of DSM in China. With this report, the seventh of its kind in China, we have reported on a regular basis of our performance and progress on the dimensions of People, Planet and Profit with our stakeholders in a transparent manner. On behalf of DSM China Leadership Team, I'd like to extend our sincere appreciation and gratitude to all of our stakeholders and we are looking forward to working with you even closer to create shared value and contribute to a more sustainable world.

Dr. Jiang Weiming  
DSM China President

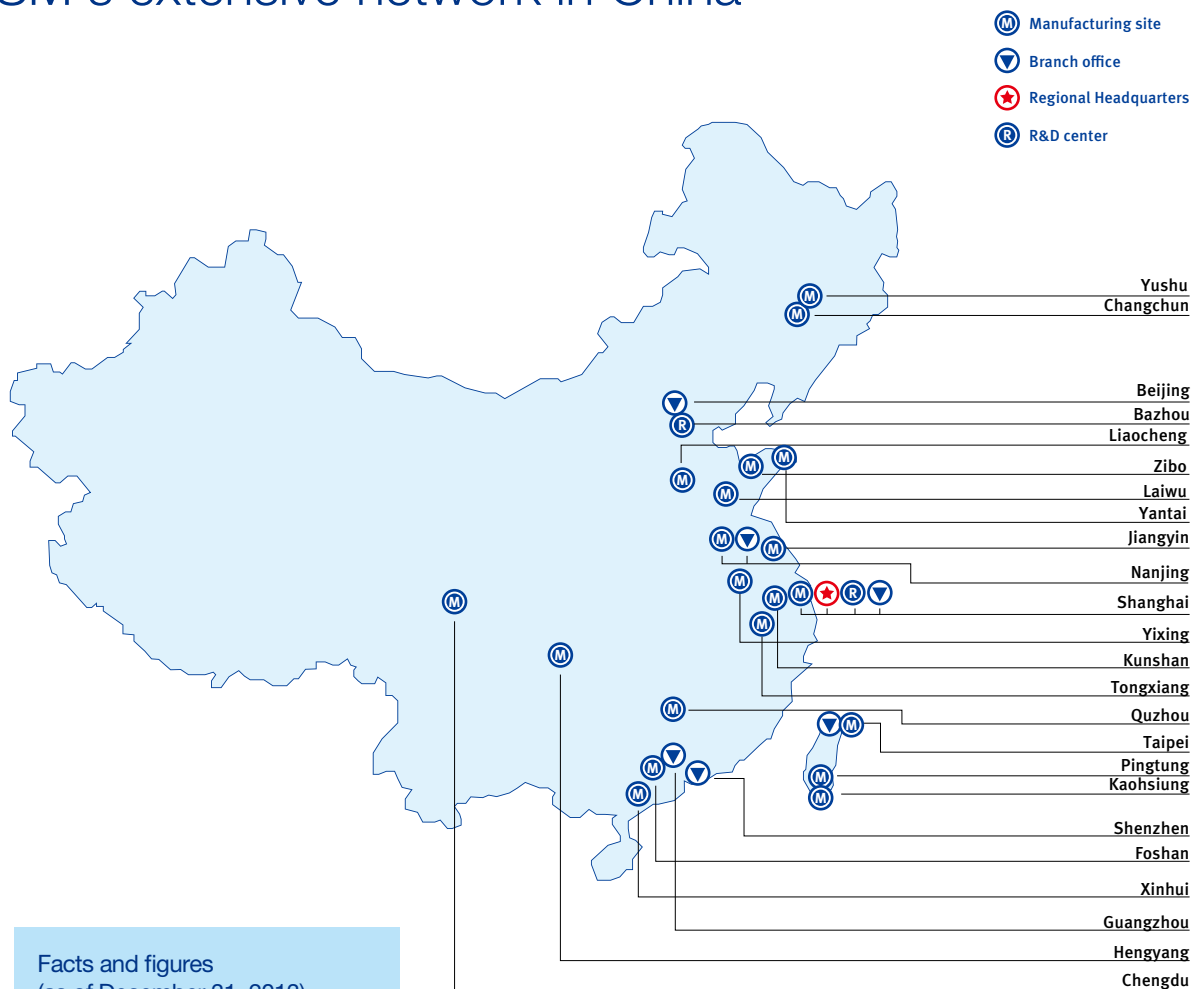
# DSM in China overview

## DSM activities in China

DSM is active across almost its entire portfolio of Life Sciences and Materials Sciences in China, serving end markets including food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials.

DSM began trading with China in 1963 and established its first China sales office and first manufacturing facility in early 1990s. Today, DSM has invested in China for over a decade. The company currently has 42 affiliates in China including 25 manufacturing sites and employs about 3,400 people. DSM China regional headquarters and China Science and Technology Center are located in Shanghai. DSM's business is growing healthily and steadily in China with revenue at USD1.7 billion in 2013.

## DSM's extensive network in China



### Facts and figures (as of December 31, 2013)

- 42 affiliates
- 25 manufacturing sites
- 8 branch offices

Sales 2013      Employees  
**US\$1.7 billion    3,400**

# History - DSM grows with China

## Starting business in China

1963

With the first Urea License, DSM started trading with China.

1995

The first production facility was established in Jiangyin to produce polypropylene chip compounds.

1993

The first DSM Representative Office was established in Beijing. ▼



## Deepening engagement

2005

As the biggest emerging economy, China becomes the focus of DSM corporate strategy *Vision 2010*. With another more than 10 manufacturing sites in China, DSM opens its China R&D Center in Shanghai, and collaborates with Fudan University on their Joint Laboratory. ▲



2007

Former Chinese Premier Wen Jiabao recognized DSM Citric Acid (Wuxi) Limited in China as a 'Good Corporate Citizen'. ▼



2008

The Chongqing office was open to expand DSM's presence in western China. ▶



2008

In the Beijing 2008 Olympics, DSM increased its efforts in the fields of sports and innovation even further, contributing to sporting success. The first DSM China sustainability report was published. ◀





# Growth and Transformation



## 2009

DSM China Campus was launched as the Regional Headquarters and R&D Center in China. It is one of the first LEED (Leadership in Energy and Environmental Design) Gold-certified buildings in China, and also a symbol of DSM's sustainable development in China. ◀



## 2010

The first DSM Hope Primary School, located in Qiaoxi Township, Cangxi County, Guangyuan city of Sichuan province, was officially opened on June 1, the Children's Day. ▶



## 2011

China Science and Technology Center was launched as the company's main innovation base in China. ◀



## 2012

DSM broke ground for the animal nutrition center in Bazhou, Hebei Province, enhancing its animal nutrition competence in China. DSM Sinochem Pharmaceuticals (DSP) opened new 6-APA intermediate plant in Jilin Province. ▶



## 2013

2013 DSM's investment in Andre Pectin creates a China-based hydrocolloids growth platform. The acquisition of Bayer's premix activities in China further expanded its global premix network. DSM officially opened the DSM Hope Elementary School in Lintao County, Gansu Province on May 31, as part of a series of corporate social responsibility activities. ◀



# Innovation in China

## From building the machine to doubling the output

At DSM, innovation aims to turn 'Bright Science' into 'Brighter Living'. It goes beyond having great ideas, state-of-the-art technology and high-tech laboratories. It is about discovering and integrating the best, the most sustainable, and commercially viable solutions, in order to meet market needs and create profitable growth and future value.

DSM creates innovative solutions that nourish, protect and improve performance, by combining its unique competences in Life Sciences and Materials Sciences. In doing so, it delivers on its mission of creating brighter lives for people today and for generations to come.

By 2015, DSM wants innovative products and solutions to account for 20 percent of its total sales. The company is well on track to deliver on this ambition. Innovation sales are defined as sales of products and applications that have been introduced over the last five years. In 2013, these products and services accounted for 19 percent of total sales and strongly contributed to DSM's sales and EBITDA growth with gross margins over 5 percent higher than the average of the running business.

DSM China continued to build up R&D capacity in 2013. Innovation is thus increasingly happening in China.

DSM China Performance Materials Research Center (PMRC) has reinforced its research competences and exerted direct impact on innovation activities during year 2013. Through the installation of Phase 2 equipment, PMRC has enhanced its capabilities in material processing of injection molding and extrusion, and in material property characterization of new products.

### Local for local solution

DSM China Research teams focus on local business needs and work closely with the marketing and sales teams to provide support through new local idea generation and technology development. For example, the DSM Biotech Center, together with DSM Food Specialties (DFS) Enzyme Solutions, and DSM Hydrocolloids, has presented several innovative DSM products to ABlNBev, one of the world's largest brewery companies: Instant Beer, Shake Beer and Candy Beer.

PMRC young scientists were intensively involved in business-driven R&D projects of DSM Engineering Plastics. The collaboration contributed to new product development, such as new halogen-free flame-retardant material for Electrical & Electronics applications and a highly moisture-permeable polymer for breathable clothing.

Meanwhile, since the opening of its China application lab in the Materials Sciences R&D Building in January 2013, DSM Advanced Surfaces (DAS) has built a strong position in serving the local solar energy industry locally. DAS is now capable of prompt application development together with local customers, as well as instant technical support for them.

### Collaboration

DSM China is also active in broader public-private partnerships that increase its scientific scope. The Hé program is an example of the scientific collaboration through a public-private partnership. The DSM Biotech Center joined Hé program in 2013. It is an international cooperation program between Chinese Ministry of Science and Technology (MoST) and The Netherlands Organization for Scientific Research (NWO), a Dutch Science Organization. In this project, academic (Zhejiang University and Delft University of Technology) and industrial (DSM, Zhejiang Hisun Pharmaceutical Co. Ltd.) researchers from both countries are collaborating tightly to improve the Expanded Bed Adsorption (EBA) technology which enables processing of viscous and particulate liquids. They cooperate all the ways from the design of new systems and better understanding of EBA performance to verifications in various applications.

### DSM Bright Science Awards

As part of its commitment to promoting pioneering research that leads to products or solutions that help enhance people's quality of life, DSM has put in place the Bright Science Awards program. The program recognizes the achievements of DSM scientists as well as those working outside the company that have demonstrated excellence in innovative research. The program is an integral part of the company's open innovation approach.

The DSM Science & Technology Awards recognize outstanding and innovative PhD research. In 2013, DSM granted Science & Technology Awards in three regions: Europe, the Americas and Asia.

In May, the Science and Technology Award Asia was handed to Li Songtao from the Harbin Medical University (China). He received the award for his PhD research entitled 'The effect

of calcium supplementation on the endogenous cholesterol metabolism in estrogen deficiency’.



Dr. Manfred Eggersdorfer (right), DSM Senior Vice President Nutrition Science and Advocacy presented the Science and Technology Award Asia to Li Songtao.

**Patents**

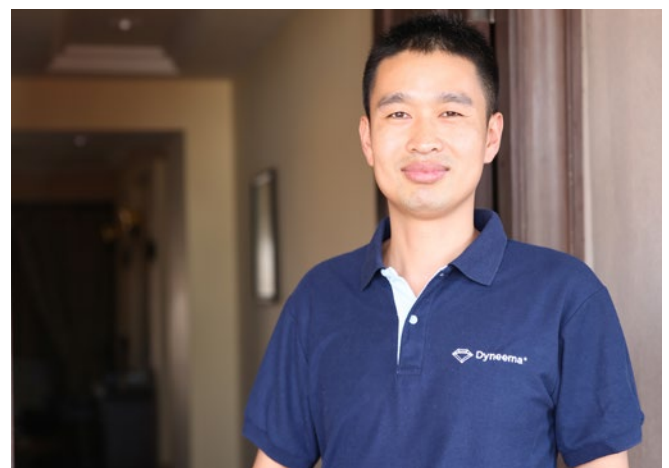
DSM China has filed 11 patent applications in 2013. Of these 11 patent applications, 4 were invented in China by DSM China employees.

In order to comply with Chinese legislation, which is designed to motivate employees to invent as part of their working duties, DSM China issued a new reward and remuneration policy in 2012 for inventions made while working. The new policy and the resulting internal processes were communicated in town hall meetings and during intellectual property training sessions. In 2013, the IP department identified the first invention to qualify for such a reward. In the first quarter of 2014, the department officially presented the first invention awards to two inventors, Zheng Degang and Liu Yongle from DSM Dyneema. The invention is a Ballistic Helmet containing Dyneema® fiber, which could enhance protection while reducing the weight.

Zheng Degang, business development manager of Dyneema, is one of the inventors of a Ballistic Helmet containing Dyneema® tape.

“DSM provides a very favorable environment for innovation, and it’s very inspiring and motivating to work with my colleagues here. It’s high sense of achievement to see the new patent help the business grow. Our success is inseparable from the innovation gene of DSM.

We need to pay more attention to market trends and demands. Market-oriented innovation will create competitive advantage for our products, so that we can serve our customers more effectively.”



Zheng Degang (above) and Liu Yongle from DSM Dyneema won the first invention award.

# Sustainability

## From responsibility to a strong business driver

At the heart of DSM's mission is the core value of sustainability and a commitment to helping to create a more sustainable world. As part of its 2010-2015 strategy DSM in motion: driving focused growth, the company has taken sustainability to the next level. In addition to fulfilling its own responsibilities toward society, DSM has successfully developed sustainability as a strategic growth driver. DSM believes that achieving sustainability means pursuing activities that create value in the areas of People, Planet and Profit. They must meet the needs of the present generation, without compromising the ability of future generations to meet their own needs.

By 2050 the world's population will reach an estimated 9 billion people, which will place an unprecedented pressure on societies to develop innovative solutions to meet their needs, while protecting the planet's environment and its natural resources. Over this hangs the cloud of climate change, which is already having huge consequences. Scientific consensus is that the world faces the risk of even more severe floods and droughts. In order to avoid economic, human and ecological damage the world needs to keep global warming under two degrees Celsius compared to the pre-industrial level. The global society also needs to address food and water security, for it is unacceptable that 2 billion people are malnourished.

The growing impact of business activities must lead to an increased responsibility to contribute to the real, higher goal of the economy – to serve society. The primary goal for business should be to create societal, ecological and economic value. For DSM, sustainability is a key differentiator and a value driver in its markets. The company is uniquely positioned to capitalize on the many opportunities that this presents across the value chain. As an integral part of the company's operations, strategic actions and decisions, sustainability guides the activities of its global business groups. These are charged with continuously developing innovative science-based products and solutions that contribute to a brighter future for people, while helping to increase the company's profitability.

### ECO+

ECO+ is DSM's program for the development of sustainable, innovative products and solutions with ecological benefits. Products qualify as ECO+ when their environmental impact is better compared with competing mainstream products

fulfilling the same function. When considered over their entire life cycle, ECO+ solutions offer superior performance and a lower eco-footprint. The ecological benefits can be created at any stage of the product life cycle, from the raw materials through to manufacturing and potential re-use and end-of-life disposal. DSM uses comparative Life Cycle Assessments to determine whether a solution should be considered ECO+. It is DSM's ambition that at least 80 percent of its innovation pipeline be comprised of ECO+ solutions by 2015, and that they generate approximately 50 percent of total net sales. At the end of 2013, the innovation pipeline contained 95 percent ECO+ solutions (97 percent after deconsolidation of DSM Pharmaceutical Products (DPP)). ECO+ solutions as a percentage of running business increased to 45 percent in 2013 (46 percent after deconsolidation of DPP). DSM is on its way towards the 50 percent aspiration for 2015. In 2013 about 90 percent of ECO+ innovation launches were supported by comparative LCAs.

