



# The Novozymes Report 2017

Rethink tomorrow

novozymes 



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A full online version of The Novozymes Report 2017 is available at [report2017.novozymes.com](http://report2017.novozymes.com).





The big picture



# Financial highlights



## 4%

### Organic sales growth

Sales grew by 4% organically and by 3% in DKK. Sales to Food & Beverages and Bioenergy were the most significant contributors to organic sales growth in 2017.



## 27.9%

### EBIT margin

EBIT margin at 27.9% was on par with last year. Excluding the one-time costs relating to layoffs in 2017, the cost associated with the change to the Executive Leadership Team, and the loss relating to the Alumedix divestment, the EBIT margin was ~29%



## 2%

### Net profit growth

Net profit was DKK 3,120 million, an increase of 2% from DKK 3,050 million in 2016. This was driven by higher EBIT and a lower tax rate, but partly offset by the write-down of a financial asset.



## 25.6%

### ROIC

Return on invested capital (ROIC) including goodwill was 25.6%, compared with 25.1% in 2016. The increase was mainly a result of a higher EBIT and a lower tax rate partly offset by higher net investments.

Key figures	2017 realized	2017 outlook*
Sales growth, organic	4%	2-5%
Sales growth, DKK	3%	3-6%
EBIT growth	3%	3-6%
EBIT margin	27.9%	~28%
Net profit growth	2%	2-5%
Net investments excl. acquisitions, DKKm	1,665	1,700-1,900
Free cash flow before acquisitions, DKKm	2,398	2,000-2,200
ROIC (including goodwill)	25.6%	24-25%

\* Outlook guided as of January 18, 2017.

[See more details on performance in Accounts & performance](#)

[Outlook 2018](#)



# Sustainability highlights



## 76,000,000

tons of CO<sub>2</sub> emissions saved

In 2017, our customers saved an estimated 76 million tons of CO<sub>2</sub> emissions by applying Novozymes' products. The savings achieved are equivalent to taking approximately 32 million cars off the road.



## 24%

renewable energy

Energy from renewable sources accounted for 24% of the total energy consumed in 2017. In Denmark, we purchase all our electricity from renewable sources. In March 2017, we also began purchasing all our electricity in Brazil from renewable sources.



## 1.6

frequency of occupational accidents

In 2017, we experienced a decrease in the frequency of occupational accidents to 1.6 per million working hours, which met our target of 2.0 or below. This was driven by a continuous organizational focus on creating a safer and healthier working environment.



## 26%

women in senior management

Novozymes is committed to ensuring equal opportunities and avoiding discrimination in the workplace. In 2017, 26% of senior management (directors and higher) were women. We are on track to meet our target to ensure that 30% of senior management positions are held by women in 2020.

Key figures	2017 realized	2017 target
Estimated reduction in CO <sub>2</sub> emissions through our customers' application of our products, in million tons	76	≥ 72
Water efficiency*	-2%	4%
Energy efficiency*	4%	7%
CO <sub>2</sub> intensity*	11%	9%
Renewable energy	24%	24%
Occupational accidents**	1.6	≤ 2.0
Employee absence	2.1%	≤ 2.0%
Women in senior management	26%	≥ 25%
Customer satisfaction	39	≥ 35
RobecoSAM class rating	Yearbook Member***	Medal

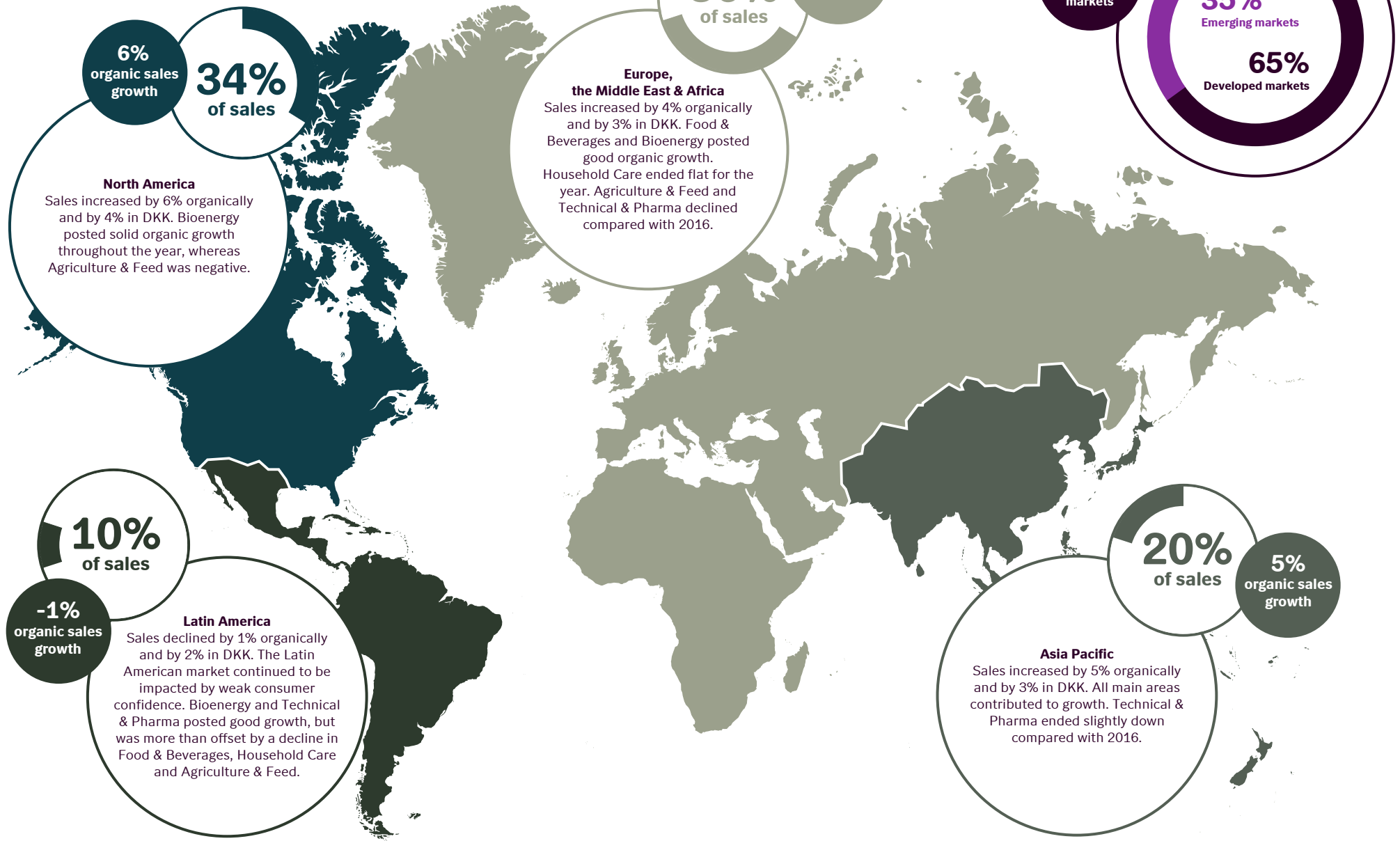
\* Efficiency/intensity is measured by dividing net consumption by gross profit. The improvement is calculated as the relative improvement in efficiency/intensity compared with the base year 2014.

\*\* Per million working hours.

\*\*\* Companies with good sustainability performance that have not received a medal distinction.