Sustainability aspirations 2011-2015	Realization 2013
<b>Dow Jones Sustainability Index</b>	
Top ranking (SAM Gold Class)	SAM Silver Class <sup>1</sup>
<b>ECO+ (innovation)</b>	
At least 80% of pipeline is ECO+ <sup>2</sup>	95%
<b>ECO+ (running business)</b>	
From approximately 34% towards 50%	45%
<b>Energy efficiency</b>	
20% improvement in 2020, compared to 2008	13% improvement
<b>Greenhouse-gas emissions</b>	
25% reduction (absolute) by 2020, compared to 2008	1% increase <sup>4</sup>
<b>Employee Engagement Survey</b>	
Towards High Performance Norm <sup>3</sup>	71% favorable
<b>Diversity</b> <sup>5</sup>	
Women in executive positions	11%
BRIC+ nationals in executive positions	10%
<b>People+</b> <sup>5</sup>	
DSM People LCA	Draft framework in place

<sup>1</sup> DSM returned to Gold Class for 2014

<sup>2</sup> See page 48 for a definition of ECO+

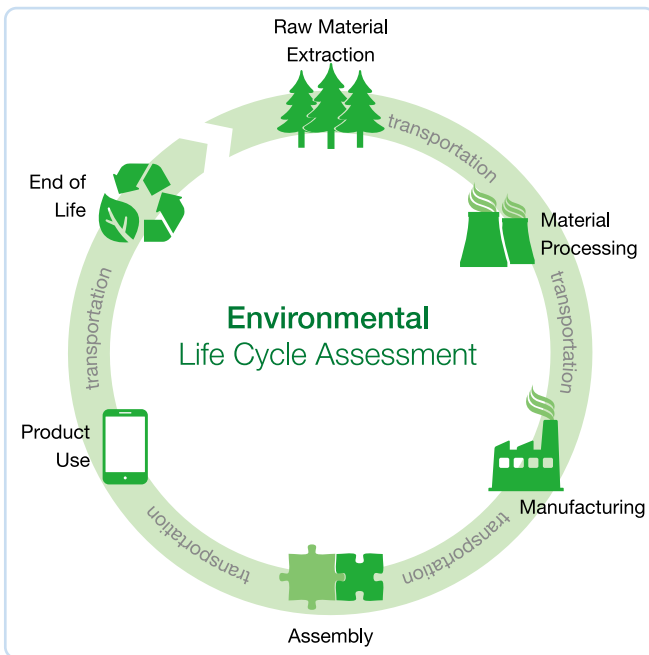
<sup>3</sup> The High Performance Norm (80% favorable) is the composite of the top 25% employee responses of the selected external benchmark organizations

<sup>4</sup> On a like-for-like basis the total greenhouse-gas emissions of DSM decreased by 19% when comparing 2013 with 2008

<sup>5</sup> See People+ and Inclusion & Diversity in the chapter People in 2013 on page 23

ECO+ solutions can be found across all of DSM's business groups with many more under development. For example, in Animal Nutrition, a product under development reduces methane emissions from livestock, one of the world's largest contributors to greenhouse-gas emissions responsible for climate change.

DSM is also investing in solutions for renewable energy. In 2010 the DSM Innovation Center developed KhepriCoat™ antireflective glass coating. It is applied on the cover glass of solar modules and strongly reduces the reflection of sunlight. The result is an increase in the energy output of these modules of up to 4 percent. In 2013 KhepriCoat™ was subjected to a comparative life cycle assessment and was added to the portfolio of ECO+ products. The fast growing market for solar energy has increased the need for additional coating supply. In April DSM opened a new manufacturing plant for KhepriCoat™ at the Chemelot site in Sittard-Geleen (Netherlands).



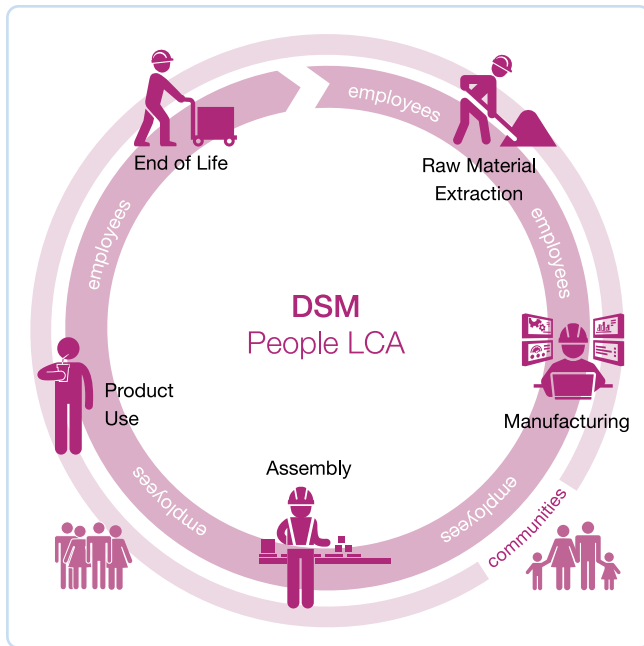
Data from the business groups DSM Engineering Plastics and DSM Resins & Functional Materials show that ECO+ sales have grown by around 10 percent each year since 2010, while non-ECO+ sales have slightly declined. Moreover, ECO+ sales have higher margins compared to non-ECO+ sales in both Materials Sciences and Life Sciences businesses. A comprehensive description of the ECO+ program can be found in the 'Planet in 2013' chapter on page 34 of this report.

**People+**

People+ is DSM's sustainability program to develop solutions that measurably improve the lives of consumers, employees and communities across the value chains. With People+, in combination with ECO+, DSM makes its mission 'Bright Science, Brighter Living' more tangible. People+ offers new perspectives beneficial for new product development, value propositions and customer engagement. In the absence of a ready to use methodology to assess the impact of products on people's lives, DSM started to develop a new methodology in consultation with stakeholders in 2011. The methodology that has been developed to define and quantify the impact that DSM solutions have on people, the DSM People Life Cycle Assessment (LCA) tool, was further road tested and improved in 2013 in close connection with different stakeholders. DSM actively strives to create a harmonized and broadly accepted methodology, with the Products Social Metrics Roundtable (PSMR) with participants from a variety of industries and the World Business Council for Sustainable Development (WBCSD). PSMR consists of close industry partners of DSM.

The DSM People LCA tool enables the business groups to identify new levers for innovation, develop value propositions, and engage with partners in the value chain, by concentrating on the impact that DSM products have on the lives of people involved in making and using the product. This tool is now an incentive for innovation and research and development across the company.

For example, DSM's waterborne resins for paints reduce the health risks for professionals and do-it-yourself painters, in comparison with solvent-based paints on the market. By a continued focus on replacing less sustainable technologies and enlarging the applications for which waterborne resins can be applied, DSM continues to push the boundaries in this area in order to improve end-users' health and well-being without compromising on functionality and performance. A comprehensive description of the People+ program can be found in the 'People in 2013' chapter on page 23 of this report.



### Sustainability in manufacturing

In DSM's manufacturing organization, sustainability is embedded in Functional Excellence programs and expert networks for maintaining and improving specific competences. Functional Excellence programs help make DSM's pooled manufacturing expertise available wherever and whenever it is needed throughout the global organization. Competence networks have been set up to develop shared solutions to DSM-wide issues. The programs and networks help DSM achieve its objectives in the areas of People, Planet and Profit.

### Sustainability in supply chains

Together with its suppliers, DSM works to create value in the areas of People, Planet and Profit simultaneously. In the People area, this means actively pursuing better working conditions and a safe and healthy working environment for DSM's own and supplier and customer employees, as well as promoting local community development and education across the world as part of the People+ program. In the Planet area, it means creating products which, compared to alternative products in the market, perform at least as well but have a lower eco-footprint as part of the ECO+ program. In the Profit area it means conducting business in an ethical and fair way and providing products that are not just carbon, energy and cost efficient but also of a high quality and added value. See also: sustainable value chains on page 13.

### Sustainability governance in China

DSM in China established a regional China sustainability committee in 2012, as the first regional organization across business groups and units for DSM in China. This committee helps to contribute to more awareness of sustainability as a business growth driver by organizing sustainability events and establishing quarterly reporting. In 2013 China sustainability committee shared better sustainable business practices among different business groups.

In 2008, DSM in China published its first regional China Sustainability Report for the year 2007, as the supplementary report of DSM's Global Sustainability Report with focus on China local sustainability development progress. From that year onwards DSM continued to publish its annual local sustainability report to report its regional progress in People, Planet and Profit to all the stakeholders of the company in China, including customers, suppliers, employees, media, government, etc. In order to meet the global trend of integrating annual financial report and sustainability report into one integrated report, DSM in China published its first 2010 DSM China Integrated Report in August of 2011.

2013 is the seventh year to report company performance in the economic, social and environmental areas for DSM China.



# Stakeholder engagement

DSM seeks to address some of the world's most pressing social, environmental and economic challenges by offering highly innovative and sustainable solutions. By reaching out to all its stakeholders – customers, investors, employees, partners and public and private organizations – DSM engages in an ongoing dialogue to exchange thoughts and views. Stakeholder consultations help to deepen the company's insights into the drivers of its business and the needs of society across different regions in the world. By working together, DSM and its stakeholders can create shared value and contribute to a more sustainable world.

In its more than 100 years of existence DSM has always been able to transform itself in response to societal changes, and its focus has always been on innovation and the long-term perspective, in response to stakeholder needs. Without innovation there can be no fundamental shift towards sustainability. That is why for DSM innovation is an essential starting point for a sustainable business model.

## Stakeholders

DSM is committed to creating value for all stakeholders by fully leveraging the unique opportunities in Life Sciences and Materials Sciences for people today and generations to come. DSM believes that in this ever more complicated world, companies, governments, academia, NGOs and international institutions have to work together to solve the big global issues of today. These issues include the question of how to deal with the big demographic changes in the world, including the rise of new economies and an aging population, but also how to address climate change and the development of alternative energy, and how to secure the health and well-being of all by resolving food and nutrition security and water issues.

## Customers

DSM embraces true customer centricity in its focus on excellence in marketing and sales. The company is committed to becoming a part of the top quartile of customer-centric companies and therefore has developed a detailed roadmap to continuously improve its marketing and sales capabilities. To support the movement towards greater customer centricity, DSM is using the Net Promoter Score (NPS), a customer interaction cycle that has become the lead performance indicator for loyalty and advocacy tracking. A better understanding of what drives customer behavior helps DSM to achieve its goals by securing longer lasting, more profitable relationships and enabling growth. The essence of the NPS methodology is creating a closed loop to continuously improve the customer experience. DSM has developed a tailored NPS program that is used by all its business groups.

In 2014, DSM will focus on enhancing the use of NPS as the lead performance indicator of customer centricity in the organization. An e-learning tool has been developed to train all relevant employees on the basics of NPS. Additional

initiatives have also been undertaken to build customer management skills throughout the organization. A new customer management program focused on strengthening strategic relationships was built using internal and external best practices. Furthermore, the capabilities of over 1000 marketing and sales professionals were assessed, resulting in a significant number of tailored development plans.

## Employees

DSM's HR strategy is called Passion for People and stands for the vision that the company wants its employees to reach their full potential everywhere in the world. This strategy is also important in supporting DSM's internationalization goal, creating a company that values diversity in all its aspects. The main elements of its human resources approach are recruitment, talent management, leadership development and performance management supported by the implementation of DSM's ONE DSM Culture Agenda and the career management process. The company's performance is linked directly to the health and wellbeing of its employees. That is why DSM has a single, comprehensive health and safety policy that is consistent around the world. The policy includes Safety, Health and Environment (SHE) training programs and vitality programs that help employees assess their health risks and set personal goals.

## Governments

DSM believes that dialogue between business and government authorities is a constructive part of the legislative decision making process. An important goal of that dialogue is to create a reliable regulatory framework and favorable conditions for business activities, and thus promoting business success. DSM encourages legislators to promote competitiveness and innovation as DSM and its customers need to be competitive and innovative to stay successful.

DSM is committed to acting with responsibility and transparency when it comes to sharing its expertise with policymakers and government authorities in all markets. DSM engages with policymakers worldwide on various topics, including nutrition, energy and industrial biotechnology.

## Suppliers

DSM increasingly takes into account the impact of the value chains in which it is active. This impact reflects the wider impact of DSM's activities both upstream and downstream in the value chains. DSM is looking for suppliers who can support the company in the areas of ECO+ and People+.

## Supplier Sustainability Program

DSM's global Supplier Sustainability Program (SSP) has changed in character over the last six years. Originally a compliance driven process focusing on the integration of the Supplier Code of Conduct, self-assessments and audits, it has developed towards integration of the Triple P approach

into standard sourcing practices like strategic sourcing and supplier selection and contracting processes.

People+ and Water are new topics that were added in 2013. The SSP proactively focuses on dialogue with DSM's suppliers. The aim is to create shared value with suppliers and focus on true supplier development, in the areas of leveraging capabilities and creating efficiencies and new solutions. In 2013, progress was made on these three areas of the program. It is important to note that supplier requirements differ per business and there is a need to focus on those elements where the greatest benefits can be achieved in terms of sustainable business practices.

### Compliance

Building on the work done in previous years, DSM continued with its three step approach:

1. Supplier Code of Conduct
2. Questionnaires
3. Audits

The compliance program targets DSM's 40,000 global suppliers. Special focus is given to 1,200 of these because they (1) are located in countries with high environmental, social and governance risks; (2) supply high volumes; (3) are DSM's single source for a certain product or service; or (4) have a high potential for creating shared value in the areas of innovation and sustainability.

In 2013 changes were made to the compliance program: the Supplier Code of Conduct was updated to include DSM's Life Saving Rules, the questionnaires used in compliance monitoring were moved to a web-based platform hosted by a third party to facilitate information gathering and sharing in DSM's supplier base, and the scope of the audit program was expanded.

The outcomes of self-assessments and audits continue to be input for the improvement programs for suppliers. For example, the Triple P project in China was initiated on the basis of audits carried out over the last two years in China. In 2014, there will be a continued focus on integrating sustainability compliance into the standard Supply Risk Management and Supplier Approval processes as well as in the Strategic Sourcing Methodology and in Contracting.

#### Audit results/overview of supplier sustainability program

	Global	China
Sustainability audits	40	15
Quality audits	299	70
Supplier solution projects	31	8

### China Triple P project

DSM initiated the China Triple P Supplier Engagement and Development project in July 2013, in partnership with Solidaridad and Manpower. The aim of the project is to use the People, Planet and Profit angle to engage suppliers to create a more sustainable supply chain. The idea is that suppliers in China who sign on to the project will start to apply the same approach to their own supply base and set up their own sustainability programs. In the space of one year, veteran corporate social responsibility, productivity, SHE and HR experts will organize workshops and training courses for the participating suppliers, and offer rounds of in-house technical support to achieve genuine improvements in the areas of People, Planet and Profit. In addition, to measure the potential impact and progress at each plant, an on-site baseline assessment has been carried out and a system has been set up for continuously monitoring improvements.

*"We think this is a great initiative to work together to improve on people, planet and profit collaboratively in the whole value chain. It benefits all parties involved. We certainly hope to work with DSM further in the future on this aspect."*

*Jobert Xie, Sustainability Leader, TopSafe Petrochemical Logistics and Storage Services*

Intermediate results indicate that the investments made in this project (by DSM and the participating suppliers) have an estimated payback time of six months.

In Q1 2014 the project moved to a next stage, based among other things on an evaluation of whether it fits into the context of initiatives that the Dutch government has set up in China.

*"With the help of DSM, we improve our understanding of corporate social responsibility, clean production as well as sustainable development. We are willing to keep in step with DSM in sustainability."*

*Sun Chunguang, General Manager, Rianlon Corporation*

### Civil Society

Throughout the year DSM engaged with a wider audience to talk about the challenges the world is facing, for example hidden hunger and climate change, and also about the opportunities for sustainable development. DSM met with many non-governmental organizations during the year.