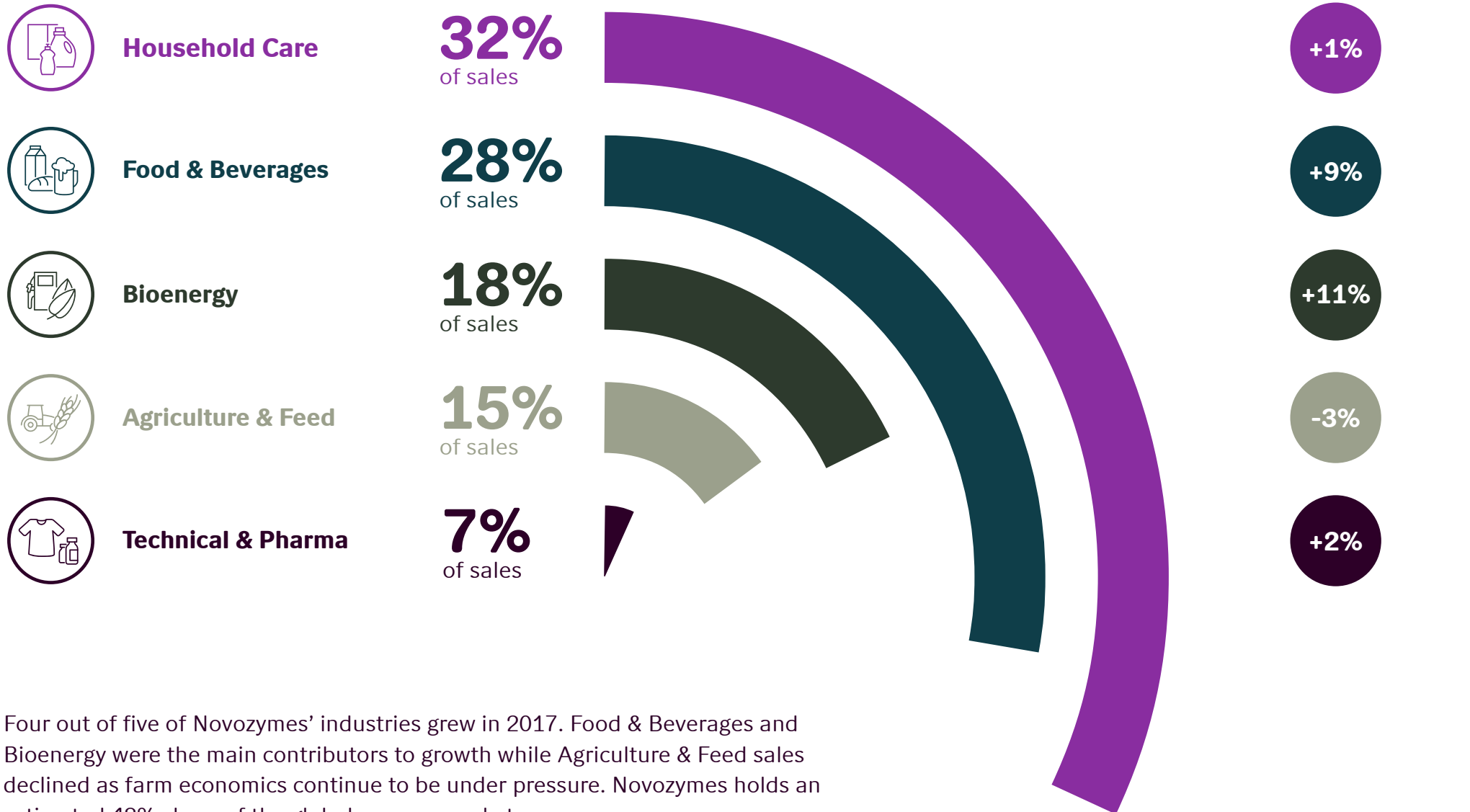


# Sales by geography





# Sales by industry



Four out of five of Novozymes' industries grew in 2017. Food & Beverages and Bioenergy were the main contributors to growth while Agriculture & Feed sales declined as farm economics continue to be under pressure. Novozymes holds an estimated 48% share of the global enzyme market.



# Household Care



## 2017 results

Sales to the Household Care industry increased by 1% organically and were flat in DKK for 2017.

In Europe, the Middle East & Africa, sales were flat for the year. Throughout 2017, we have seen that some large global customers reformulated, while others increasingly focused on performance and boosted their enzyme inclusion. Sales in North America grew over last year after a good pick-up in the fourth quarter.

Sales in Asia Pacific were solid. Throughout the year, growth in Asia Pacific and especially China has enjoyed support from increased enzyme inclusion in the growing liquid segment. This positive development has been enabled by new innovation that has improved the stability of enzymes in liquid detergents.

In Latin America, sales ended down, mainly due to continued weak market conditions.

Sales for automatic and hand dishwash continued to deliver good growth, driven by innovation and sustainability, partly from increased demand for phosphate-free solutions.

The first shipments of enzymes from the freshness & hygiene platform occurred in the fourth quarter. Sales from the platform are expected to pick up over 2018 and impact sales growth in the second half of 2018.

## Key industry trends

1. Growth in the liquid and unit dose market, driven by consumer convenience and stronger investments in these categories
2. Rising demand for Household Care solutions tailored to emerging-market needs such as hot and humid conditions and demand for mild hand-washing alternatives
3. Continued pressure on certain global customers leading to formulation changes

## 2018 outlook

In Household Care, sales growth will be driven by increased penetration in emerging markets, where we intend to tap into consumer trends with our innovative enzymes for liquid detergents. The first sales from the freshness & hygiene platform are expected to increasingly contribute to growth from the second half of 2018. We expect the reformulation focus from some of our large customers to continue, especially at the beginning of the year, which puts a dampener on growth. While the developed markets continue to be dynamic, innovation, performance and differentiation remain in focus for both existing and new customers.

## Product launches in 2017

**Medley® 2.0** – The second generation of our multienzyme solution for laundry detergents. This plug-and-play solution ensures strong, stable wash performance and stain removal, as well as cost savings due to easier handling for detergent producers.

**Progress® excel** – A new premium liquid detergent enzyme that enables superior wash performance at all temperatures.



**Progress® In** – A new enzymatic solution to help detergent producers in emerging markets develop better detergents. Progress® In is Novozymes' first product designed specifically for the broad market of unpenetrated detergents.

**Freshness & hygiene** – We have launched the first groundbreaking solution from the freshness & hygiene platform in Household Care. It deep cleans laundry by removing complex body soils that build up over time and are an underlying cause of malodor and textile graying.



Read more about our Household Care solutions on [Novozymes.com](https://www.novozymes.com)

# Food & Beverages



## 2017 results

Food & Beverages sales grew by 9% organically and by 8% in DKK for 2017.

Throughout 2017, Food & Beverages delivered solid, broad-based growth. Nutrition and starch were the most significant growth contributors. Sales in baking performed well despite headwinds in the US market for freshkeeping enzymes. Throughout 2017, we have implemented price reductions to position the US baking business ahead of a patent expiration in late Q1 2018. Baking enzyme sales in Europe, the Middle East and Africa performed well and more than offset the impact from the North American price reductions.

Sales of enzymes for nutrition were strong in 2017, supported by robust uptake of recent years' innovation. This was coupled with increased demand for lactose reduction in dairy products and gains in enzyme market share within infant nutrition.

Sales for starch conversion were solid across geographies. This was driven by good traction from innovation as well as a positive impact from favorable corn prices relative to sugar in the Chinese starch market.

## Key industry trends

1. Consumer focus on health, wellness and natural products
2. Volatile raw material costs and focus on production process optimization
3. Customers consolidating operations in order to increase overall efficiency

## 2018 outlook

In Food & Beverages, organic sales growth is expected to be driven by continued step-up in commercial presence, especially in the emerging markets, as well as by new products. Baking is still expected to be impacted by price reductions in the North American freshkeeping market, while sales are expected to perform well in other markets. Enzymes for low-lactose dairy products are expected to continue their positive growth trend. In general, we expect continued good growth across industries.



Read more about our Food & Beverages solutions on [Novozymes.com](http://Novozymes.com)

## Product launches in 2017



**Frontia®** – A new technology for grain-milling customers that delivers better yields and reduces energy consumption in wheat- and corn-milling operations.



**Palmora®** – Our first solution for the palm oil industry, which improves yield and plant performance for palm oil producers.

**“We need to produce 70% more food in 2050 than today to feed a growing world population. Our enzymes are used to reduce food waste, replace food additives and improve the quality of food,” says Andy Fordyce, Executive Vice President, Food & Beverages.**



# Bioenergy



## 2017 results

Bioenergy sales grew by 11% organically and by 8% in DKK compared with 2016.

The good performance in 2017 was driven by Novozymes' broader product portfolio and strong focus on tailoring process-specific solutions to individual customer needs. Sales of enzymes for conventional biofuels in North America were supported by increased production of ethanol, estimated to be 2-3% higher compared with 2016. While production grew in 2017, the US ethanol inventory level remains high, and producer margins are weak. Other geographies posted good growth but represent a smaller proportion of total Bioenergy sales.

Sales of enzymes for biomass conversion contributed marginally to Bioenergy sales growth in 2017.

## Key industry trends

1. Growing calls for CO<sub>2</sub> reduction in the transportation sector driving demand for ethanol
2. Political push in favor of biofuels in several regions
3. Volatility in commodity prices, affecting customer margins

## 2018 outlook

In Bioenergy, organic sales growth is expected to be driven mainly by new product launches and increased penetration from innovation.