## Public-Private Partnerships

### DSM-WFP Partnership – Bright experience

Since 2007, DSM has maintained a strategic partnership with the United Nations' World Food Programme (WFP) to address the problem of hidden hunger in the developing world. As part of this collaboration, DSM is lending its expertise to help improve the nutritional value of the food WFP distributes to those in need in more than 25 projects. With the partnership renewed in 2013 for an additional three years, DSM and WFP seek to double the number of people who benefit from improved nutrition, from the current annual reach of 16 million to 25-30 million by 2015. This year, partnership projects included improving nutrition capacity at WFP, scaling up Micronutrient Powder distribution and continuing the roll-out of rice fortification in Bangladesh and Cambodia.

*"As a long-term strategic partner of the WFP, we use our unique scientific expertise in health and nutrition to develop micronutrient innovations that meet the specific nutrition needs of the people to resolve the issue of 'hidden hunger' around the world. In China, some people in less-developed areas suffer from the effects of micronutrient deficiencies. As one of the global leaders in health and nutrition, we are responsible for helping to address this issue and to provide brighter lives for the people today and generations to come. "*

*Dr. Jiang Weiming, DSM China President*

In China, DSM has also once again joined hands with WFP to host an annual charity event in seven cities across the country as part of a global charity event called Bright Experience World Tour, themed "Hunger is Solvable: Bright Experience". The event aims to raise awareness and funds for the issue of child hunger and malnutrition. DSM has been part of this event for seven consecutive years.



DSM's annual charity event was held at the Gucun Park in Shanghai on September 7, 2013. Shanghai was one of the seven Chinese cities to join this campaign.

In 2013, the event attracted more than 1,400 DSM employees and their families, as well as people from DSM business partners in seven Chinese cities: Shanghai, Beijing, Nanjing, Guangzhou, Chengdu, Jiangyin, and Zibo. Project partners such as the China Foundation of Poverty Alleviation (CFPA) also joined the event. DSM employees and their family members from DSM have conducted a charity walk together with WFP and CFPA staff to show their solidarity in the fight against hunger and malnutrition.

*"This year marks the fifth time that the CFPA has participated in the event, and we expect to further raise public awareness of child hunger and malnutrition. In China, through this DSM project, we have provided 40,000 nutritious meals to more than 100 children in poor areas of Yunnan and Sichuan provinces."*

*Wang Luowei, Head of CFPA Maternal and Infant Health Project*

### World Economic Forum

DSM is an active member of the World Economic Forum, an independent international organization based in Switzerland that is committed to "improving the state of the world". This Forum brings together leaders from governments, businesses, academia and non-governmental organizations to exchange and synchronize thoughts and to work together on important agenda topics to make the world a better place.

CEO Feike Sijbesma and Managing Board member Stephan Tanda represented DSM at the World Economic Forum's Annual Meeting in Davos from 22 to 25 January 2013. They spoke on a couple of occasions and participated in several sessions on subjects including nutrition, sustainability, innovation, the bio-based economy and the role of business in society.

CEO Feike Sijbesma and China President Jiang Weiming also represented DSM at the World Economic Forum's "Annual Meeting of the New Champions" in Dalian, from 11 to 13 September 2013. They talked about the way DSM is using science and technology to re-think food, energy, and climate in view of a growing world population. They also shared their views and ideas on topics ranging from food security to sustainable growth.

### World Business Council for Sustainable Development

DSM has a long-term relationship with the World Business Council for Sustainable Development (WBCSD). In the last two years DSM has chaired the work of the WBCSD Reaching Full Potential project on product international metrics development.

This is a joint initiative of key global players of the chemical sector aiming at developing consistent and harmonized guidance for applying Life Cycle Assessment (LCA) to their products. This will help DSM to improve its ECO+ and People+ assessments. The environmental guidance is expected to be publicly released in 2014.

In 2013, DSM became co-chair of Action 2020, the new program of the WBCSD that strives to find business solutions which can solve the societal and planetary needs described in its Vision 2020, the long-term goal setting plan developed in 2011. DSM participates in three working groups: Food, Feed, Fiber and Biofuels; Sustainable Lifestyles; and Basic Needs and Rights.

### Together for good nutrition in China: DSM's Partnership with China Nutrition Society



Dr. Manfred Eggensdorfer (middle), DSM Senior Vice President Nutrition Science & Advocacy presented the “Science & Technology Award, Asia 2013” to the winners. (From left): Zou Zhiyong, Li Songtao, Zhang Meilin and Zong Geng

Since 2011, DSM has been partnering with China Nutrition Society (CNS) in establishing and running the “CNS Nutrition Research Foundation – DSM Research Fund” which provides incentives and financial support for nutrition researchers to explore nutrition solutions.

Given the fact that ageing of the population accelerates in China, more research is needed on solutions for supporting longevity and health of elderly people. In 2013 alone, the DSM Research Fund provided RMB 1.5 million to support 11 research projects in this field. Since its inception, the fund has already supported a total of 30 projects researching about nutrition for infants and the elderly.

During the 11th National Conference of the Chinese Nutrition Society in May 2013 in Hangzhou, DSM presented its “Science & Technology Award, Asia 2013” to four shortlisted young talented scholars for their outstanding accomplishments in the field of human nutrition science. The winning project was about the effects of calcium supplementation on the endogenous cholesterol metabolism in estrogen deficiency. The award was given for the first time in China, in partnership with the CNS. DSM China also received the “Nutrition Innovation Gold Award” from CNS. The award honored DSM's commitment and its contributions to working with customers, professional organizations and governmental agencies in the pursuit of nutrition innovations and public health improvement.

DSM was also elected to the council of CNS in 2013, recognizing the company's reputation, business integrity, product quality, contribution to nutrition innovation and research, as well as its efforts for public nutrition improvement in China. Apart from DSM, there are only four other corporate members on the CNS council, namely COFCO, Yili, Wilmar and Nestle.

### DSM supports One Goal campaign initiated by Asia Football League

In November 2013, the Asian Football Confederation (AFC) in Kuala Lumpur kicked off its ‘One Goal’ campaign along with its partners DSM, World Vision, the Global Alliance for Improving Nutrition (GAIN) and the Asian Football Development Project (AFDP). By leveraging the power of and the passion for football in the region, the ‘One Goal’ campaign seeks to tackle the poor nutritional practices that have been holding back Asia and Asian football, with a particular focus on children.



China captain Zheng Zhi, the AFC Player of the Year, is signing the campaign ball and voicing his support for the One Goal campaign.



### DSM joined CPAFFC “Rainbow Bridge Program” to support a children’s drum team in Yan’an



DSM sponsored a drum team in Yan’an as part of the “Rainbow Bridge Program”.

In 2013, DSM joined the Rainbow Bridge Program initiated by the Chinese People’s Association for Friendship with Foreign Countries (CPAFFC). DSM sponsored a drum team in Yan’an, Shaanxi Province, which in turn was named “DSM AnSai Children’s Drum Team”. The Rainbow Bridge Program is aiming for building bridges by imparting knowledge and skills between China’s old poverty regions and multinational corporations.

### Donations to China’s earthquake regions

After the devastating earthquake of 2008, DSM China and its employees donated RMB 1 million to help rebuilding two schools in the affected regions, one in Sichuan province, and another in Gansu Province. In 2013, the school in Gansu re-opened. On that occasion DSM donated 20 computers and laptops, more than 1000 books and sports equipment. At the end of 2013, a delegation from DSM China visited the second school in Sichuan and donated 20 computers for the school’s computer lab.

In April 2013, DSM China’s Management Team sent a donation request to all employees to support rescue and relief efforts for Ya’an in Sichuan Province, which was again hit by an earthquake. Management announced to at least double up the amount of employees’ donations. Employees gave nearly RMB 60,000, while the DSM China management decided to add up to RMB 250,000 as total donation. The donation was sent to the China Youth Development Foundation (CYDF) to help rebuild a damaged school as well as to build five DSM hope kitchens and one DSM happy cinema in Ya’an Sichuan earthquake area.

### Hope Kitchens for schools in poor regions: A partnership with the China Youth Development Fund

Since 2012, DSM China has been supporting the “Hope Kitchen” program initiated by the China Youth Development Foundation (CYDF). The program aims to improve the diet of

rural Chinese school children, and to improve the nutritional knowledge and food safety practices of rural teachers and kitchen staff.

DSM has donated RMB 80,000 to build “DSM Hope Kitchens” in primary and secondary schools in poor areas of China. Every DSM Hope Kitchen is equipped with standard cooking utensils, refrigerator, disinfection cabinet, as well as nutrition guidelines and food safety practice posters and booklets. Headmasters from the respective schools received training on children’s nutrition and food safety. Experts from DSM also provided support to the kitchens staff on how to make sure they provide safe and nutrient meals to the students. In 2013, two DSM Hope Kitchens were completed and put into use.



DSM’s Hope Kitchen in Lintao County, Gansu Province

### DSM supports China Food Information Center (CFIC) to promote public awareness of nutrition

DSM sponsored the China Food Information Center (CFIC) in order to support the platform’s efforts in spreading the concept of good nutrition to the public through expert hearings or discussions on food safety concerns. CFIC also promotes distributing accurate information to consumers about food and its nutritional value, and to clarify misunderstandings and concerns.

### DSM Scholarship at Sichuan Agriculture University

From 2011, DSM has been sponsoring a five-year scholarship program, the DSM Scholarship at Animal Nutrition Institute of Sichuan Agriculture University. It aims to provide financial support to good students in unfavorable financial situations and honors students for outstanding academic achievement. As of late 2013, DSM has provided a total of RMB 150,000 to the university. More than 50 students have received financial support.





# Report of DSM China 2013

HEALTH • NUTRITION • MATERIALS



**DSM**

BRIGHT SCIENCE. BRIGHTER LIVING.

# Key data for DSM China 2013

	2013	2012	2011
<b>People</b>			
Workforce by Dec. 31	3600	3569	3678
Female / Male ratio	30/70	30/70	30/70
Frequency Index of recordable injuries (per 100 employees; DSM and contractors)	0.15	0.14	0.19
<b>Planet</b>			
Energy use (in PetaJoules)	8.59	7.72	7.90
Water use (in million m <sup>3</sup> )	6.20	5.81	7.08
Greenhouse-gas emissions in CO <sub>2</sub> equivalents (million tons)	0.73	0.79	0.90
Emission of volatile organic compounds (tons)	2349	1202	965
COD (Chemical Oxygen Demand) discharges (tons)	159	120	327
NO <sub>x</sub> (tons)	231	198	595
SO <sub>2</sub> (tons)	93	93	365
Landfilling non-hazardous waste (tons)	5414	2172	157
Environmental incidents (cases)	0	0	0
<b>Profit (in USD million)</b>			
Net sales 2013 China, continuing operations	1714	1700	2001



*“DSM offers me many opportunities in different phases, each of those experiences makes me more clearly aware about my career development targets, my interests and strengths; I feel particularly lucky that I can always meet leaders and colleagues who I can learn from and openly communicate with, as well as experience the happiness and hardship together.”*

Tong Aimin, Strategic Business Manager Animal Nutrition and Health China, joined DSM in 2004 and has worked on various roles as R&D supervisor at manufacturing sites, plant manager, and startup manager of the new site. In August 2013, with the platform of talent development within DSM China, she became strategic business manager in DSM Nutritional Products China. She succeeded in another career transfer to the business world.



# People in 2013

The People dimension of DSM's Triple P strategy is about improving people's lives through the company's activities, solutions and innovations. 'People' includes consumers, workers and communities across the value chains in which DSM is active. This chapter includes both the People+ strategy, which is the external component of the People dimension, and, under 'People at DSM', the human resources strategy as the internal component. For DSM, sustainability provides both a growth driver and a strong foundation for its human resources strategy.

## People+

People+ is DSM's program for the development of innovative products and solutions which can measurably improve the lives of end-users, employees and communities across the value chains in which it is active. The benefits for consumers, workers and/or communities can be created at any stage of the product's life cycle, from the sourcing of raw materials through to manufacturing, distribution, use and disposal. The People+ program uses the DSM People LCA tool to measure the social impact of each product.

The DSM People LCA tool is based on international standards of the United Nations (UN), the World Health Organization (WHO) and the International Labour Organisation (ILO) and has been developed in cooperation with internal and external stakeholders. With this tool, the social impact of a product on people's lives can be assessed, from raw materials extraction until end-of-life disposal. By using this methodology the People+ program improves DSM's 'people' performance, in the same way that the ECO+ program already does for environmental and ecological performance. Both programs provide a measurable way to enhance DSM's ability to address sustainability as a business growth driver and strengthen its leadership position in sustainability. See also ECO+ on page 34.

In 2013, DSM's People+ program made considerable progress with the addition of several new products to the People+ portfolio. By engaging with peer companies and other stakeholders, DSM has improved the tool that helps it to measure a product's impact on people's lives. The tool has proven to be highly effective in trials across a number of innovations and value proposition projects. These tests have also enabled it to be further refined and improved.

The DSM People LCA tool has four dimensions. It takes into account the impact that the product has on (1) the health condition of end-users, (2) the perceived comfort and well-being of end-users, (3) the working conditions of employees that produce it, and (4) the communities across the value chains in which DSM operates.

The dimension Health Condition assesses how the product

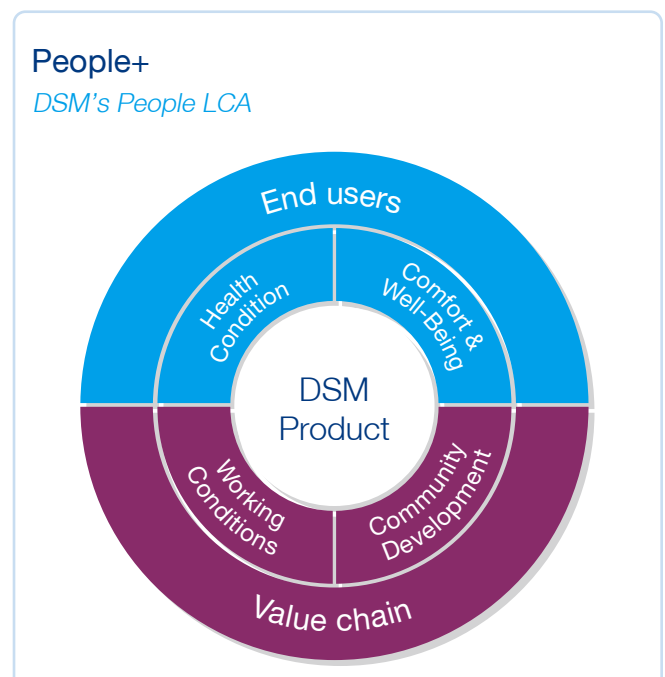
contributes to maintaining, improving and regenerating people's health. For example vitamin D is vital to bone health and muscles strength, and it can reduce the risk of falls and fractures linked to osteoporosis. Comfort & Well-being measures whether a product contributes to comfort and well-being. An example might be a product that smoothens the skin or reduces perspiration. Working Conditions focuses on employees.

People+ products are required to be made within a healthy and safe working environment. This means that in every part of the life cycle employees are not subject to excessive working hours or other working conditions that can be detrimental to their health or well-being. Community Development determines whether a product contributes to local prosperity. Helping to improve education, creating jobs and purchasing locally are examples of community benefits that are measured as part of a People+ product assessment.

## People+ examples

DSM's Alpaflor® Edelweiss is based on edelweiss flower extract that is used in personal care products, such as moisturizer. It contributes to health, comfort and well-being because it improves skin resistance and gives a better skin feel. It contributes to local prosperity because of local cultivation and harvesting practices that have a positive effect on alpine floradiversity.