We expect US ethanol production for 2018 to be roughly on par with 2017, but note that US ethanol inventory levels remain high. Good sales development is expected to continue, as technology introduced over the last 18 months is adopted in the marketplace.

Yeast is added to the product portfolio early 2018 and will contribute to growth. Sales of enzymes for biomass-based ethanol are expected to increase, but make up a small proportion of overall Bioenergy sales.

## Product launches in 2017



**Spirizyme® T** – An advanced suite of glucoamylases that free up residual sugar in corn so that it can be fermented into ethanol, thereby increasing ethanol yield.

**“Novozymes’ products for Bioenergy convert plant materials and waste to biofuels that reduce CO<sub>2</sub> emissions by 50-90% compared with gasoline,” says Tina Sejersgård Fanø, Executive Vice President, Agriculture & Bioenergy.**



Read more about our Bioenergy solutions on [Novozymes.com](https://www.novozymes.com)

# Agriculture & Feed



## 2017 results

Agriculture & Feed sales declined by 3% organically and by 4% in DKK compared with 2016.

Sales of microbes to the agricultural industry declined, primarily due to slow pick-up in demand towards the end of the year. Farm economics continue to be under pressure and impact sales negatively. In The BioAg Alliance with Monsanto, focus is on the development and rollout of new products as well as on expanding into new regions to drive long-term growth. The pipeline is making very good progress.

Animal health and nutrition organic sales growth rates in 2017 were on par with the year before due to somewhat lower end-market demand for feed enzymes. Animal health sales continued to develop positively, albeit from a low base, as products are rolled out in the marketplace.

In 2017, Novozymes recognized DKK 202 million of deferred income as revenue, compared with DKK 194 million in 2016.

## Key industry trends

1. Consumer focus on health, wellness and natural products
2. Sensitivity to fluctuations in commodity prices among farmers
3. Consolidation of large agricultural companies

## 2018 outlook

In Agriculture & Feed, organic sales growth is expected to be driven primarily by good growth in BioAg, but animal health and nutrition is also expected to deliver growth. New product launches will benefit sales, especially in the second half of the year. The changed sales pattern and shift of sales from the first to the second half of the year that has been ongoing over the past years should now largely be completed. We will continue to monitor the potential acquisition of Monsanto by Bayer, but currently do not expect this to have implications for our BioAg business in 2018. Sales to the agriculture-related markets are subject to some uncertainty, due primarily to global farm economics.

Novozymes expects to recognize around DKK 170 million of the deferred income in BioAg as revenue in 2018. Deferred income does not impact the calculation of organic sales growth rates; it impacts realized sales growth in DKK and has no cash flow impact.

## Product launches in 2017



**Acceleron® B-200 SAT** – By enabling additional upstream treatment in soybeans, this enhanced isoflavonoid stimulates beneficial microbe growth in the soil and improves nutritional uptake, enhancing plant health.

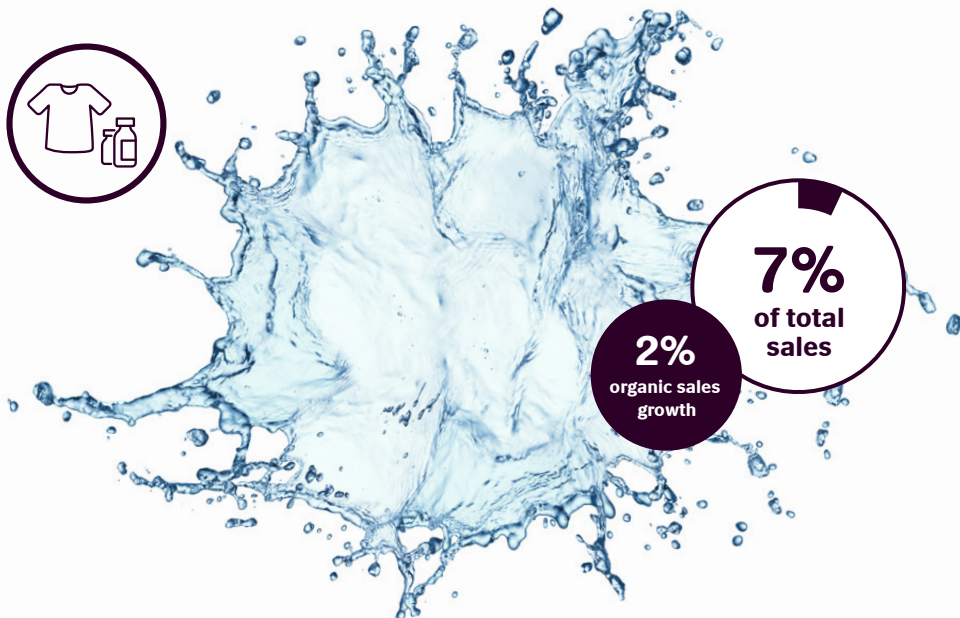
**“We find enzymes and microbes in nature that help farmers produce more sustainable food. Our products can reduce use of antibiotics in animal farming and lower phosphate emissions to the environment. They increase crop yields and replace pesticides and fertilizers,” says Tina Sejersgård Fanø, Executive Vice President, Agriculture & Bioenergy.**



Read more about our new collaboration in probiotics in Targets



# Technical & Pharma



## 2017 results

Sales to the Technical & Pharma industries were up 2% organically and declined by 3% in DKK compared with 2016. Organic sales growth was mainly driven by Pharma.

In December 2017, Novozymes divested Albumedix, its stand-alone pharma entity which was separated from Novozymes in 2016. After a careful review, it has been concluded that the entity no longer benefits from being part of Novozymes. A good future ownership solution for Albumedix has therefore been found, with Novozymes retaining 8% ownership of the company.

Novozymes realized a net loss of DKK 66 million relating to this divestment.

## 2018 outlook

We expect Technical & Pharma to contribute to overall organic sales growth. Technical & Pharma is impacted by the divestment of Albumedix. The divestment will not impact organic growth. Looking ahead, the divestment will reduce some of the quarterly lumpiness in sales.

## Key industry trends

1. Continuous focus on process optimization and cost reduction
2. Water scarcity driving demand for solutions that reduce water consumption, improve water quality and clean wastewater

## Cleaner water for all

Solving the world's water problems presents a monumental challenge for society. As part of its Sustainable Development Goals (SDGs), the United Nations has identified Clean Water & Sanitation as Goal 6, and also recognized that water is the key to unlocking progress in several of the other SDGs.

At Novozymes, we are committed to finding biological answers for better lives in a growing world. We believe that some of these answers can ensure clean water and reduce pollution in rivers and oceans. We are working to reduce water consumption and pollution by industrial processes. Building on our current knowledge and technologies, we decided to initiate a more dedicated innovation program targeting the water and wastewater markets, because we believe there are further untapped opportunities in this area.

**In essence, we are exploring how biotechnological solutions can be used in water treatment. For example, our enzymes and microorganisms could be used for:**

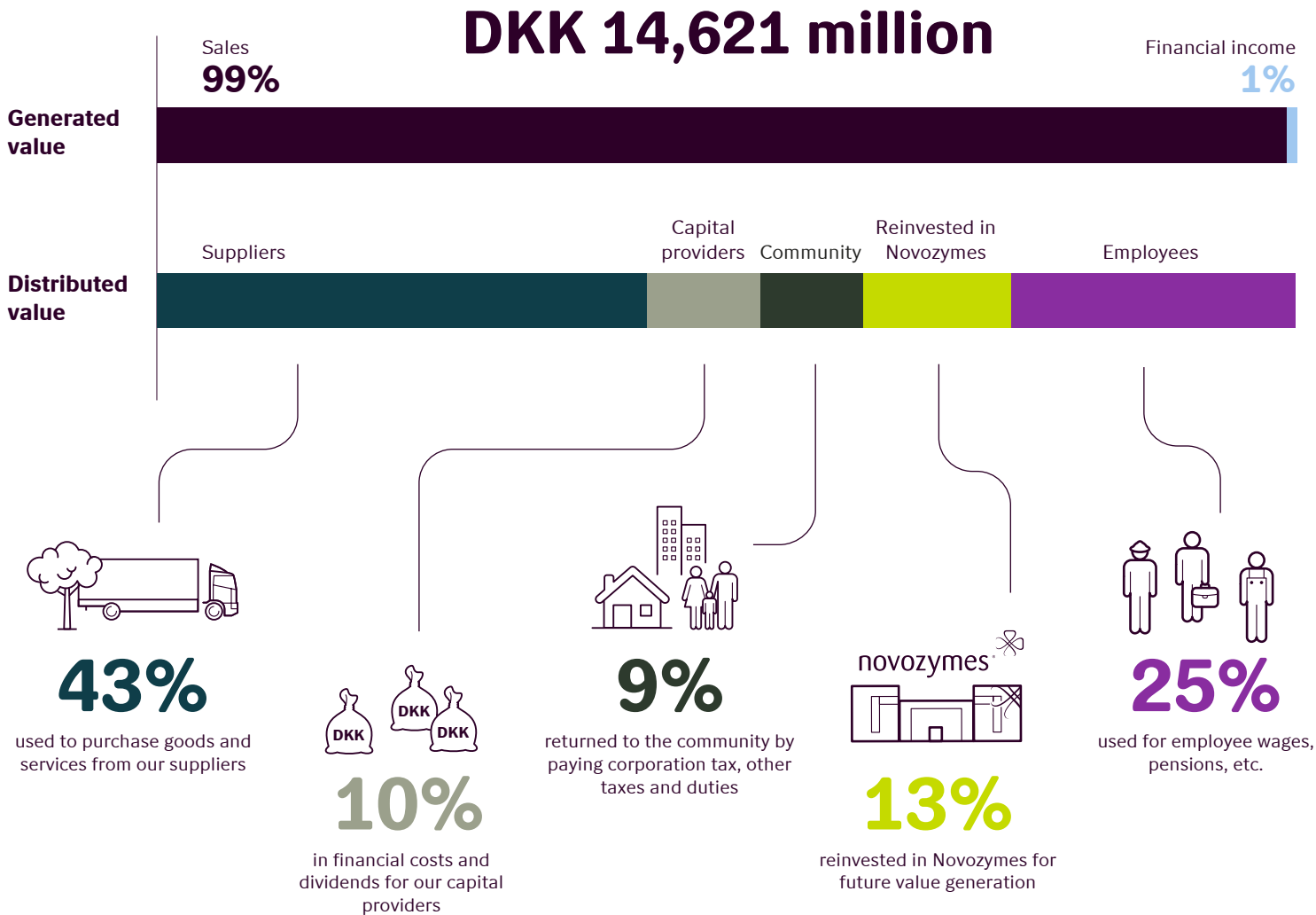
- Cleaning fouling in water treatment systems
- Degrading compounds in process water and wastewater
- Removing and recovering nutrients from wastewater
- Generating energy, such as biogas, from wastewater

In addition to our own research, we are working to establish strong partnerships and connectivity to innovation environments in relation to water. Together with UNICEF and Grundfos, we launched the HelloScience open innovation platform in 2017. Its purpose is to find new answers to some of the world's most pressing water challenges.



Read more about HelloScience on [HelloScience.io](https://www.helloscience.io)

# Economic contribution



In 2017, Novozymes generated value of DKK 14,621 million. 87% of this amount was returned to society. The remaining 13% was reinvested in Novozymes to develop the company, and ensure competitiveness and future value generation for distribution among key stakeholders.

In addition to the 10% returned to capital providers, Novozymes bought back shares worth DKK 2 billion in 2017.

### A positive tax contribution

Novozyymes' overall tax strategy and transfer-pricing policy support a positive tax contribution to society and governments in the countries in which Novozymes operates. Novozymes continuously works to fulfill its tax obligations in the countries where it operates. We seek to obtain a competitive tax level in a fair and responsible way, and with full regard to national and international laws and regulations. Besides taxes, our economic contributions include duties, VAT, employee taxes, employee pension and benefit programs, procurement from local vendors and job creation.

In 2017, Novozymes incurred corporate income taxes, and other taxes and duties that came to approximately DKK 1,375 million. In addition, Novozymes collected and withheld tax contributions on dividends and wages totaling approximately DKK 1,375 million. Novozymes' total tax contribution therefore amounted to approximately DKK 2,750 million, compared with approximately DKK 2,725 million in 2016.



# Five-year summary

DKK million	2017	2016	2015	2014	2013
<b>Income statement</b>					
Revenue	14,531	14,142	14,002	12,459	11,746
Gross profit	8,413	8,126	8,129	7,149	6,716
EBITDA	5,114	4,960	5,011	4,400	3,639
Operating profit / EBIT	4,047	3,946	3,884	3,384	2,901
Financial items, net	(157)	(34)	(257)	(84)	(134)
Net profit	3,120	3,050	2,825	2,525	2,201
<b>Balance sheet</b>					
Total assets	18,373	18,659	17,791	18,426	16,506
Shareholders' equity	11,267	11,745	11,593	11,280	11,066
Invested capital	12,880	12,584	11,891	10,535	11,871
Net interest-bearing debt	1,642	990	437	(716)	805
<b>Investments and cash flows</b>					
Cash flow from operating activities	4,063	3,840	3,339	4,525	2,599
Purchases of property, plant and equipment	1,593	1,076	968	703	762
Net investments excluding acquisitions*	1,665	1,188	1,015	715	783
Free cash flow before net acquisitions and securities	2,398	2,652	2,324	4,229	1,816
Business acquisitions, divestments and purchase of financial assets	3	161	242	14	640
Free cash flow	2,395	2,491	2,082	4,215	1,176

\* Excluding The BioAg Alliance impact

		2017	2016	2015	2014	2013
<b>Key ratios</b>						
Revenue growth, DKK	%	3	1	12	6	5
Revenue growth, organic	%	4	2	4	7	7
R&D costs (% of revenue)	%	13.2	13.2	13.5	14.8	13.0
Gross margin	%	57.9	57.5	58.1	57.4	57.2
EBITDA margin	%	35.2	35.1	35.8	35.3	31.0
EBIT margin	%	27.9	27.9	27.7	27.2	24.7
Effective tax rate	%	19.5	21.4	22.0	23.0	20.2
Equity ratio	%	61.3	62.9	65.2	61.2	67.0
NIBD/EBITDA		0.3	0.2	0.1	(0.2)	0.2
Return on equity	%	27.1	26.1	24.7	22.6	21.3
ROIC including goodwill	%	25.6	25.1	25.9	23.1	20.0
WACC after tax	%	6.5	6.5	5.3	3.7	4.7
Earnings per share (EPS), diluted	DKK	10.49	10.06	9.12	8.02	6.93
Dividend per share (2017 proposed)	DKK	4.50	4.00	3.50	3.00	2.50

Key ratios have been prepared in accordance with The Danish Finance Society's "Recommendations & Financial Ratios 2015 Nordic Edition" as well as certain key figures for the Novozymes Group as described in the Glossary.

## Environmental and social data

Total number of employees	No.	6,245	6,441	6,485	6,454	6,236
Rate of employee turnover	%	11.9	10.4	9.1	8.1	7.5
Frequency of accidents with absence per million working hours		1.6	2.2	2.5	1.7	2.4
Women in senior management	%	26	25	24	23	23
Estimated CO <sub>2</sub> reductions from customers' application of Novozymes' products*	Mill. tons	76	69	60	60	52

\* Data for 2013 have been calculated based on life cycle assessment data from 2008.

Letter from the Board of Directors

# Setting the direction for growth





## Letter from the Board of Directors

**The world is facing serious and complex challenges that demand solutions. For a company such as Novozymes, this also presents opportunities. 2017 was a step in the right direction on our journey of pursuing our purpose and accelerating growth rates.**

In 2017 alone, the world's population grew by more than 83 million people, meaning more mouths to feed, more clothes to produce and more goods to be transported from one location to another. With limited global resources, the need for sustainable answers is greater than ever. 2017 saw increased demand for Novozymes' biological solutions.

**“It is Novozymes' ability to innovate that opens up completely new markets and safeguards our leading position in existing ones.”**

We succeeded in bringing impactful innovations to the market – innovations which were received well by our customers and which also hold significant future potential. To a large extent, innovation is what drives revenue and earnings growth at Novozymes. It is Novozymes' ability to innovate that opens up completely new markets and safeguards our leading position in existing ones. Innovation

also makes it possible for us to produce enzymes and microbes more efficiently for less. This gives us the opportunity to invest even more in our business, while providing our shareholders with attractive returns.

### **Investing for the future and growth**

Novozyymes invests for the long term. At the same time, we are keeping track with market developments and ensuring that we are in a position to seize short- to mid-term opportunities.