Waterborne resins for paints and coatings reduce the risk of diseases amongst professional and do-it-yourself painters. In doing so, they improve the comfort and well-being of consumers in two ways and contribute to better working conditions of professional painters.





DSM's Maxarome® is a yeast extract that can be used in food products to reduce salt content without eliminating the taste that people experience when they eat something salty. This contributes to a healthier lifestyle with lower salt consumption.

The DSM People LCA tool makes it possible for DSM to quantify the Brighter Living part of its brand promise in a measurable way. In the coming years, it will continue to develop the methodology in alignment with its stakeholders. The company is also looking forward to continuing working closely alongside its customers and suppliers to create further value across the chain.

## People at DSM

DSM's human resources strategy contributes to the development of inspiring and collaborative leaders, creates an engaged and competitive workforce and fosters an inclusive environment in which people trust and respect one another, and where they encourage each other to achieve sustainable focused business growth. The approach is supported by the ONE DSM Culture Agenda.

DSM aims to further internationalize its business in order to bring its organization closer to its key markets and customers, strengthen the business and stimulate inclusion, diversity and innovation. DSM combines a strong regional infrastructure with clear board level accountability for regional growth. The company's human resources strategy supports its internationalization goal.

## ONE DSM Culture Agenda

In 2013, DSM further rolled out its ONE DSM Culture Agenda across the organization. This initiative aims to ensure that DSM remains aligned with the needs of an ever-changing world and develops the behaviors and organization it requires to fulfill its strategic ambitions and to become a high performance organization. ONE DSM is based around the themes of External Orientation, Accountability for Performance (and learning), Collaboration with Speed, and Inclusion & Diversity.

A ONE DSM Culture Agenda introduction week took place in the first quarter of 2013, followed by four additional theme weeks during the year. Thousands of employees participated in the events which focused on specific behaviors related to each of the four themes, for example an online collaboration with employees and selected customers to see how to leverage social media to sustain DSM's business. This initiative led to more than 120 ideas. In addition, it promoted a different way of working.

The ONE DSM Culture Agenda emphasizes that employees are bound together by the behaviors fostered by its four

themes. The four themes are the glue that connects the organization into ONE DSM.

The ONE DSM Culture Agenda and its four themes remain a focal point during 2014, and will continue to support DSM's strategic business objectives, with next focus on 'doing, acting and owning'. The themes of the ONE DSM Culture Agenda are described as follows:

### External Orientation



DSM is convinced that in order to execute its growth strategy and adapt to changing customer and industry requirements, its employees must be aligned with the realities of a rapidly changing world. This means not just anticipating customer needs to drive marketing & sales and innovation priorities, but also being better able to track, learn and compete across all functions. External Orientation also helps to broaden DSM's networks and engage with stakeholder groups.

At a local Eye-Open and Talent event at DSM Shanghai campus, which was part of DSM's External Orientation theme, employees received a lot of inspiration from external speakers, as well as internal views by managers on career development.



At the Eye-Open and Talent event, DSM employees at Shanghai campus gained insights on career development.

### Accountability for Performance (and Learning)



DSM expects its employees to set themselves ambitious targets and to deliver on these. Accountability for Performance (and Learning) is about people taking responsibility for their actions and for the performance of their teams. It also means recognizing and celebrating successes, while viewing problems and mistakes as individual and collective learning opportunities.

During a brainstorming event, employees from various businesses and functions in Shanghai identified 'challenges' that could be solved using DSM Engineering Plastic materials and available patents.



DSM Engineering Plastic colleagues held a brainstorming event at Shanghai campus for collective learning.

### Collaboration with Speed



In an ever more connected world, collaboration has become an important competitive advantage. DSM encourages employees to actively (co-) create, share and build on the ideas, information, knowledge and expertise of their colleagues and the outside world. By fostering collaboration, DSM taps the true potential of its global workforce and promotes faster decision making and execution.

In DSM's Nanjing office, a brainstorming meeting was organized on how to achieve CwS (Collaboration with Speed), during which many good suggestions were brought forward and translated into tangible actions.



Employees at Nanjing office shared good suggestions at a brainstorming meeting.

On September 10, 2013, a Zero E-mail Day was organized at DSM's Shanghai Campus and the Nanjing Office. A lot of employees supported this initiative by sending no e-mails. Instead, they stepped out of their cubicals to meet and talk with people.

### Inclusion & Diversity



Fostering an inclusive culture that embraces differences is consistent with DSM's corporate values and helps it to create the high-performance organization it requires as a truly global company.

A more balanced DSM leadership group (in terms of gender, nationality) is part of these efforts and will improve decision-making processes and the implementation of its strategy.



At Shanghai campus, DSM employees enjoyed a moment of fun by dancing the "One DSM Move".

In Shanghai and all over China many DSM employees enjoyed a moment of fun by dancing the "One DSM Move". They demonstrated that regardless of differences, they also have things in common that bind people together and make people feel part of the 'in' crowd, thereby including everyone.

### WIN Roundtable LEAN IN

At DSM Shanghai, the local WIN team held an afternoon roundtable to discuss the book "Lean In" by Facebook COO Sheryl Sandberg. WIN (Women Inspired Network) is a women-led and initiated organization with a mission to identify and champion the concerns and developments of female employees at DSM (see page 29). The roundtable discussion about Sheryl Sandberg's book "Lean In: Women, Work, and the Will to Lead" included both men and women, permanent and temporary employees at various work levels. In her book, Ms. Sandberg encourages women to take the responsibility to drive for career development and leadership roles. DSM also encourages women's advancement as part of its inclusion and diversity concept which is a part of the ONE DSM Culture Agenda. During the Lean In Roundtable, participants shared many interesting and inspiring personal experiences.





DSM WIN team held afternoon roundtable to discuss women's career development.

In 2013, many sites all across DSM China held week-long "Half Glass Full" events, during which town hall meetings were organized at sites and offices. There, "Half Glasses" of drinks were offered while giving positive feedback and symbolize what we achieved instead of what we missed (glass half empty). DSM encourages a "Glass Half Full" attitude of delivering positive energy, which drives the ONE DSM Culture Agenda and the overall development of DSM people.



"Half Glass Full" events were held at many Chinese cities in 2013.

## DSM Employee Engagement Survey

DSM's Human Resources strategy is about helping employees to successfully deal with the challenges of a changing company in a fast-moving global marketplace. The concept of employee engagement is very important in this regard. An engaged workforce is critical to DSM in realizing its ambitions. Engagement is about creating an inclusive and high-energy working environment, where employees are aligned and energized to contribute to the company's success.

In 2013, DSM executed its sixth worldwide Employee Engagement Survey. A total of 19,259 employees, including 535 contractor employees, completed the questionnaire, which was distributed online and on paper in 19 languages to all DSM employees. This represents a very high response rate of 85 percent.

In China, a total of 3,220 employees shared their feelings and gave feedback via the survey. The response rate of 98 percent was an inspiring record. Generally, the 2013 results showed a good engagement level. DSM will continue to use the Employee Engagement Survey to guide its ONE DSM Culture Agenda.

### Shunde site gained 37% improvement on Employee Engagement

*"We would like to underline our appreciation for the successful work you put forward to improve the engagement of your team in Shunde. The 37% improvement is impressive and a role model for DSM China.*

*You clearly showed how much you value employee engagement and the voice of your employees. You created changes based on the result of previous surveys and took actions.*

*With the new EES results in our hands, we strongly believe that you will continue your improvement journey."*

*Jiang Weiming, DSM China President, in his acknowledgement letter to Shunde management thanking them for their efforts to improve the overall employee engagement.*

## Talent Acquisition

There are few things more vital to the success of an organization than having the right people in the right positions. Get this right, and you have the foundation for success and a competitive advantage. That is why DSM has made the recruitment of diverse talent for today and tomorrow a top priority and fosters an inclusive working environment.

Working for DSM is about doing something meaningful to improve people's lives. DSM continuously creates sustainable solutions to many of the world's most important challenges. This means doing everything we can to spark, nurture and realize our people's bright ideas for translating customer needs into new opportunities. This takes place in a working environment that promotes health, personal initiative, an entrepreneurial mindset and inspirational leadership.

*"Our ambition is to build up a top notch Talent Acquisition (TA) Center of Excellence in China and proactively provide total TA solution to Business, in line with global TA strategy. We're building a high performing TA team with satisfying customers, proactive TA Strategy, high quality of candidates and efficient process and resources such as social media."*

*Michelle Ma, Recruiting Manager*

## Talent Management

DSM strongly believes that successful talent management requires leaders who have the right focus, mindset and capability to identify, develop, engage and share diverse talent. Leaders who are inclusive and who are focused on growing their people, the business and themselves. In addition, the company believes in creating opportunities for its talented employees to maximize their development. In 2013 the company continued the initiatives aimed at (1) empowering employees to take ownership of their career and (2) empowering leaders to take accountability for both talent performance and talent development. This resulted in a stronger focus on Individual Development Plans for DSM's employees, as part of its yearly performance and development cycle and more attention for succession planning and the implications for the company's diversity footprint.

### Asia Connect Mentoring Program

The Asia Connect Program was kicked off in December 2012 by Stefan Doboczky (Member of the Managing Board, Royal DSM) and the four Country Presidents in Asia.

This new mentoring program aims at multiplying talents through four main objectives: Accelerating development of talents, upgrading leaders' skills in developing others, as well as attracting & retaining talents by providing a personalized development platform. The program also strives to multiply growth through realizing DSM geographic ambitions, creating succession, taking bold business decisions and being "fit for the future".

Asia Connect focuses on the talents from China, India, Japan and Singapore. In 2013, two pilot sessions were conducted with more than 85 talents and a total of 44 executives and selected leaders which were involved as mentors. Both mentors & mentees received training on how to successfully build up mentoring relations.

Furthermore, the Asia Connect program has used relevant websites and training tools from DSM North America. Employees are connected to mentors based on their preference, a process that is supported through match making by the Asia Connect project team. The project team proactively supports the employees in the mentoring program; its effectiveness was monitored during the six months of the program and evaluated by surveys. During informal lunches, feedback from mentors is collected to enrich the program and further transform mentoring into sponsoring.



The Asia Connect Program aims at accelerating development of talents.

*"This Mentoring program gives our talents a solid mentoring foundation to get inspiration by leaders during the six-month period. Many colleagues participated and enjoyed the benefits. We believe that the Mentoring program played a key part in our talent development and provides talents with an additional resource to help them reach their professional goals."*

*Jan Anne Schelling, VP HR DSM China*

*"Thanks to the Asia connect program, we started our mentoring this April. I really appreciated that my mentor shared with me how to manage the ups and downs of life, be creative on business models, get good practices from other business units and also reach out within DSM to learn from excellent people. We are very lucky that DSM supports this mentoring program."*

*Thanks to Jan Geert van der Putten by Gary Gu*

### DSM Leadership Model

DSM has set ambitious goals for 2015. To execute the growth strategy, DSM is building a high performance organization by focusing on the DSM Leadership model and accelerating the ONE DSM Culture.

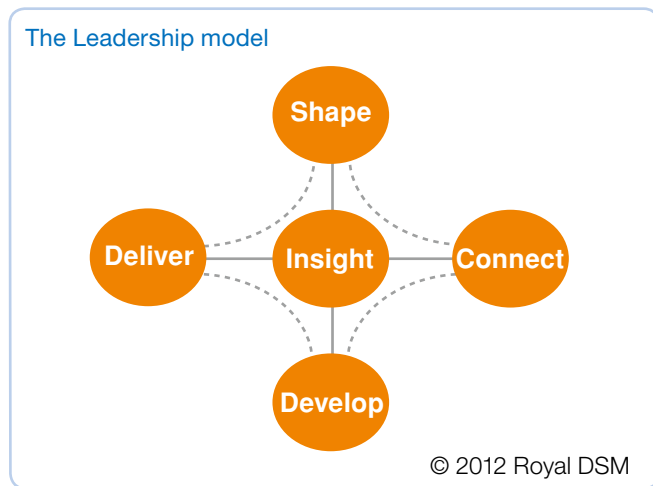


The DSM Leadership Model provides a common vision and language regarding the leadership DSM desires, and it describes an inspirational mindset to raise the bar on the performance of leaders and to grow people. The model sets out the expectation for leaders to be role models and developers of a sustainable, successful organization for the future. It is the basis for high quality processes to hire people, to grow and develop talent and build high performing teams.

The Leadership Model is based on five leadership elements: Insight, Shape, Connect, Develop and Deliver. That means being inspirational role models as DSM leaders. The new behaviors will be used for recruitment, appointments, promotion, development, teambuilding and assessments from 2013 onwards.

#### Bringing the Leadership Model to Life

The Leadership Model is integrated in many HR processes for the top of DSM's organization. A toolkit gives employees practical support in understanding, implementing and sustaining the Leadership Model. Various workshops were rolled out in 2013 to bring the Leadership model to life and in 2014 further role out to all people managers.



#### Cross BG and Cross Function Internal Career Movement

DSM encourages employee internal transfers to allow them to further develop across different business group, functions and regions. DSM China set up the platforms for cross BGs talent review and discussion for China manufacturing, R&D, Marketing & Sales. 28% of DSM high potential and top potential employees have moved or promoted and 64 cross BG and cross function internal career movements have been achieved in 2013.

#### A successful people development story – Tong Aimin



Tong Aimin, Strategic Business Manager Animal Nutrition and Health China.

“DSM offers me many opportunities in different phases, each of those experiences makes me more clearly aware about my career development targets, my interests and strengths; I feel particularly lucky that I can always meet leaders and colleagues who I can learn from and openly communicate with, as well as experience the happiness and hardship together.”

The transition from R&D to plant management was a big challenge both for me and the company. During that period, I got a great trust and support from management team and colleagues. Many colleagues I have worked together become good friends now.”

Tong Aimin joined DSM in 2004 after her graduation of a master degree. During the past 10 years, she has worked on various roles as R&D supervisor at manufacturing sites, plant manager, and startup manager of the new site. In August 2013, with the platform of talent development within DSM China, she became strategic business manager in DSM Nutritional Products China. She succeeded in another career transfer to the business world.

#### Learning and Development

DSM strongly believes in the need to invest in the knowledge, skills and experience of its employees to ensure their long-term success. The company provides its employees with various kinds of learning opportunities, including classroom and virtual programs, on-the-job training, coaching and mentoring. The DSM Learning Architecture consists of four program clusters: executive programs, management programs, functional programs and e-learning programs.

This architecture creates a coherent concept of learning and program design, facilitates the development of a DSM learning culture and provides enhanced learning for all talents. DSM's programs are designed and delivered in close cooperation

with leading international business schools and global training providers (such as IMD, Wharton Business School, Babson College or Erasmus University) and are supported by a diverse internal faculty, primarily consisting of people from our top management. Other learning methods such as round table discussions, business simulations, virtual classrooms, webcasting and team assignments are integrated into the programs. This enables interactive knowledge sharing and stimulates peer-to-peer networking in the organization.

In 2013, DSM made further progress in designing and rolling out the new Bright Talent Program in Asia. 24 Asian participants enrolled in this active learning program consisting of three modules during the course of 2013.

The DSM Business Academy (DBA) offers expertise in the fields of learning and professional development, comprising of Executive, Management, Functional and e-Learning Programs. The academy is committed to creating the right environment to ensure that learning is effective, worthwhile and enjoyable.

In addition to the DSM Business Academy, DSM offers employees at all levels in the organization a wide variety of training opportunities (both on-the-job and classroom training). As one example, in 2013 a “new manager boost kit” was launched to enable newly appointed managers in people management skills. A modular approach enables them to practice in their daily work environment. A buddy system is also part of this approach to support exchange and joint development.

### Workforce Composition

#### Inclusion & Diversity

DSM believes that fostering an inclusive culture that embraces differences will help to drive business results and innovation. A workforce that is diverse and that shares the desired DSM behaviors and mindsets will support a high performance culture. Moreover, inclusion and diversity promotes an outside-in approach, leads to a better connection with end customers and increases DSM’s focus on innovation, thereby strengthening the company’s global presence.

DSM has defined inclusion and diversity aspirations (in terms of gender and nationality) for its business groups for the period 2012-2015, to ensure that its organizational readiness is in line with its growth ambitions for 2015. DSM continuously addresses the geographical distribution of management and other key functions, with a keen eye on gender and nationality balance.

The role of the DSM Inclusion & Diversity Council, chaired by DSM CEO Feike Sijbesma, is to facilitate inclusion and diversity at DSM and to support all DSM businesses in creating a sustainable inclusive environment, where diversity

is fully embraced. This Council is strongly aligned with DSM’s internationalization efforts to make further progress with the company-wide ONE DSM Culture Agenda.

DSM China is in line with DSM’s global diversity ambitions and endeavors to achieve a good balance between different cultures and nationalities, between different age groups, and between male and female employees. It continuously addresses the task to build up a more balanced DSM China Leadership group.

Women currently make up 30% of the workforce in China. The ratio of female to male employees varies among Executive, Management and other positions.

At DSM China, the balanced culture and nationality diversity among the executive and management staff helps to foster the creation of a dynamic DSM China Leadership group. Demographic change, such as the ageing of the population, is going to become more and more noticeable in many countries, particularly in China. In forming a more diverse leadership group in China, DSM not only does this in regard to gender and international background, but also in regard to age which supports building on elder employees’ experience while at the same time nurturing a pipeline for the future generation of DSM China’s leadership.

#### WIN – Women Inspired Network

WIN is a women-led and initiated organization with a mission to identify and champion the concerns and developments of women employees at DSM. It aims to create a supportive environment that encourages, enables, and equips women to reach out for their top potential and to contribute to the success of DSM.

Research shows that companies promoting women to senior roles are better equipped to make good decisions and, as a result, outperform their competitors. Gender-balanced management teams are better able to understand their stakeholders and customers, and are more open to new ideas. Gender diversity isn’t just good for women— it’s also good for the (triple) bottom line, social, economic and environmental.

DSM is making progress, but representation of women remains fragile compared to global benchmarks of comparable companies. The Women Inspired Network (WIN) network is important for the organization because it contributes to the attraction, retention and development of women at DSM.

WIN consists of three regional groups – DSM Netherlands, DSM China (newly established in 2013) and DSM North America. The role of the networks is to create opportunities where women and/or other underrepresented groups may connect and thereby contribute to Inclusion. While this

network is for women, all DSM employees are welcome to attend any of our events.

### Happy Mother's Room Opening at DSM China Shanghai Campus

The cozy Mother's Room is in a discreet area to provide a comfortable environment for new mothers. The room demonstrates that the company is highly committed to taking care of our young mothers by providing private space for women employees who have new-born babies.



Mother's Room opened at Shanghai campus in 2013 for new mothers.

## Safety

### Occupational Safety:

It is DSM's goal to have an injury and incident-free working environment. DSM has set itself the target of reducing the Frequency Index of Recordable Injuries by 50 percent or more by the year 2020 compared to 2010.

Safety performance at DSM China has continuously improved over the past years. In 2013, the DSM China Frequency Index of Total Recordable Injuries stood at 0.15 (including contractors), which was a reduction by 40% compared to 2010. DSM China's safety performance holds the top rank among the company's regional entities. In 2013, additional two sites in Greater China (Resin Kunshan and PingTung) were classified as "good" as a result of the internal Corporate Operation Audit (COA).

The rate of serious incidents and Lost Workday Cases (LWC; 0.01) improved significantly compared with 2012. DSM's aim is to lower the rate of serious incidents by 65 percent until 2020, compared to 2010. By 2013, the rate of serious incidents at DSM China has already been reduced by 36% compared to 2010. However, one serious incident occurred near moving parts of a machine in a recently acquired plant that is still undergoing integration and is not yet consolidated.

The increased focus on preventing serious accidents and fatalities that began with the worldwide introduction of DSM's Life Saving Rules has helped to significantly improve the company's safety performance. The incidents and near-misses that still occurred demonstrate that a continued improvement of the company's working practices is needed. To this end, in 2013 DSM developed and set up mandatory standards for LOTOTO (Lock Out, Tag Out and Try Out; a way of safeguarding workers from the release of hazardous energy during equipment servicing or maintenance activities) and for Confined Space Entry, which is applicable to every DSM employee and all contractors.

Safety Performance (2013)	DSM China	DSM Global	Target (2010-2020)	Realization of China (2010-2013)
TRI-all (Total Recordable Injury)	0.15	0.38	-TRI all < 0.25 -50% reduction	-TRI all =0.15 - 40% reduction
Serious Incidents Rate	0.016	NA	-65% reduction	-36% reduction
LWC-all (Lost Workday Cases)	0.01	0.15	NA	NA

### Process Safety

DSM follows the European Chemical Industry Council (CEPIC) guidance in defining which incidents qualify as process safety incidents (PSI). In 2013, there were 17 incidents classified as process safety incidents for DSM China sites. DSM's targets for reducing the Frequency Index for PSI are 50 percent

in 2015 and 75 percent in 2020, starting with a baseline Frequency Index of 0.68 (2010). In 2013, the main causes of process safety incidents were analyzed. This led to the identification of several improvement actions in operations, design and maintenance.

DSM continues to contribute to developing a globally harmonized process safety performance-reporting standard. The primary objective of this standard is to enable companies to measure their performance and drive improvements. It also enables benchmarking across regions or companies, thus creating better transparency on process safety performance.

In 2013, DSM China organized a number of process safety training workshops including seminars on Hazard and Operability (HAZOP), Process Safety Analysis (PSA) training and Machine Safety Analysis (MSA) training. Meanwhile, a process safety competency development plan for Greater China was developed by DSM China's Operation & Responsible Care (CORC) department for the coming three years (2014-2016). This plan functions as a competency roadmap for continuous process safety improvement in Greater China. Other functional competency development plans completed in 2013 include occupational Safety and Health, Process Control, Maintenance, as well as Lean & 6 Sigma.

**Several DSM China sites achieved new records of Injury Free**

In 2013, Several DSM sites in Greater China have set a new record by staying entirely free of injuries. These sites were DSM Engineering Plastics (DEP) Jiangyin site, DSM Nutritional Products (DNP) Xinghuo site, Resins Kunshan and Pingtung site, DNP Premix Shandong site, and DSM Nanjing Chemical Company Ltd. (DNCC) 2nd line project, etc. Meanwhile, the DSM China Campus keep top 1 record of recordable free among all DSM offices. They achieved this success thanks to continuous improvement on their SHE system and thorough implementation of several SHE programs such as the global DSM life saving rules and behavior-based safety programs.

In March 2013, the Kunshan site celebrated the achievement of managing to maintain 2500 days without any LWC case which is a milestone for the site's SHE management. In December 2013, DSM Engineering Plastics (Jiangsu) Ltd. (DEPJ) achieved 14 years without an LWC and 4 years without a recordable injury.



Employees from DSM Kunshan site celebrated for the achievement of LWC Free 2500 days.

**DSM Resins PingTung (Taiwan) site has won the 2013 DSM Global SHE Award**

Once a year the DSM SHE Award is awarded to the best performing site for Safety, Health and Environment. The site that shows the strongest sustainable improvement in SHE will receive the DSM SHE Improvement Award. In 2013, DSM Resins PingTung (Taiwan) site has won the 2013 DSM Global SHE Award.

According to the DSM jury: "The PingTung Site has a strong and solid but also creative SHE system showing sustainable dynamics and initiatives addressing all aspects of SHE and involving everybody in the organization, including contractors and the families of the employees."

The jury also saw an organization that for several years already has a very high standard, that was far beyond compliance, with a mature internal auditing system, while at the same time always looking for new ways to keep attention and awareness levels high, and to further improve. Ping-Tung site radiates passion and care, effectively resulting in meaningful SHE initiatives involving all employees. It has an outstanding Behavior-Based Safety Program and a well-developed health program, both with respect to exposure prevention and vitality. It is an exemplary site in a challenging external environment.



DSM Global SHE Award ceremony was held at Xinghuo site.

In July 2013, the DSM Xinghuo site held a DSM SHE Award ceremony. Mr. Nico Gerardu (former Member of the Managing Board) presented the award to Xinghuo, which it has won as it has shown the strongest sustainable improvement in the SHE field. The Xinghuo site has a strong, solid and creative SHE system showing sustainable dynamics and initiatives addressing all aspects of SHE and involving everybody in the organization, including its contractors. The site also received a cheque from Mr. Konrad Brueggemann (CO&RC VP). It will donate the money to a local Welfare House in order to support a charity that cares for disabled and childless elderly people. The former site manager, Mr. Pierre-Yves Hardy, said: "This award acknowledges our commitment, passion, collaboration



and accountability to make the Xinghuo site one of the leaders in all aspects of Safety, Health and Environment. Today, we all feel extremely proud to be recognized for our efforts.”

### DEPJ Passed Audit for 2nd Grade Enterprise of Work Safety Standardization of Jiangsu Province

In December 2013, DEPJ passed the audit for the 2nd Grade Enterprise of Work Safety Standardization of Jiangsu Province. The audit team assigned by the Jiangsu Administration Bureau of Work Safety to DEPJ was composed of five experts for Work Safety Standardization and safety management. During the audit, the experts thoroughly examined DEPJ's SHE Management System and implementation. During the field audit, they walked through the entire site. They were very impressed by our SHE performance, especially the SHE culture at the site.

## Employee Health Management

Research shows that there is a direct link between employee health and vitality and an organization's performance. Healthy employees allow for an organization that is more productive and sustainable. To increase vitality levels across the company, DSM has introduced a global employee health management initiative called Vitality@DSM. This program encourages employees to optimize their health by raising awareness about the importance of healthy lifestyle choices that contribute to a greater well-being and better performance at work. It includes a web-based tool for helping employees to assess their health risks and set themselves healthy lifestyle goals. This program is called DSM Vitality Checkpoint and offers a facility for the self-monitoring of health by employees.

Thus, in addition to creating a personal lifestyle profile for every employee, Vitality@DSM provides the company with anonymous data on employees' health. This enables DSM to monitor progress through performance indicators such as knowledge about the body mass index (BMI), cholesterol levels and blood pressure. The program compares results by region as a basis for defining the content and priorities of specific health promotion campaigns at regional and even site level. It also creates scorecards within relevant areas of the company. According to recent results, stress levels and exercise risks are significantly higher in China, compared to North America and Europe.

As of late 2013, more than 500 DSM employees working at DSM China sites or in offices had participated in the Vitality program. The program was rolled out at a few new sites including Resin Kunshan & Pingtung sites, the DEP Asia Office and DNP Xinghuo site. It also continues to be implemented at the sites that already participated in the program before 2013. There, it is used to spontaneously launch health initiatives.

### Vitality program in DCR Kunshan site

One site that kicked off the Vitality@DSM program in 2013, is DSM Eternal Resins in Kunshan. The site developed a multi-year Vitality Program Road Map and an annual Vitality & Wellness Promotion Plan. All the site's employees participated in the health promotion program, including medical check-ups, online Wellness Checkpoint® Questionnaires, and one-on-one coaching sessions. The reports from Checkpoint® and the one-on-one coaching sessions were analyzed. From the data, action plans at site level and individual level were determined and followed up, especially for exercise, diet and lifestyle-related risks, such as smoking or stress.

In June, the site organized a Vitality Health Week. There was a different main topic on each day, such as opening day activities, health measurement, a health knowledge quiz, exercise events and information sessions on healthy diet. The health week significantly increased employees' health awareness and provided solutions for promoting healthy habits. Training courses on topics such as healthy diet, stress management and body exercise were held by qualified doctors or consultants. Some of the courses were held during Family Day activities. To promote exercise & sports, the site set up voluntary teams for cycling, badminton and table tennis.



DSM Kunshan site kicked off the Vitality@DSM program in 2013.



女工健康环保奖  
SM SHE AWARD



授予最优秀的  
安全健康环保表现  
for excellent  
SHE performance



Responsible Care<sup>®</sup>  
帝斯曼2012年度安全健康环保奖颁奖  
2012 DSM SHE Award Ceremony

2013.07.17



*In July 2013, the DSM Xinghuo site held a DSM SHE Award ceremony. This award was presented to the Xinghuo site for its strong, solid and creative SHE system showing sustainable dynamics and initiatives addressing all aspects of SHE and involving everybody in the organization, including its contractors.*



# Planet in 2013

Within the Planet dimension of its Triple P approach, DSM delivers activities, solutions and innovations that improve the environmental footprint of its own business and that of its external stakeholders in the value chains in which the company operates (customers, suppliers and consumers). This approach includes the ECO+ program, in which DSM defines sustainability as a strategic business growth driver. This chapter also reports on DSM's environmental footprint and performance.

## ECO+

ECO+ is DSM's program for the development of sustainable and innovative products and solutions with measurable ecological benefits. ECO+ solutions create greater value with less environmental impact. The ecological benefits can be created at any stage of the product's life cycle, from the raw materials through to manufacturing, potential re-use, and end-of-life disposal. The ECO+ framework uses the Life Cycle Assessment (LCA) methodology to measure the environmental benefits of each product.

It is DSM's ambition that at least 80 percent of its innovation pipeline be comprised of ECO+ solutions by 2015, and that they generate approximately 50 percent of total net sales. At the end of 2013, the innovation pipeline contained 95 percent ECO+ solutions (97 percent after deconsolidation DSM Pharmaceutical Products (DPP)). ECO+ solutions as a percentage of running business increased to 45 percent in 2013 (46 percent after deconsolidation of DPP). In 2013 about 90 percent of ECO+ innovation launches were supported by comparative LCAs.

The measurable benefits of ECO+ include lower requirements in natural resources, such as water or minerals (including metals), the reduction or valorization of waste, shelf life preservation, yield improvement, energy saving, bio-based solutions, weight reduction, raw material efficiency, and removal of hazardous substances in the life cycle. ECO+ products can provide solutions that benefit society at large by responding to major societal issues such as climate change, resource constraints and scarcity, water management and biodiversity. These qualities can make an important difference across a number of industries.

For example, the ecological impact of animal farms can be reduced with DSM's innovative feed additives such as Ronozyme® phytase. This additive increases the availability of phosphorus in vegetable feed ingredients, with the result that less additional inorganic phosphorus is required in the feed. This means that less phosphorus is excreted into the environment.

The Ronozyme® phytase example can be characterized as being more 'eco-efficient' because they help minimize customers' environmental impact. In the long term, DSM's goal is to become fully 'eco-effective', by providing solutions that have a truly positive, rather than less negative, environmental impact. This is the principle behind the creation of a truly circular economy. As such it is essential that DSM continue to invest in the development of products that are made from renewable, bio-based raw materials, rather than fossil fuels.

DSM also develops safer alternatives to existing solutions. Many products that are on the market today contain ingredients that have specific benefits during usage but which may for instance cause problems at the end-of-life stage of a product, or make it more difficult to recycle. The use of safer alternatives to mainstream materials creates business opportunities for DSM that are not within the reach of companies that merely comply with minimum requirements. Some examples of this are BluCure™, the 100 percent cobalt-free curing technology for composite resins, and Arnitel® XG and Stanyl® ForTii™, which are halogen-free flame retardant plastics.