In 2017, the Board approved significant investments in Novozymes' future. Let me highlight a few of the key projects. In Denmark, we are building a state-of-the-art innovation campus which will become a global hub for biotech research and business development. In India, we are building new production facilities near Mumbai. In Blair, Nebraska, US, we have expanded our production capacity significantly. In addition to these investments, we continue to invest 13% of sales in R&D.



**In 2017, Novozymes educated more than 188,000 people about the potential of biology.**



**Read more about our educational activities in Targets**

## Letter from the Board of Directors

Novozymes sees great future potential in emerging markets. One way to get to know our customers in these markets better is to move into their neighborhood to understand their needs and challenges in the actual environments in which they operate. Consequently, the Board also supports Novozymes' intention to deploy more people closer to customers in emerging markets.

2017 has been a truly eventful and exciting year, during which we have geared up for future growth and enhanced sustainable impact. We delivered 4% organic sales growth and solid earnings.

### “Novozymes sees great future potential in emerging markets.”

Novozymes' share price increased by 46% in 2017. The Board is satisfied with developments and with the direction in which we are heading. However, 4% sales growth is not sufficient for a company with an ambition of changing the world. With our strong innovation pipeline, we will strive to do better in 2018.

### Ensuring the right competencies

Novozymes operates under ever-changing market conditions. This creates both opportunities and risks. It is the Board's responsibility to ensure that Novozymes has the right competencies and succession planning in place to seize these opportunities and mitigate the risks.

In 2017, we made some changes to the Board. We welcomed Ms. Kim Stratton and Mr. Kasim Kutay to the Board in February. They bring new competencies in life sciences and international

business to the team, and the Board has already benefited from their valuable input. In December 2017, we announced the Board's proposal to elect Ms. Patricia Malarkey to the Board.

Ms. Malarkey has more than 30 years' experience in the global agrochemical industry. I am convinced that Ms. Malarkey's strong research insight and development experience will contribute significantly to the further development of Novozymes' innovation processes and agenda.

### “The Board is satisfied with developments and with the direction in which we are heading.”

With these changes, we have ensured that we have a strong and well-diversified Board capable of delivering essential input regarding Novozymes' strategy and priorities. For a global company such as Novozymes, having a diverse and talented team is important to ensure future growth.

In December 2017, we announced the appointment of Ms. Prisca Havranek-Kosicek as new Chief Financial Officer, effective as of February 1, 2018. Ms. Havranek-Kosicek replaces Mr. Benny D. Loft, who left Novozymes earlier in 2017.

Ms. Havranek-Kosicek brings the right competencies and drive to support our future growth, and the Board looks forward to welcoming her as part of the Executive Leadership Team.

### “For a global company such as Novozymes, having a diverse and talented team is important to ensure future growth.”

#### Looking ahead

To summarize, we are focusing on accelerating growth. With growth come many benefits for Novozymes and its stakeholders. We are not immune to what happens in the world and are sometimes challenged by factors beyond our control. What we can control is our focus on innovation and understanding market and customer trends, so that we can provide our customers with better solutions. In this respect, we are in good shape.

#### Thank you

On behalf of the Board, I would like to thank our shareholders for the support and trust they have shown Novozymes in 2017. I would also like to thank the Executive Leadership Team and Novozymes' employees for their achievements and hard work during the year.



Jørgen Buhl Rasmussen  
Chairman

The Board of Directors  
Novozymes A/S

# 2nd



In 2017, Science Magazine ranked Novozymes the world's second-best employer within biotech, pharma and related industries.

Novozymes holds more than

# 6,500


active and pending patents.

# 13%

of Novozymes' total revenue is reinvested in R&D.







Letter from the CEO

# Innovation for greater impact

## Letter from the CEO

# The results for 2017 were good and in line with expectations. We have a strong innovation pipeline, and our well-diversified business is showing solid momentum. Our focus on solutions for emerging markets is paying off, and our outlook for 2018 is positive.

We delivered good results in 2017, giving us a strong foundation for creating even greater impact with our solutions. Results were solid against the backdrop of a challenging year in 2016. At the same time, we moved forward on important strategic priorities. We are seeing the positive effects of our divisional setup, with application R&D closer to the commercial units. This shift has brought us closer to our customers and is enabling us to deliver more tailored solutions and react faster to changing requirements.

We landed the year with 4% organic sales growth. We are also doing well on the earnings side. Productivity improvements had a positive impact on the gross margin, somewhat offset by unfavorable mix and price changes. EBIT margin came in at 27.9%.

Four out of five industries grew, but especially Food & Beverages and Bioenergy performed very well, once again proving the strength of our diversified business. Overall, I am satisfied with our financial performance in 2017, and I am happy to say that the outlook for 2018 is positive.

Novozymes' key growth driver is delivering solutions that improve the sustainability performance of our customers and partners. We have set some ambitious sustainability targets. In 2017, our customers avoided an

estimated 76 million tons of CO<sub>2</sub> emissions by applying our solutions.

**“Overall, I am satisfied with our financial performance in 2017, and I am happy to say that the outlook for 2018 is positive.”**

Unfortunately, we were unable to meet some of our own operational sustainability targets, such as water efficiency and energy efficiency. This is mainly due to a higher utilization rate than expected. This is not satisfactory, and in 2018 it will be key for us to deliver a better performance, and at the same time, we will evaluate how best to guide and measure our sustainability performance going forward.

### Tailoring solutions

To support growth in the years to come, we are continuing to step up our activities in emerging markets. These markets and customers hold significant potential across all industries. We now deliver even more solutions tailored to emerging markets. Examples include products that enable more efficient production from local raw materials, such as beer from cassava, or detergent solutions that target specific stains and that can tolerate hot storage conditions. In India, we have just opened our new Detergent Design Center, where customers can visit a model consumer home

and supermarket, explore biological solutions and see the benefits of our products first hand. This is a good example of local innovation and customer interaction at work.

We are also expanding our offerings in developed markets, with new and improved solutions across segments that tap into different consumer trends. For example, we have several solutions catering to increased consumer demand for healthy and natural food products. These include our product Saphera<sup>®</sup> for lactose-free dairy, an area where we are seeing growing customer interest and sales.

### Our innovations redefine industries

In 2017, we delivered some amazing innovations. Our innovation pipeline contains more than 100 research projects across the business. Eight of these represent significant market-expanding growth opportunities in terms of sales and have the potential to impact the world in a sustainable way. In 2017, four of these programs resulted in product launches, while five programs moved forward to the next stage of the pipeline. We have decided to add “solutions for water” to our pipeline of significant innovations as a new program.

I am especially proud of our new product from the freshness & hygiene platform in Household Care. It is a significant new innovation that will change how we wash our clothes and how we

define “clean” going forward. We also launched Palmora<sup>®</sup>, our first offering for the palm oil industry, and Frontia<sup>®</sup>, a brand new technology for the grain-milling step in starch processing.

**“We are also expanding our offerings in developed markets, with new and improved solutions across segments that tap into different consumer trends.”**

While some of these innovations might not deliver a massive contribution to sales in their first year on the market, future growth prospects look promising.

In conclusion, 2017 saw the highest number of impactful innovations for many years, and we expect to deliver on our long-term target of delivering 10 transformative innovations between 2015 and 2020. We have landed four of these since 2015, which is a great achievement.

### Helping customers stand out

Our customers operate in dynamic markets subject to constant change. This is particularly apparent in agriculture-related markets, where farmers are under pressure due to the low prices of agricultural produce, including corn and soy. In Household Care, we have seen some of our large, global customers reduce



## Letter from the CEO

their enzyme usage. However, this is offset by significant investments from regional detergent manufacturers.

### “2017 saw the highest number of impactful innovations for many years.”

When customers are under pressure, we are in a position to help, by delivering innovation that sets them apart from the competition, reduces costs and gives them an advantage in the marketplace. We have made radical advances in how we innovate by constantly developing the technology we use. As part of this, we have progressed the speed and precision with which we find microbes and extract enzymes.

Indeed, the fact that we are able to screen a vast number of candidates in a very short space of time is one of our competitive advantages. We work closely with customers throughout the innovation process, to ensure that we deliver exactly what they need, when they need it.

### Sustainability as an integral part of our solutions

At Novozymes, we help create better lives in a growing world. Working for a company that contributes to a more sustainable future is what drives me and my colleagues to deliver our very best every day. In 2017, we made further progress on delivering on our long-term sustainability targets. These targets are rooted in the UN Sustainable Development Goals (SDGs) and ensure that we continue moving in the right direction.

I am especially pleased to report that we are making progress on our target of educating one million people about the potential of biology. Education is crucial for global sustainable development. To spark an interest in science among schoolchildren, we launched the global Teach for Tomorrow initiative as part of the fifth annual European Biotech Week. We developed an educational kit and held masterclasses, giving our employees – or Zymers as we call ourselves – the tools to teach children in elementary schools about the wonders of fungi and enzymes. The initiative was very well received by Zymers worldwide, and we saw that not only did it teach schoolchildren, but it also sparked internal enthusiasm and pride at Novozymes. We believe that the more people we educate, the more likely they are to get involved in creating sustainable biological solutions.

### Looking ahead

With strong innovation and a well-diversified business showing good momentum, our outlook for the future is positive. In 2018, we expect to deliver 4-6% organic sales growth, an EBIT margin of around 28% and an ROIC incl. goodwill of 24-25%. Growth is expected to come from all industries, but we continue to be subject to volatile agriculture-related industries.

In order to deliver on our outlook in 2018, we will prioritize the following key initiatives: Expansion in emerging markets, Build and execute on digital programs, Implement new innovation models and Fast-forward our top innovation programs.

We recently welcomed Ms. Prisca Havranek-Kosicek as new CFO and member of the Executive Leadership Team for Novozymes. She brings a wealth of experience from top finance positions in international companies, and I am sure she will be a great addition to our team.

I am looking forward to 2018 and to taking yet another step toward delivering on our ambitions. I am confident that we are on the right track. And with our ever-expanding innovation capabilities, a robust business and 6,245 dedicated Zymers worldwide, we will go on setting the standard within industrial biotechnology.

Finally, I would like to thank Zymers for their passion for this company and their hard work, which has enabled us to deliver on our promises in 2017.



Peder Holk Nielsen  
President & CEO

# 8

new products



In 2017, we launched eight new products that helped our customers adapt to market changes, make their products stand out, reduce costs and improve production.

# 14,531

total sales in DKK million.



# 6,245

employees on six continents work for Novozymes.

# Novozymes in a nutshell

**Novozymes is the global market leader in biological solutions, producing a wide range of industrial enzymes and microorganisms. We use nature's problem solvers to help customers produce more from less, adapt to market changes, make their products stand out and reduce costs. We simply enable customers to deliver better products.**

## **Sustainability comes naturally**

The world's population is growing, but its natural resources are not. This disparity has prompted a worldwide call to action to find sustainable solutions capable of easing the burden on our planet and getting the most out of the resources we have available.

Novozymes' innovative biological solutions are applied to a wide range of products, from detergents and biofuels to agricultural crops and food-processing aids. Our products help reduce waste and save energy, water and raw material use.

Sustainability is a key characteristic of biological solutions and is imbedded in the way we do business. In 2017 alone, Novozymes' solutions helped customers save an estimated 76 million tons of CO<sub>2</sub>. That is equivalent to taking 32 million cars off the road.

## **World-class innovations deliver results**

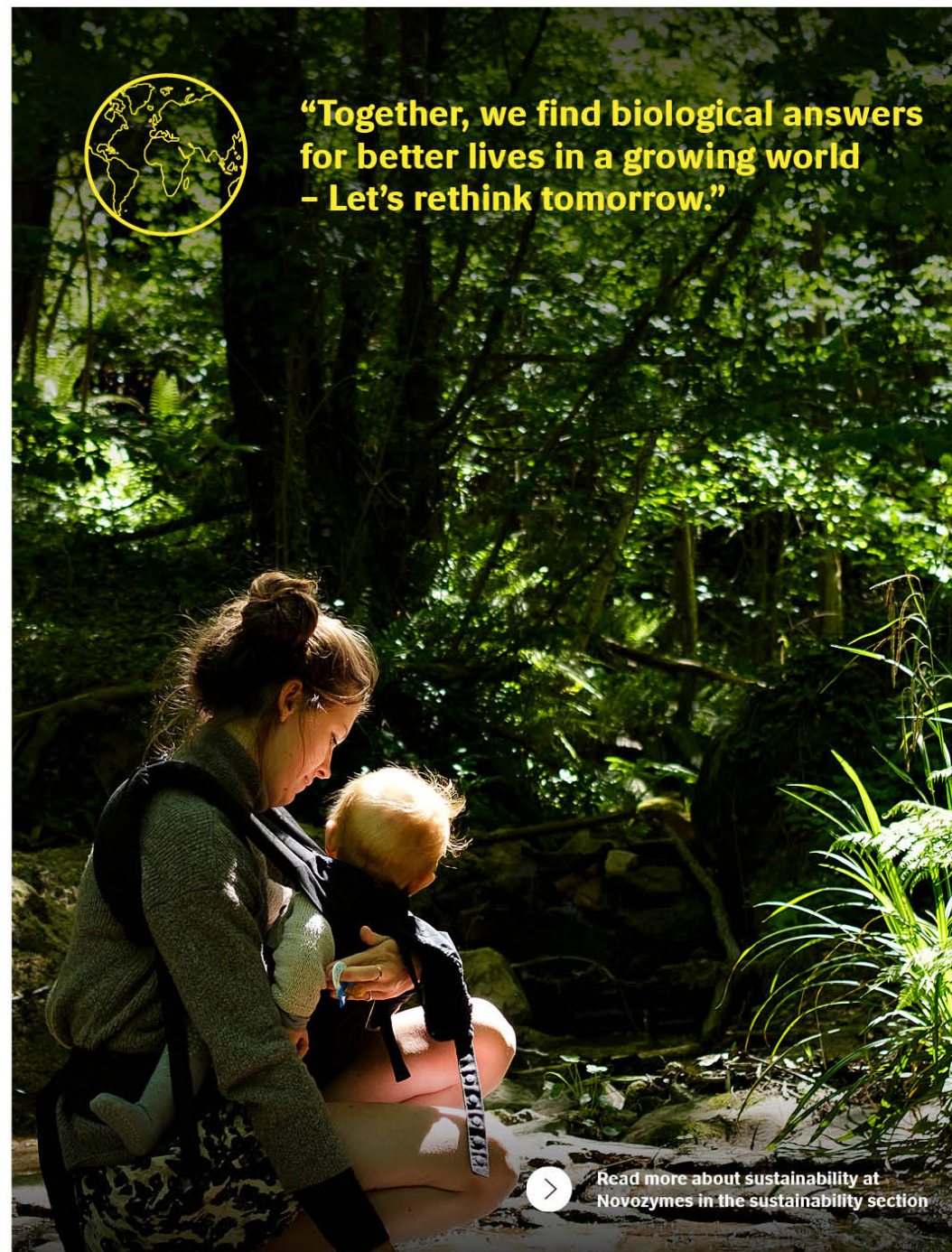
We continuously search for new and better bioinnovations – and research is at the heart of everything we do.

Each year, we put 13% of our revenue back into R&D, to turn biology into business opportunities across industries. 23% of our employees work in R&D, and in 2017 alone we launched eight new innovations.

**“Sustainability is a key characteristic of biological solutions and is imbedded in the way we do business.”**



**“Together, we find biological answers for better lives in a growing world – Let's rethink tomorrow.”**



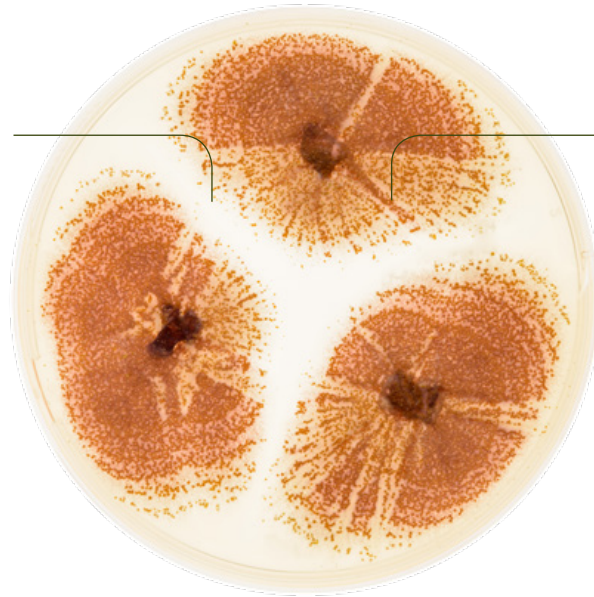
**Read more about sustainability at Novozymes in the sustainability section**



## Small components that make a big difference

### What are enzymes?

Enzymes are proteins that act as catalysts, aiding complex reactions that occur in all living systems. This is nature's own way of kick-starting biological processes. When one substance needs to be transformed into another, nature uses enzymes to speed up and control the process. With Novozymes' expertise, enzymes can be used on an industrial scale to optimize output, deliver better products and accelerate processes, while saving water, energy and raw materials.