Some DSM ECO+ solutions also carry an Environmental Product Declaration (EPD). An EPD is a standardized way of communicating the environmental performance of a product or system. It is based on ISO standard 14025/TR and Life Cycle Assessment. Some examples of products with an EPD include Pack-Age™ (2012), Brewers Clarex™ (2010) and Panamore® (2009).

In addition to their environmental advantages, most ECO+ solutions also generate downstream cost benefits at various stages in the value chain. These may include qualities such as lower waste generation during the use phase, greater durability of an application, and a reduction in the energy consumption during the application or disposal phases.

In 2013 DSM launched new innovative ECO+ products. A selection of ECO+ innovative solutions is given in the next table.

Value chain benefits of innovative ECO+ solutions

	Applications	Higher eco-efficiency <sup>1</sup>	Renewable content	Safer alternative <sup>2</sup>	Environmental Product Declaration <sup>3</sup>	Downstream cost benefits
<b>Materials</b>						
<b>Akulon®</b>	Air intake manifold	●				●
<b>Akulon® Ultraflow</b>	Oil sump	●				●
<b>Akulon® Fuel Lock</b>	Gas tank	●		●	●	●
	Small engine fuel tank			●		●
<b>Arnitel® VT</b>	Breathable membrane			●		●
<b>Arnitel® Eco</b>	Pan liners	●	●		●	
<b>Arnitel® XG</b>	Electronic wire & cable	●		●		
<b>EcoPaXX®</b>	Engine covers	●	●		●	
	Crank shaft cover	●	●		●	
	Snowboard bindings		●		●	
	Film		●		●	
	Window profiles		●		●	
<b>Stanyl® Diablo</b>	Air ducts	●		●		●
<b>Stanyl® ForTii™</b>	LED lamp	●		●		
<b>Stanyl® ForTii™</b>	DDR4, SDRAM modules	●		●		
<b>Stanyl® ForTii™</b>	Connector	●		●		
<b>Stanyl® ForTii™</b>	3D-MID Micro-electronics	●		●		
<b>Dyneema®Force MT</b>	Law enforcement ballistic vest	●		●		
<b>Dyneema®DT</b>	Comfortable cut resistant gloves	●		●		●
<b>Dyneema®</b>	Air cargo pallet net	●		●		●
<b>Cellulosic bio-ethanol</b>	Biofuel	●	●	●		●
<b>Biosuccinium™</b>	Building block for broad range of materials	●	●			
<b>Decovery®</b>	Waterborne paint	●	●	●		●
<b>Somos®</b>	3D printing	●				●
<b>Uralac®</b>	Low temp. curing powder coating	●		●		●
<b>NeoRez®</b>	Waterborne floor coating	●	●	●		
<b>Hybrane®</b>	Gas hydrate inhibitor	●		●		●
<b>BluCure™ Technology</b>	Marine, Building & Construction			●		
<b>Beyone™ 1</b>	Building, Marine & Wind Energy	●	●	●		
<b>KhepriCoat™</b>	Solar panels	●				●
<b>Combined</b>						
<b>Pack-Age™</b>	Cheese ripening	●			●	●
<b>Akulon® XS</b>	Food packaging	●				●
<b>Health &amp; Nutrition</b>						
<b>Puriclor™</b>	Antibiotics	●	●			●
<b>Multrome®LS</b>	Savory food	●			●	●
<b>Brewers Clarex™</b>	Beer	●			●	●
<b>Brewers Compass™</b>	Beer	●			●	●
<b>Panamore®</b>	Bread	●			●	●
<b>Delvo®Cid</b>	Food preservation	●				●
<b>Ronozyme® HiPhos</b>	Animal feed	●				●
<b>Alpaflo®Edelweiss</b>	Organic bioactive for personal care	●	●			

<sup>1</sup> Better resource efficiency and/or circularity and/or reduced GHG emissions thanks to e.g. higher energy efficiency in the product life cycle; use of renewable raw materials

<sup>2</sup> Product can replace existing products that may contain substances of concern.

<sup>3</sup> When applicable.



## Environmental impact of DSM's operations

### Environmental Targets Achieved by DSM China

In the framework of its corporate strategy, DSM has defined long-term Safety, Health and Environment (SHE) targets for the period 2010-2015, which include eco-efficiency targets. These targets are translated into plans and activities in a Corporate Multi-year Plan Responsible Care (CMP). The CMP provides the necessary guidance to rolling three-year plans of each business group.

All environmental targets (except the target for greenhouse-gas emissions) are relative targets. This means that increases or decreases in the table above result from calculations that account for changes in production volumes. Acquisitions and divestments in the target period are excluded in order to create like-for-like comparisons with the reference year.

The graphs below in this chapter show absolute totals for the year 2013 and target realization of DSM China. Till the end of 2013, the environmental CMP targets, including COD, VOC, SO<sub>2</sub>, NO<sub>x</sub> emissions or and water intake, were realized, which means these goals were reached ahead of time.

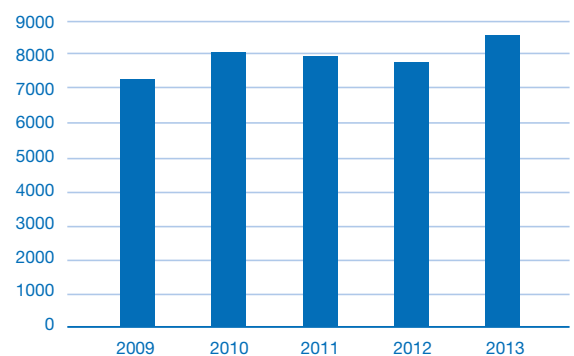
Environment Items	China 2013	DSM Global 2013	CMP Target (2010-2015)	Realization of China (2008/2010-2013)*
SO <sub>2</sub> (t)	92.9	158.49	70%	99.92%
VOC (t)	2,349.21	5,054.22	40%	42.16%
NO <sub>x</sub> (t)	231.12	1,691.06	30%	93.54%
GHG(2008-2020) (t)	734,864.53	4,335,732.47	20% (2020)	24.78%
COD (t)	159.48	5,442.93	20%	50.8%
Water Intake (excl. OTC) (1000 m <sup>3</sup> )	6195.43	45,394.65	15%	40.10%
Landfilling Non-hazardous Waste (t)	5413.54	26,613.69	15%	-10.68%

\* Corrected for changes in production volumes and product portfolio relative to the reference year (except for GHG). Acquisitions made during the target period are not taken into account. Divested sites have been excluded either.

### Energy Consumption

In 2013, DSM China's total energy consumption increased from 7724 terajoule (TJ) in 2012 to 8589 TJ. However, DSM China improved its energy efficiency by 32 percent compared to the reference year 2008, which is at the same level of the performance in 2012 (32 percent). The benefits of energy saving initiatives at some sites were offset by non-recurring declines in energy efficiency at several larger sites. For example, energy consumption at DSM Fibre Intermediates in Nanjing (China) increased by 500 TJ. Yet, at the same time, energy efficiency of this unit improved, as the increase in energy consumption was proportionally lower than the output increase of the factory's product, caprolactam.

Energy Consumption (TJ)



### New waste gas incinerator at DNCC

In 2013, DSM Nanjing Chemical Company Ltd. (DNCC) has successfully installed a new incinerator to burn waste water and gas from the production process. Compared with the old incinerator, the new one can recover heat from flue gas, which leads to annual energy savings of 4700 tons standard coal. Moreover, through the new incinerator all emissions meet the latest national requirements. This project has received government subsidies specially targeted at energy savings and the promotion of a circular economy.



DNCC installed a new incinerator to burn waste water and gas from the production process.

### Energy Week at the DSM Engineering Plastics Jiangyin site

In June 2013, DSM Engineering Plastics Jiangyin site has held a weeklong event to improve employees' awareness of saving energy, called Energy Week. During the week, the site management team organized several activities, which supported employees in learning about this topic and to generate ideas. The joyful activities included energy training and a quiz, an Energy Walk and an award for posters and slogans that promote saving energy.

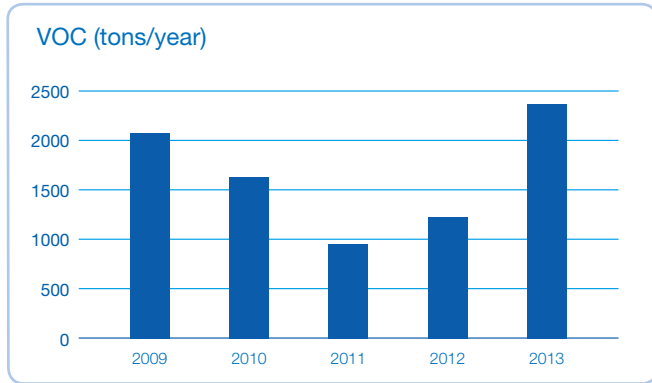
Employees created more than 60 posters and 20 slogans out of which three slogans were selected as winners. During the energy walk, some employees walked around the plant as Energy Ambassadors, and they identified more than 25 opportunities for saving energy. Totally 58 ideas were generated from the energy walk plus an ideas box collection. The site management and the site's energy saving team will work further on these ideas to transfer them into projects.



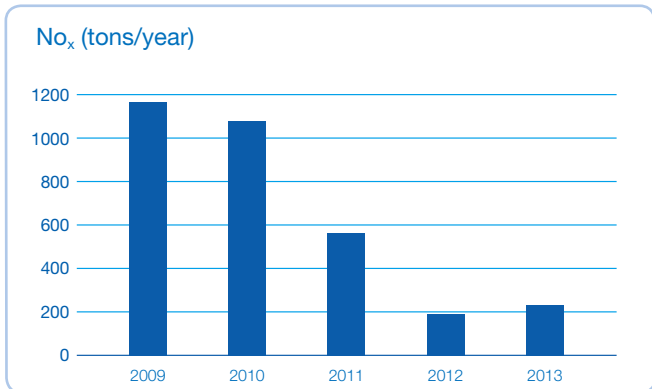
A weeklong event was held at the Jiangyin site to improve employees' awareness of saving energy.

### Emissions to air

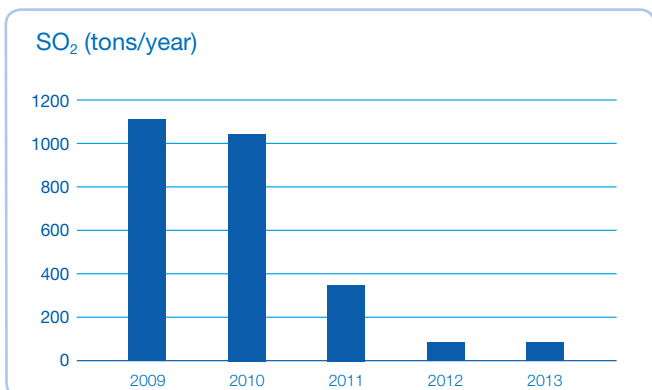
Emissions of Volatile Organic Compounds (VOCs) increased from 1,202 tons in 2012 to 2,349 tons in 2013. An increase in output at the recently acquired DSM Dyneema plant in Laiwu accounted for 1,300 tons of this growth. A project to significantly reduce these emissions began in 2013.



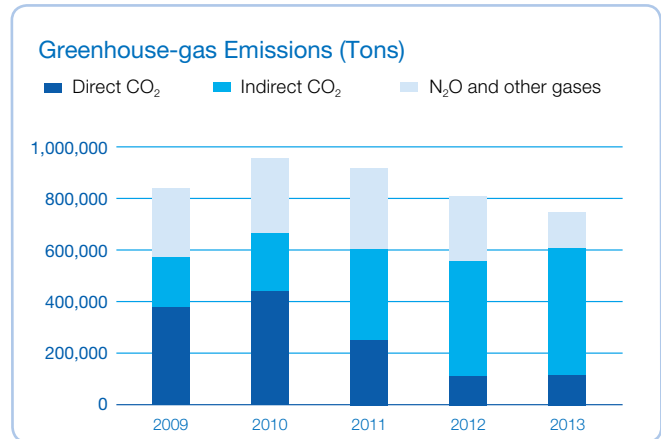
Emissions of nitrogen oxide (NO<sub>x</sub>) increased from 198 tons in 2012 to 231 tons in 2013, most of which was due to increases at DSM Sinochem Pharmaceuticals Yushu and Jinlin DSM Composite Resins sites.



Emissions of sulfur dioxide (SO<sub>2</sub>) remained relatively stable at around 93 tons. Small decreases of emissions at DSM Engineering Plastics Tai-Young Nylon in Taiwan were offset by increases from several newly acquired units.

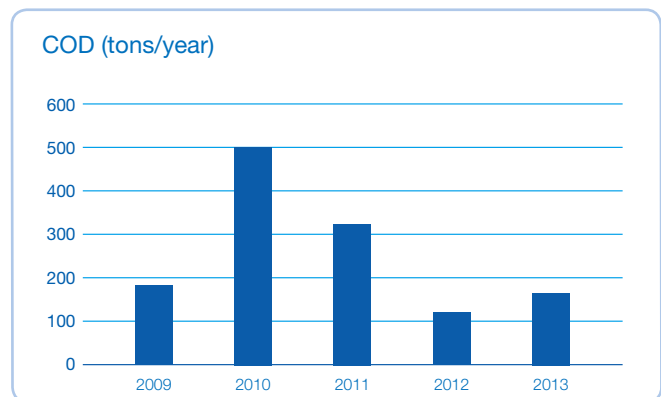


DSM China's total greenhouse-gas emissions (direct and indirect), decreased from 795,313 tons of CO<sub>2</sub> equivalent in 2012 to 734,864 tons in 2013. The N<sub>2</sub>O abatement system at DSM Fiber Intermediates in Nanjing, launched in September 2012, was operational throughout the year and resulted in lower greenhouse-gas emissions at the site, even though the site increased its production volume.

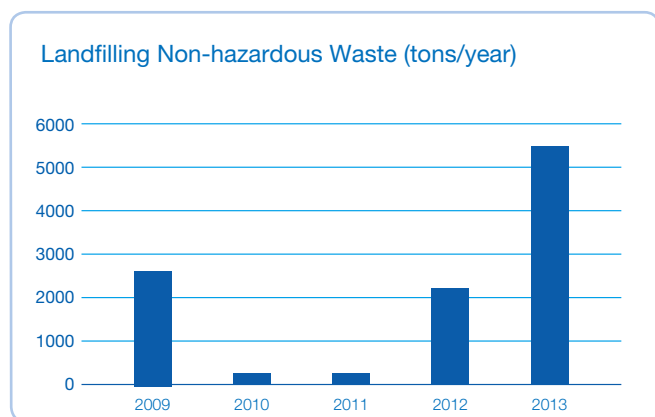


### Discharges to water and landfill

The discharge of Chemical Oxygen Demand (COD), which is an indicator of wastewater pollution by organic substances, increased from 120 tons in 2012 to 159 tons in 2013. This was mainly due to the commissioning of DSM Sinochem Pharmaceuticals Yushu, which resulted in an increase of 39 tons of COD.