### What are microorganisms?

Microorganisms are living, single-celled organisms such as fungi or bacteria. Like enzymes, Novozymes' microorganisms have natural properties that influence processes and reactions. The industrial applications for microorganisms are countless. For example, microbes expand the farmer's toolkit to increase yield and protect crops. Microbes are also the source of the enzymes we produce. They are found in diverse environments – from agricultural fields to extreme environments such as volcanoes and frozen lakes. Each environment yields different microorganisms and enzymes, providing natural diversity where new enzymes and microbes suited to different uses and conditions can be found.

## Where do our solutions make a difference?



**Animal health & nutrition:** Improve animal health, growth and feed utilization



**Health & nutrition:** Make foods safer by removing carcinogenic and allergenic ingredients



**Pulp & paper:** Reduce water, energy and chemical consumption in pulp and paper production



**Aquaculture:** Support improved growth, survival and disease resistance



**Baking:** Improve softness, freshness and dough strength



**Juice:** Increase yields and improve clarity of juice



**Pharmaceuticals:** Improve yields and reduce costs of drug production



**Biogas:** Work as processing aids



**Biofuels:** Produce sustainable energy from crops or waste



**Leather:** Prepare, degrease and tan leather more efficiently



**Starch:** Produce sugar syrups more simply and efficiently



**Wastewater treatment:** Make wastewater treatment facilities more efficient



**Brewing:** Improve filtration and flavor of beer and ensure raw material optimization



**Oils & fats:** Harden fats without unhealthy trans-fatty acids



**Textiles:** Save time, water, energy and chemicals in textile production



**Detergents:** Remove tough stains and enable low-temperature washing



**Biological solutions for agriculture (BioAg):** Improve crop yield and health



**Want to know more about how we help customers advance their business? Go to [Novozymes.com](https://www.novozymes.com)**

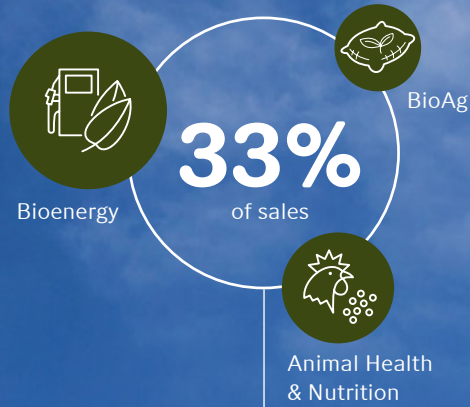


# Novozymes' commercial divisions

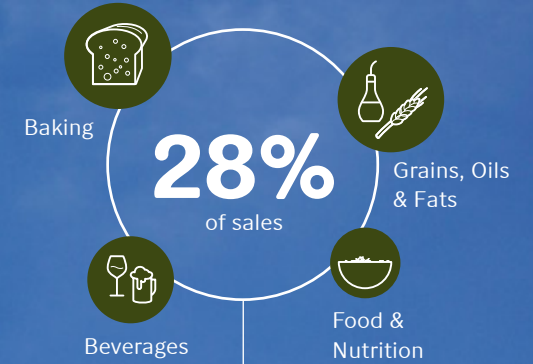
## Household Care & Technical



## Agriculture & Bioenergy



## Food & Beverages





# Novozymes' first new freshness & hygiene solution tackles persistent stains

**Sweat. Dirt. Nobody wants this unavoidable grime on their body – or on their clothes. Thankfully, Novozymes' new freshness & hygiene solutions are on hand.**

In the fourth quarter of 2017, we launched the first freshness & hygiene solution, which will take laundry detergents to a whole new level of performance. This solution comes in the form of a new product that targets the odors lurking deep down in textiles and complex stains that build up over time. These stains, which are made up of a combination of body soil, grime and dirt, are notoriously difficult to remove.

Novozymes' breakthrough solution works to address many of the laundry gripes of consumers worldwide.

Freshness & hygiene is new territory for enzymes, which are traditionally used for more specific stain removal and textile color care.

With this new solution, Novozymes can expand its presence worldwide and increase its already significant foothold in the Household Care industry.

"This is one of our biggest innovations in the past 25 years," says Anders Lund, Executive Vice President, Household Care and Technical.

"We've received great preliminary customer feedback on our new solutions, and I'm confident that they will begin contributing to sales growth in the second half of 2018."



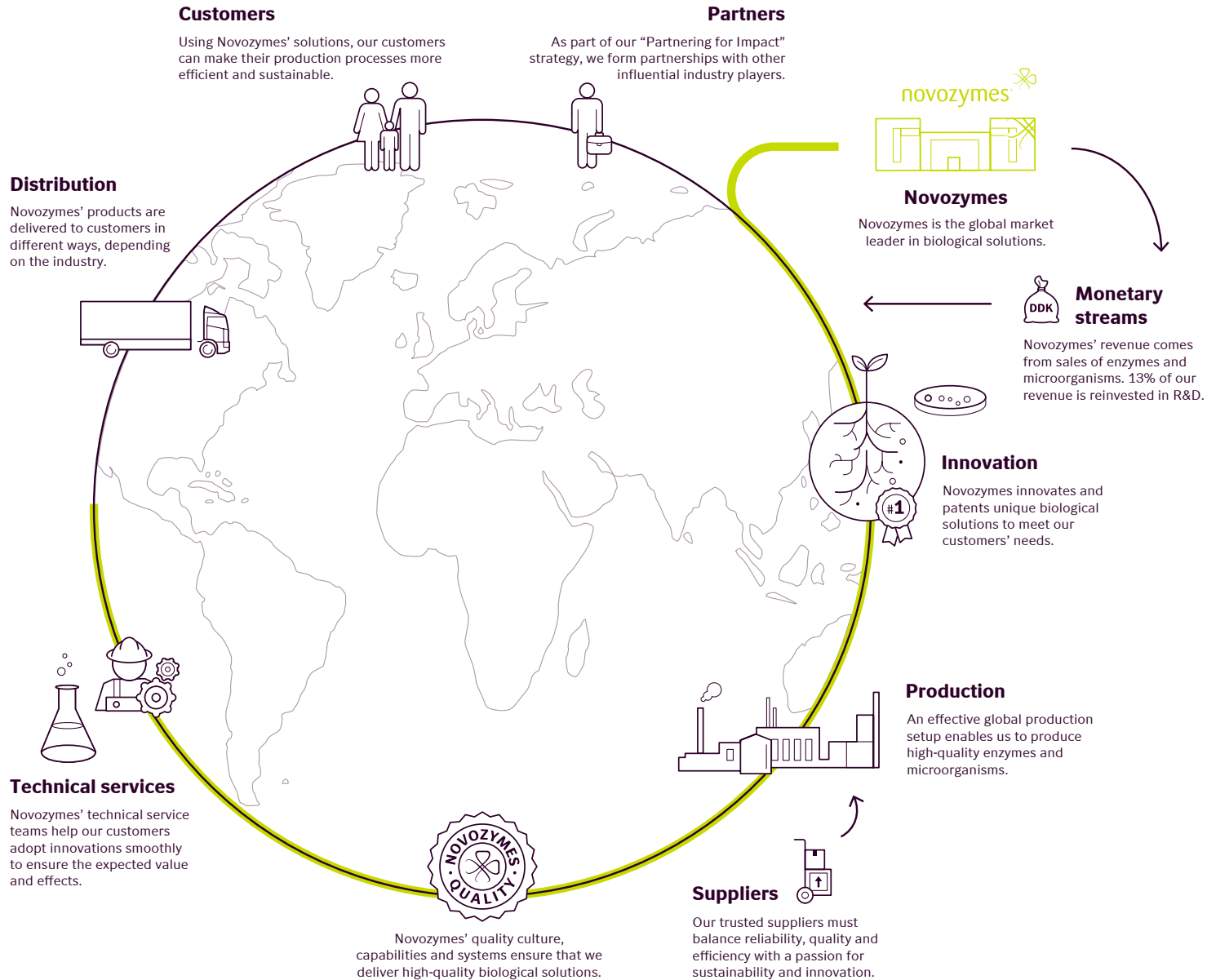
**"This is one of our biggest innovations in the past 25 years."**



# Our business



# Business model



## Macro trends that impact our business model



Transition to sustainable agriculture



Energy transition



Shifting demographics and urbanization



Water scarcity



Digitalization of the global economy

**Our business is about turning amazing science into sustainable biological answers in a growing world. We use a wide range of enzymes and microorganisms to unlock business opportunities. From enabling farmers to grow crops more sustainably to enabling parents to tackle mud stains on their children's clothes, our innovations are paving the way for a better tomorrow.**

Our business model and our strategy provide us with a solid foundation for living up to our purpose and meeting our long-term goals.