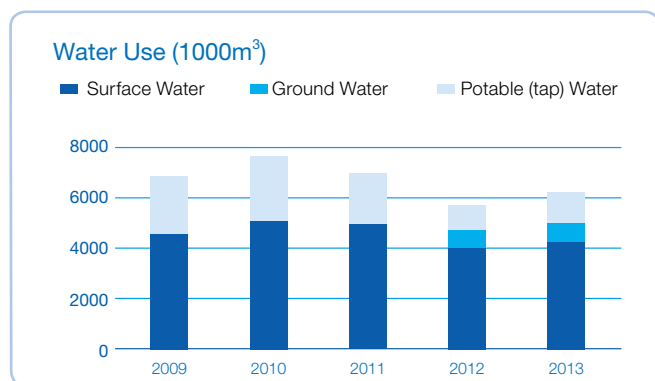
The discharge of non-hazardous waste to landfill sites increased from 2,172 tons in 2012 to 5,414 tons in 2013, which happened mainly because DSM Sinochem Pharmaceuticals in Yushu significantly increased waste-to-landfill levels. Meanwhile, at DSM Fibre Intermediates in Nanjing (China) a significant correction was made to the number reported in previous years, as the facility had erroneously included construction waste in this category. This resulted in lower levels of landfill discharge being reported.



**Water use**

DSM's water policy is to minimize the adverse effects that its operations may have on the quality and quantity of available water in the regions where it operates. The water policy is the basis for the DSM roadmap to sustainable water management.

DSM's global water use is divided into surface water, groundwater and potable (tap) water. Total water use by DSM China increased from 5.8 million m<sup>3</sup> in 2012 to 6.2 million m<sup>3</sup> in 2013. The increase was to a large extent due to higher production levels at some sites in China.



**First Site of DSM China selected for Full Water Risk Assessment (WRA)**

Water risk assessments (WRA) began in 2012 and continued in 2013, focusing on water scarcity areas, as well as on locations with a relatively large contribution to DSM's discharge of pollutants (COD, nitrogen or phosphorus) or to water consumption. These assessments give DSM a clear overview of its impact on water scarcity and pollution at a local level. They also provide indispensable insight into potential improvements that will enable DSM to achieve its 'no adverse effect' policy. There are a number of smaller sites where water scarcity may occur for a few months each year, but the impact of these sites has been shown to be relatively small, as they consume less than one percent of available fresh water sources. On the other hand, there are some larger sites where the risk of water scarcity is low, but DSM's potential impact is more significant. At these sites, DSM has prepared reduction plans for water consumption.

In May 2013, the DNP Xinghuo site became the first site of DSM China to finish a full-scale Water Risk Assessment. During the assessment, six main aspects of water balance, targets 2015, stakeholders, value chain, governance and business risks were reviewed, and the risks and opportunities were identified. Based on the assessment results, the site now defines its priorities and draws a plan to mitigate potential risks. The resulting action plan of the site will also be connected to their Business Group roadmap.

**DNCC Line 2 Project: Green design and safe construction**

The successful startup of a 2nd production line for Caprolactam (CPL) in 2013 marks a new era of DSM Nanjing Chemical Company Ltd., as the doubled capacity made it the largest CPL production base. During the two-year construction period, 5.5 million man-hours of safety has been achieved, even during peak construction time when some 3,000 employees and contractors were working on the site. This was achieved thanks to the strict management of the project team, as well as compliance with requirements of all safety rules and Life Saving Rules (LSR).

The new line 2 combines several state-of-art technologies. In addition to the advanced DSM HPO process, energy savings and environmental issues were taken into consideration from the very beginning of the design phase.





DNCC celebrated the successful startup of a 2nd production line for Caprolactam.

Rules for government environmental impact assessments require that new capacity cannot result in additional pollution. Therefore, DNCC installed a new waste water treatment plant, a waste water effluent recovery facility, and a new VOC incinerator. These devices can effectively reduce the total waste water and waste gas of both lines to a level even lower than for just Line 1 in the past.

When both lines are fully in operation, they consume 37% less fresh industrial water and 20% less energy than before the construction of line 2. At the same time, the amount of effluent waste water is 58% lower. All of this contributes to DSM's global planet targets on reducing COD, NOx discharge and energy savings.

#### Environmental Protection award for DSM's Xinghuo Site

In 2013, the DSM Xinghuo site, one of the biggest DSM Manufacturing sites in China, won the Shanghai Municipal Government's award for "Excellent Unit on Energy Conservation and Emission Reduction during Shanghai's 11th Five-Year Plan period". The Shanghai Municipal government presents this award to those companies who have made tremendous contributions to support Shanghai in exceeding the emission reduction targets set by the state.

The DSM Xinghuo site has made great efforts in energy conservation and emission reduction. The site constantly looks at opportunities for improvement, fulfills its corporate social responsibilities, and meanwhile delivers its promises on volume, schedule, quality, environment, health and safety. The site has organized a series of activities to anchor the concept of energy saving among its workforce, and has implemented several projects such as optimizing a chiller to increase its efficiency, or adding a transducer on high power equipment.

In 2013, the Xinghuo site introduced the LEAN concept, together with the DNP Achieving Competitiveness Together (ACT) project launched in 2012. These programs aim to deepen awareness for the concept of sustainability and to find more opportunities for improvement in conserving energy, reducing emissions and the impact on the environment for the site, while staying competitive.

#### Cleaner Production Program in DCR Kunshan site

In 2013, the DSM Resins Kunshan site has successfully completed a Cleaner Production Program. It managed to reduce energy consumption per ton of finished product by 3 percent to 3.43 Gigajoule (GJ), compared to 3.54 GJ in 2012. At the same time, the generation of hazardous waste was reduced by 38 percent to 0.26kg per ton of finished product in 2013, vs 0.42kg 2012. Moreover, during the program, a number of workshops and other activities were organized in order to raise employees' awareness about the concept of saving energy and a low-carbon lifestyle. In recognition of these environmental efforts, the local Environmental Protection Bureau granted the site an environmental certificate.



*“We need to pay more attention to market trends and demands. Market-oriented innovation will create competitive advantage for our products, so that we can serve our customers more effectively.”*

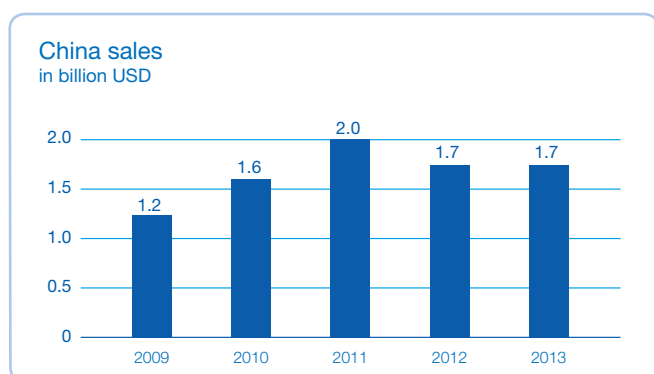
Zheng Degang, business development manager of Dyneema, is one of the inventors of a Ballistic Helmet containing Dyneema<sup>®</sup> Tape. The invention, granted innovation award by the Intellectual Property department, is a Ballistic Helmet containing Dyneema<sup>®</sup> fiber, which could enhance protection while reducing the weight.



# Profit in 2013

Sales in China continued to represent an important contribution to DSM's total sales in high growth economies. The company has stated its ambition to increase sales in China towards USD 3 billion by 2015, and it continues to invest in the country. In 2013 DSM China sales remained stable at USD 1.7 billion, although they were still affected by lower prices for caprolactam at DSM Polymer Intermediates.

China has continued to be an important strategic investment focus area, as DSM establishes promising opportunities for growth in the years ahead. In 2013, DSM Nanjing Chemical Company doubled its capacity for caprolactam, with a new facility that began commercial production in early 2014. DSM also began construction on a new state-of-the-art animal nutrition R&D center near Beijing that will significantly contribute to the nation's food safety program for swine and poultry. A 29 percent stake acquired in Yantai Andre Pectin Co. Ltd, the producer of texturing ingredients, was another important step towards harvesting opportunities from this megatrend.



## New acquisitions and partnerships in China in 2013

### *Andre Pectin*

DSM has acquired a 29 percent stake in this China-based manufacturer of apple and citrus pectin, a key food hydrocolloid providing texture, as well as pectin related food products. Andre Pectin is the only significant pectin manufacturer in Asia with premier access to the world's fastest growing specialty food ingredients market. DSM's investment in Andre Pectin synergistically combines with the previously acquired gellan gum assets based in China and creates a China-based hydrocolloids growth platform, in line with DSM's Continued Value Growth strategy for the Nutrition cluster.



At the new joint venture opening ceremony in Yantai on September 26, 2013, Zhang Anming (right), former president, Yantai Andre Pectin Co. Ltd. handed over the company seal and certificates to Gong Xiangwei, DSM Food Specialties Regional President Asia and now also general manager of Yantai Andre Pectin Co. Ltd.

### *Animal health premix businesses in China*

DSM acquired Bayer's China custom and standard vitamin premix business in Chengdu, Sichuan Province. This acquisition further strengthens DSM's vitamin premix brand ROVIMIX®'s position in the Chinese market.

In China, DSM's animal nutrition business currently operates five vitamin blending facilities, and the acquisition spells significant implications for future development of DSM in China, while at the same time broadening direct sales, and helping to improve existing distribution channels.

# Bright sciences into brighter living - Business cases

At DSM, innovation is about turning 'Bright Science' into 'Brighter Living'. This 'Bright Science' is not just about great ideas, state-of-the-art technology and high-tech laboratories. It is about finding and integrating the best sustainable and commercially viable solutions to market and customer needs in order to create profitable growth.

DSM creates solutions that nourish, protect and improve performance, using its unique competences in Life Sciences and Materials Sciences. This way DSM helps create a healthier, more sustainable and more enjoyable way of life.

In the following report, six business cases are presented illustrating that DSM is making efforts to create innovative and sustainable solutions to our customers in China to meet the local market needs.

## Innovative and green reinforcement fiber for optic cables

Trevo™ is a fiber specifically developed for next-generation optic cables by DSM ICD. Trevo™ is lightweight and features high strength as well as high resistance to abrasion and chemical corrosion. It is particularly resistant to deformation. It provides stronger protection to the optic fiber inside the cable, which is traditionally prone to break during the installation process due to strong bends or overstretch.

During development, ICD has collaborated with leading optic cable companies in China to overcome difficulties in the production of upgraded versions of optic cables. The new cables made with Trevo™ HM have then successfully passed rigorous testing and trials by one of the end-users Huawei Technologies, a global ICT services provider.

The Trevo™ HM fiber reduces the weight of the cable. It also extends the life span of optic cables. Less materials used and longer life span of optic cables means less ecological footprint. Trevo™ HM also helps to reduce the diameter of the cable by 40%. As the existing space inside municipal conduits limits the number of cables to be laid, the number of cables in the conduit can be increased by almost three, which in turn greatly increases the network bandwidth.

When burning, Trevo™ fiber will only produce CO<sub>2</sub> and water without any harmful or poisonous gas, making it harmless to human health and the environment. The eco-friendly feature enables Trevo™ HM fiber stand out over other conventional materials and meeting the environmental protection trend of optic cable industry.



Trevo™ featuring lightweight and high strength is a fiber specifically developed for next-generation optic cables.



## More and better chicks

Nowadays consumers are paying greater attention to the safety of animal products. The recent H7N9 bird flu outbreak exposed the risks of old-style chicken farming and hit the poultry industry in China. Farmers need therefore more efficient solutions that ensure their chickens healthy and strong. DSM's ROVIMIX® MaxiChick® help farmers to have more and better chicks, then help them to mitigate the difficulties in the market.

DSM's chicken feed additive ROVIMIX® MaxiChick® significantly improves

chickens' fertility and strength and helps farmers get more and better chicks. It is the patented combination of two scientifically proven DSM products: Hy-D®, a vitamin D3 metabolite and Carophyll® Red, a carotenoid. Both substances complement each other to boost the productivity of the breeder flock. As both university and field studies show, when using MaxiChick®, 2-4 more first quality chicks per housed hen could be produced.

Hy-D® enhances better mineral metabolism and strengthens chick's immune system. More stronger chicks deal better with infectious challenges. Carophyll® Red works as an effective antioxidant to enhance the survival chances of the embryo. It thus improves the fertility of hens and roosters. The European Food Safety Authority (EFSA) has confirmed the safety and efficacy of Carophyll® Red.

ROVIMIX® MaxiChick® is a further example for DSM's innovative capability and constant drive to improve the efficiency of animal breeding. This innovative solution improves the quality of chicks and provides poultry farmers with substantially increased value.





### Healthy diet with fish oil-enriched cooking oil

Fats or fatty acids as they are called in nutrition terms are an essential part of the human diet. It is important to consume the right amount and right kind of fatty acid. In China, the diet of many people has greatly changed as a result of economic development and prosperity. The intake of saturated fatty acids has increased while the consumption of the healthier polyunsaturated fatty acids has decreased. Especially of Omega-3 polyunsaturated fatty acids are needed for a normal metabolism. They cannot be synthesized by the human body. Inadequate intake can lead to various chronic conditions, for example atherosclerosis and cardiovascular diseases. According to the latest China Nutrition and Health Survey of 2002, the average personal daily intake of the omega-3 fatty acids Docosahexaenoic Acid (DHA) and Eicosapentanoic Acid (EPA) are only 37,6 mg far below the recommended amounts of around 160 mg per day.

DSM is the world's largest supplier of DHA and EPA for food fortification, with 13 production sites worldwide and several R&D centers for DHA and EPA. DSM has long been committed to consumer education about the importance of these fatty acids, and also supports food companies in developing nutritionally balanced products in order to help improving the health of Chinese consumers.

One good example for a way to enhance the intake of Omega-3 polyunsaturated fatty acids is the use of fish oil. Fish oil is naturally rich in DHA and EPA and can improve the dietary fatty acid imbalance in China. The traditional way of fish oil intake is through soft capsules, which is relatively expensive and only covers a small percentage of the population.

Fortified cooking oil is a much more convenient choice as Chinese people use oil for cooking every day. DSM has been producing fish oil containing DHA and EPA for many years. Together with Singaporean agribusiness company Wilmar International, DSM has now successfully developed a fish-oil-enriched cooking oil specifically for China, which was launched in the country under the brand name Arawana® Blended Oil Enriched with marine Fish Oil.

The Arawana® Oil has a good taste and if it is used regularly and combined with DHA and EPA intake through the existing diet, the product leads to the recommended daily amount. In 2013, Arawana® Blended Oil Enriched with marine Fish Oil won the Vitafoods Asia Nutrition Innovation Award as well as the Nutrition Innovation Award at the Natural & Nutraceutical Products China (NPC).



DSM developed a fish-oil-enriched cooking oil specifically for China containing DHA and EPA.

### Countering the health risks of air pollution through nutritional solutions

Fine dust particles, also called PM2.5 in reference to their diameter, pose one of the biggest threats of air pollution to human health and well-being throughout the world. These fine particles can penetrate deep into the lungs, and often carry toxic substances that stick to them. In China, PM2.5 levels in urban areas often reach levels far above the national standard, which has prompted the government to fight air pollution with various measures. This requires many coordinated efforts and resources including education, legislation and law reinforcement.

Recent advances in scientific research indicate that there are ways to help humans fend off some health risks posed by PM2.5. For example, nutrition ingredients show some promising effects in preventing PM2.5-induced pathological and biochemical disorders. In response to public health requirement and based on the principle of evidence-

based nutrition, DSM has launched a conceptual framework for countering health effects of air pollution through the use of nutritional solutions, with a focus on the benefits of fish oil and vitamins.

For example, fish oil prevent the reduction of the heart rate variability caused by PM2.5. Meanwhile, vitamin B, E and C boost humans' anti-oxidant capability which can be lowered through breathing in PM2.5. These simple, effective and inexpensive nutritional solutions can help people to at least minimize some of the harm accompanying PM2.5 exposure.

This case demonstrates DSM's commitment to minimize public health risks through a nutritional approach. After the first presentation given at a conference hosted by the International Life Science Institute (ILSI) in September 2013, DSM's nutrition solution is gradually becoming widely accepted.



DSM is a leading manufacturer of resins for powder coatings, the most environmentally-friendly form of coating.

### Abating VOCs in indoor air with sustainable coating powder

Volatile Organic Compounds (VOCs) are a health hazard most acute in indoor air. They can evaporate from new furniture, wall coverings or office equipment such as photocopying machines. VOCs can lead to respiratory diseases, allergies or even cancer and affect the immune system, especially in young children.

Innovative coatings are an important contributor to reduce VOCs in indoor air. DSM has been a leading manufacturer of resins for powder coatings, the most environmentally-friendly form of coating. Powder coatings do not need solvents and do not emit any VOCs. Compared to solvent coatings, they also have a carbon footprint smaller by 40%-60%. Because of their special appliance process powder coatings form a skin which is tougher than conventional paint. It is often used for coating metals such as household appliances, window frames or aluminum extrusions. It also provides very strong protection for substrates.

In China, DSM Powder Coating Resin is now used in metal furniture, fences, window frames or domestic appliances. Through the cooperation with China's large coating suppliers, DSM's powder coating resin brand Uralac® EasyCure™ has been approved by both the largest Chinese appliance maker and the largest window frame manufacturer. In China's window frames industry, DSM Powder Coating Resin is considered a guarantor for good quality and high weather resistance.

Moreover, DSM is leading the way in developing a resin which allows the coating powder to be cured with lower temperature which would lead to energy savings and a further reduced carbon footprint. By using DSM low-temperature cure resins, powder coating suppliers can, for instance, help large furniture makers to achieve zero VOC emissions in the substrates of medium-density fibreboards (MDF), and more importantly, zero emissions in final product - furniture as well.

### DSM's Stanyl® ForTii™ enables LOTES breakthrough in memory connectors for servers

In electrical & electronics, miniaturization, weight reduction and speed of innovation are key. DSM is supporting customers to make thinner designs and integrate functions using materials that have excellent processing properties and are halogen-free and therefore contribute to reducing the environmental impact of e-waste. For example, LOTES, Taiwan's leading producer of memory connectors, is using for the housings of their new DDR4 generation of connectors suitable for wave and infrared reflow soldering.

Stanyl® ForTii™, a new halogen free grade for terminal blocks, meets stringent flame retardant standards combined with outstanding thermal and mechanical performance, and results in components with significantly lower carbon footprints than versions made in alternative materials. Stanyl® ForTii™ gives customers the opportunity to re-consider their designs without any material-driven compromises.



Stanyl® ForTii™, a new halogen free grade for terminal blocks, has outstanding processing properties with lower carbon footprints.

# External recognitions in 2013

Various DSM sites across China are being recognized for their exemplary work in sustainability, for example in the field of Safety, Health and Environment. Local DSM units are being recognized by their host governments as models for safety, innovation or environmental protection. Listed below are the awards received by DSM in China.

## Product/Innovation Award

- DSM (China) Ltd. won the first “Nutrition Innovation Gold Award” issued by the Chinese Nutrition Society.
- DSM’s Stanyl® TC was awarded the Silver Prize “Best Thermo Conductive Material of 2013” by GG-LED, a professional magazine/network platform, focusing on LED industry in China.
- DSM’s Arnitel® VT/Akulon® was named “China Sustainable Package Technical Award” for sausage casing in the 4<sup>th</sup> China Package Technology Innovation and Sustainability Forum.
- DSM (China) Ltd. was named the “Top 10 Coatings Raw Materials Supplier 2013” by HC360, a recognized industry trade media.
- Shandong ICD High Performance Fibres Co., Ltd. received the first prize of the “2013 Technology Innovation Company” by Laiwu local government.
- Shandong ICD High Performance Fibres Co., Ltd. received the “Shandong Province Patent Award Second Prize” by the Shandong Intellectual Property Bureau.
- Shandong ICD High Performance Fibres Co., Ltd. received “Laiwu Patent Award” by Laiwu local government.

## Sustainability and Corporate Social Responsibility Award

- DSM (China) Ltd. won the title of “2012 Golden Bee Award · Leading Enterprises Award” in the 8<sup>th</sup> Corporate Social Responsibility International Forum in June 2013.
- DSM (China) Ltd. was awarded as one of “Top 10 Enterprises in Sustainability” and Li Xuedai, DSM Engineering Plastics Business Director Greater China, was awarded as one of “Best 10 Personage” in plastics industry by HC360, a recognized industry trade media.
- DSM Vitamins (Shanghai) Co., Ltd. received “CSR Award” from Shanghai Xinghuo Development Zone Management Committee.

## Safety, Health and Environment Awards

- DSM Nanjing Chemical Corporation (DNCC) received the highest Blue Grade for its environmental performance as certified by the Jiangsu provincial Environmental Protection Bureau.

- DSM Nanjing Chemical Corporation (DNCC) was recognized as “Nanjing 2013 Safety On-Target Company” by Nanjing Administration of Work Safety.
- DSM Engineering Plastics (Jiangsu) Ltd. (DEPJ) received named as “Advanced Production Safety Company of 2013” by the Jiangyin New High-Tech Zone Committee.
- DEPJ was also honored as “Model Company in Labor-Capital Relationship of 2013” by the Jiangyin Committee for a Harmonious Labor-Capital Relationship.
- DEPJ was certified as a Safety Standardization Grade II company by the Jiangyin Administration of Work Safety.
- DSM Vitamins (Shanghai) Ltd. was rewarded as “Excellent Unit on Energy Conservation and Emission Reduction during Shanghai’s 11th Five-Year Plan period” by the Shanghai Development and Reform Commission, the Shanghai Municipal Commission of Economy and Informatization, and the Shanghai Environmental Protection Bureau.
- DSM Vitamins (Shandong) Limited named as a “2013 Liao Cheng Safety Culture Good Model Enterprise” by the local government and Administration of Work Safety.
- DSM Vitamins (Shandong) was listed as “2013 Work Safety Outstanding Company” by the Liao Cheng Economic Industry Park Committee.
- DSM Vitamins (Shandong) was honored as “2013 Excellent Company in Fire Prevention” by the local firefighting committee.
- DSM Vitamins (Sichuan) Limited was certified as a Safety Standardization Grade III company by the Chengdu local Administration of Work Safety.
- DSM Vitamins (Changchun) Limited was certified as a Safety Standardization Grade III company by the Changchun local Administration of Work Safety.
- Zhejiang DSM Zhong Ken Biotechnology Co. Ltd has been certified as a Safety Standardization Grade III company by the Jiaxing local Administration of Work Safety.
- DSM Eternal Resins (Kunshan) Ltd. has been rated as “Cleaner Production Company” by Kunshan Environmental Protection Bureau.

## Other Government Awards to the Company

- DEPJ was rewarded as one of “The Best 10 Foreign Invested Companies of 2013” and “The Top 100 Star Companies of 2013” by the Jiangyin municipal government.

- DSM Vitamins (Shanghai) Ltd. The site has also been rewarded as “Fortune 100 of Shanghai Fengxian District” by the Fengxian local government.
- Shandong ICD High Performance Fibres Co.,Ltd. was awarded the “2013 Excellent Contribution to the Economy Award” by the Laiwu local government.

#### Government Awards to DSM employees

- Mr. Yuan Yong, site director of DSM Engineering Plastics (Jiangsu) Ltd, was honored as 2013 Jiangyin Excellent Entrepreneur by the Jiangyin municipal government.
- Mr. Tang Xinyi, Polymerization Plant Manager and Mr. Mei Xiaofeng, Compounding Plant Manager of DSM

Engineering Plastics (Jiangsu) Ltd., were honored as Outstanding Individuals by the Jiangyin local government in 2013.

- Mr. Yang Zhiping, manager of Safety, Health and Environment (SHE) of DSM Nanjing Chemical Company Ltd., was recognized as a Safety Production Exemplary Model worker by the Nanjing municipal government in 2013.
- Mr. Zhang Cheng, maintenance supervisor at DSM Eternal Resins (Kunshan) Ltd, has received the “2013 Kunshan best excellent suggestion” award by the local government; Mr. Xiang Yunfeng, mechanical engineer of the same site, received the “2013 Kunshan best suggestion encouragement” award.

## What still went wrong in China 2013

While DSM strives to continuously improve its performance in all areas of its operations, sometimes things can still go wrong. Despite its strong focus on Safety, Health and Environment (SHE) and on learning from incidents, still happened some incidents there still happened some incidents during past 2013.

The following overview summarizes the recordable injuries and incidents in 2013. In line with DSM's reporting policy, the overview also includes some serious near-misses. These are incidents that did not result in any injury, illness or damage, but had the potential to do so and are therefore used as a learning Opportunity.

- At DSM Sinochem Pharmaceuticals Yushu, a temporary contract or injured his finger when using a mobile convey or belt, loading mycelium bags.
- At DSM Resins & Functional Materials in Zhangbin (Taiwan), an explosion occurred inside a reactor during the first trial of a new recipe. Although none of the substances were new to the process, the change in the sequence of dosing into the reactor led to an unidentified hazardous combination. The disc was ruptured and the glass tube was broken, but fortunately there were no injuries.
- At DSM Fibre Intermediates in Nanjing (China), an employee was hit by a piece of steel falling from a height of 10 meters, but was not injured.
- At DSM Sinochem Pharmaceuticals in Yushu (China), a dust explosion occurred in the packaging area of the site. Fortunately, there were no injuries, but this incident has been classified as a serious near-miss.
- At Dyneema Laiwu, an employee worker had his finger caught between yarn and a roller which caused a slight fracture.
- At Dyneema Laiwu, an employee from the R&D department slightly injured his hand when using a knife while he was conducting an experiment in the production line.
- At Dyneema Laiwu, an employee slightly injured his finger when he tried to cut off yarn with a knife.
- At DSM Nanjing Chemical Corporation (DNCC) , an employee suffered a tail bone fracture when she slipped in the toilet.
- At DFS Yixing, an employee's left leg fell into the rain drainage and got injured when he was unloading raw materials.
- At Jinlin DSM Composite Resins Nanjing, an operator was connecting the vapor return line to the top of the tank truck, when some chemical vapor came out of the hand valve of the top tank truck. This lead to an allergic reaction on the operator's face and his skin.
- At DSM Sinochem Pharmaceuticals Zibo, one employee was conducting a loading job in a truck when the top layers of boxes stacked inside the truck fell down and hit him. He fell down backwards and hit his head at a fork lift.
- At DSM Sinochem Pharmaceuticals Yushu, some surrounding villagers complained about the smell of the plant. The site management team communicated with relevant stakeholders and took measures to reduce the smell successfully.



# Explanation of some concepts and ratios

## PEOPLE

### FI

Frequency Index: a way to measure for safety performance. The number of accidents of a particular category per 100 employees per year.

### LWC-rate DSM own

The LWC-rate DSM own is the number of lost workday cases per 100 DSM employees in the past 12 months:  $LWC\text{-rate} = 100 * (\text{number of LWCs (past 12 months)} / \text{average effective manpower (past 12 months)})$ .

### People+

DSM's People+ strategy will deliver measurably better solutions to improve the lives of people. The company has defined a new People+ framework based on broad stakeholder analyses. The dimensions of health, comfort and well-being, working conditions and community development have been identified as distinct and instrumental categories to measure People+ impact at product level. Based upon the stakeholder input DSM has designed a measurement tool, which will be further developed in collaboration with The Sustainability Consortium, customers and other stakeholders.

### 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:  $REC\text{-rate} = 100 * (\text{number of RECs (past 12 months)} / \text{average effective manpower including contractor employees (past 12 months)})$ .

### SHE

Safety, Health and Environment.

### United Nations Global Compact

A strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption.

### Zero SHE assessment

A zero SHE assessment is a step in the integration process of newly acquired units or new joint ventures. A team led by a corporate SHE manager visits the unit and identifies and assesses the main SHE risks and compliance gaps with the DSM corporate requirements, standards and practices. The team provides recommendations to minimize and control these risks and also identifies good practices that can be of use in other DSM units. During the zero SHE assessment the team elucidates the DSM SHE requirements and supports the unit in formulating and prioritizing the actions in the SHE integration and compliance plan.

## PLANET

### Biofuel

A fuel which is derived from renewable organic resources, as distinct from one which is derived from non-renewable resources such as oil and natural gas.

### Carbon footprint

The impact of a certain activity in terms of the emission of nonrenewable CO<sub>2</sub> to the atmosphere.

### Circular economy

Circular economy refers to an economy that is restorative and in which materials flows are of two types, biological nutrients, designed to reenter the biosphere safely, and technical nutrients, which are designed to circulate at high quality without entering the biosphere throughout their entire lifecycle.

### CO<sub>2</sub>

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.

### Cradle to Cradle®

A holistic economic, industrial and social framework that seeks to create solutions that are not only eco-efficient but also essentially waste free throughout their lifecycle.

### Chemical Oxygen Demand (COD)

COD is an indicator of the degree of pollution of wastewater by organic substances.

### ECO+

ECO+ solutions are products and services that, when considered over their whole life cycle, offer clear ecological benefits (in other words, a clearly lower eco-footprint) compared to the mainstream solutions they compete with. These ecological benefits can be created at any stage of the product life cycle – from raw material through manufacturing and use to potential reuse and end-of-life disposal. ECO+ solutions, in short, create more value with less environmental impact. The qualification ECO+ is based upon internal expert opinions where various impact categories are evaluated. For a growing number of products these expert opinions are supported by Life Cycle Assessments.

### Eco-efficiency

Eco-efficiency is a concept (created in 1992 by 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. DSM applies the concept to its ECO+ program. 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) reduction over volumerelated revenue (VRR)

The GHGE definition is according to the Kyoto Protocol and includes carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. VRR is net sales adjusted for changes in selling prices, exchange rates and the impact of acquisitions and divestments. GHGE/VRR is

one of the ratios in the Long-Term Incentive part of the Managing Board remuneration and relates to a three-year period.

#### LCA

Life Cycle Assessment (LCA) identifies the material, energy and waste flows associated with a product or process over its entire life cycle to determine environmental impacts and potential improvements; this full life cycle approach is also referred to as 'Cradle to Grave'. It is also possible to assess a partial life cycle of a product or process with the most common type being 'Cradle to Gate' which assesses the environmental impacts of a manufacturing process without accounting for use phase or end of life impacts. There are many different environmental impact categories that can be assessed using LCA; at DSM the standard approach is to evaluate the carbon footprint and eco-footprint.

#### 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 United Nations' 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.

#### N

Nitrogen. A mostly inert gas constituting 78% of the earth's atmosphere, nitrogen is present in all living organisms.

#### N<sub>2</sub>O

Nitrous oxide. A gas that is formed during combustion. When emitted to the environment, it contributes to global warming.

#### NO<sub>x</sub>

Nitrogen oxides. These gases are released mainly during combustion and cause acidification.

#### Renewable resources

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<sub>2</sub>

Sulfur dioxide. This gas is formed during the combustion of fossil fuels and cause acidification.

#### VOC

Volatile organic compounds. The term covers a wide range of chemical compounds, such as organic solvents, some of which can be harmful.

## 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.

#### 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 as well as the acquisition of subsidiaries and associates and related cash flows.

#### Cash flow

Cash flow is net profit plus depreciation, amortization and impairments.

#### Core earnings

Core earnings represent profit or loss from continuing operations excluding exceptional items and excluding amortization of intangible assets recognized from the application of purchase accounting for business combinations.

#### 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 total of operating profit plus depreciation and amortization.

#### 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.

#### Operating working capital

The total of inventories and trade receivables, less trade payables.

#### Return on capital employed (ROCE)

Operating profit as a percentage of weighted average capital employed.

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