**Sustainability comes naturally**

Sustainability is a crucial part of all our products – and a key part of both our value proposition and our business model. Sustainability is also evident in our agreements with suppliers and partners, as well as in our production.

We believe that it is important to optimize our use of resources and minimize our footprint. We therefore set ambitious targets for reducing resource consumption and CO<sub>2</sub> emissions. Alongside unique consumer benefits, customers see sustainability as a differentiator – something that sets them apart from the competition while positively driving change. We prove our commitment to green solutions by tracking and documenting the annual impact savings from customers' applications of our products.

Our dedication to sustainability goes beyond our products. When the UN published its Sustainable Development Goals (SDGs) in 2015, we integrated them into our business. These goals highlight global issues such as clean water, climate, energy and transport, and food security. They also guide our purpose and long-term targets.



**Customers**

Novozymes' enzymatic and microbial solutions enable our customers to cut costs and lower the environmental footprint of their products and processes by reducing or substituting raw materials, conserving resources or improving product quality and effectiveness. We work closely with our customers to gain a better understanding of their needs and how our solutions can help solve the challenges facing consumers.

We see our customers as our partners, and we recognize that our products impact their production processes. That is why we work with them to identify their needs and develop solutions that enable them to enhance their impact.



**Partners**

As part of our Partnering for Impact strategy, we form partnerships with other influential industry players, for example Monsanto as part of The BioAg Alliance, and DSM in Animal Health & Nutrition. These partnerships benefit from our strong innovation skills and manufacturing expertise as well as from

our partners' strong skills in areas such as screening, testing, data processing and commercialization. Partnerships enable Novozymes to explore and enter new business areas faster and more efficiently.



**Innovation**

The starting point for all our innovation is understanding the changing needs and expectations of our customers and partners. With R&D facilities in many regions and commercial teams with strong insights into the different markets, we are able to identify enzymes and microorganisms to suit global and regional needs.

More than 23% of our employees work in R&D. Every year, our researchers screen thousands of microorganisms to find the one that produces the enzyme with the exact characteristics we need for a specific product. Most of our products take 2-5 years to progress from idea to market.

To ensure that innovation takes place as close to our customers as possible, our specialized application development units are positioned in the commercial side of our organization within the Household Care, Agriculture & Bioenergy and Food & Beverages divisions. This creates a strong connection between the commercial side and R&D, and means that more impactful products enter our pipeline.

A Portfolio Board manages the R&D pipelines and prioritizes funding across Novozymes' divisions. This board ensures that the innovations we bring to the market have strategic and financial impact, and that they contribute to delivering on the SDGs.



**Production**

In order to produce large amounts of enzymes, we use fermentation techniques to enable our microorganisms to multiply. Fermentation is a core part of our production process. After recovering enzymes from the fermentation process, we prepare them for use by customers, either in the form of liquids or granulates. We produce our enzymes at eight plants across four continents, and continuously endeavor to optimize and innovate our production processes to ensure that we get the most out of our production capacity.



**Suppliers**

Novozymes has an efficient supplier management system to ensure that our suppliers balance the importance of reliability, quality and efficiency with our passion for sustainability and innovation.



We work closely with our suppliers to innovate and implement responsible and sustainable solutions.



### Quality

Our unique relationships with our customers allow us to anticipate and understand their needs and, consequently, deliver high-quality solutions. At Novozymes, quality is about more than just product quality. We also strive for excellence in the processes and services we provide to our customers.

Continuous monitoring and improvement are integrated into our quality system and are a cornerstone of how we advance the products and services we offer to our customers.



### Technical services

Novozymes' technical service teams help customers adopt each innovation smoothly to ensure that the expected value is achieved. Teams work with customers on site to ensure that Novozymes' biosolutions deliver in specific production environments. The extent of a technical service team's involvement depends on the complexity of the production process at the customer's plant.

Our technical service teams set us apart from the competition because they optimize the use of our products and make the necessary adjustments in line with individual customers' needs. The knowledge gained from interactions

with customers also feeds back to our product pipeline and helps future innovations.



### Distribution

Distribution of Novozymes' products differs from one industry to another. In Bioenergy and Household Care, most products go directly from Novozymes to customers. Within Agriculture & Feed, distribution is carried out by our industry partners. Food & Beverages and Technical markets are more fragmented, with a mixed distribution setup.



### Monetary streams

Novozymes' revenue comes from sales of enzymes and microorganisms. Product prices include the cost of technical services. Around 13% of our sales is reinvested in R&D, benefiting both product innovation and production economy.

Novozymes' most significant cost drivers are direct production costs and R&D.

When it comes to shareholder returns, until 2017, we had a target dividend payout ratio of 40%. As that target has now been reached, it will be proposed at the Annual Shareholders' Meeting in March 2018 to increase the long-term payout ratio to ~50%. We also conduct regular share buyback programs to provide returns for investors.

## Partnerships expand the reach of our solutions in Agriculture

In line with our "Partnering for Impact" strategy, Novozymes engages in a number of partnerships which enable us to combine our knowledge with that of other strong industry players. Here is a brief description of some of these partnerships:

- **The BioAg Alliance**

Established in 2014, The BioAg Alliance brings together Novozymes' BioAg operations and capabilities within microbial discovery, development and production with Monsanto's microbial discovery, advanced biology, field testing and commercial capabilities. The collaboration helps farmers globally meet the challenge of producing more with less in a sustainable way – for the benefit of agriculture, consumers, the environment and society at large.

- **The Feed Enzyme Alliance**

The Feed Enzyme Alliance works to improve go-to-market service models and tools in Animal Health & Nutrition. Through this collaboration, Novozymes and DSM are working to enhance our ability to bring new and more efficient feed enzymes to the market as quickly as possible.

- **Adisseo partnership on probiotics for poultry**

Adisseo and Novozymes have partnered to develop and market the probiotic Alterion® for poultry. Novozymes is responsible for in vitro screening, development and production, while Adisseo manages in vivo testing, marketing and sales. Alterion® gives farmers better control over the gut health of their animals.

- **Boehringer Ingelheim partnership on probiotics for hatcheries**

Novozymes has entered into a strategic collaboration with Boehringer Ingelheim to deliver probiotics for poultry hatcheries. The collaboration includes R&D, production, marketing and sales of a portfolio of probiotic products providing birds with beneficial bacteria, offering an alternative to antibiotic growth promoters.



# Global trends that impact our business model

**Novozymes' business model is open to external input, meaning that global macro trends can impact our sales and profitability across different sectors. The top five global macro trends that impact Novozymes' business are:**



## **Transition to sustainable agriculture**

There is growing pressure on the global food system – driven by demographics, consumer pressure and climate change-related supply chain disruptions – to produce more with less. As a result, there is strong demand for solutions (microbials, plant genetics, big data, sensors, etc.) to improve farm productivity and grow more food from the same arable land.



## **Shifting demographics and urbanization**

In the future, global consumption is expected to be driven by three key demographic factors: rapid urbanization, a growing middle class in emerging economies and an aging population in most developed economies. These consumers need simple, convenient and sustainable solutions to address for example air and water pollution and meet healthcare needs.



## **Energy transition**

Society is increasingly relying on electricity to meet its energy needs for daily consumption, but also for heat and mobility. This trend, together with the resurgence in natural gas and the declining cost of renewables, is driving a major shift in the global energy system. At the same time, the growing heavy transportation sector (aviation, shipping, etc.) is still dependent on fossil fuels and needs low-carbon alternatives.



## **Water scarcity**

Global demand for clean water is expected to outstrip supply by 2030, exacerbated by climate change-related weather crises and severe pollution. There are growing calls for stronger government regulation and greater investment in infrastructure and water-saving solutions.



## **Digitalization of the global economy**

Digitalization is transforming manufacturing, business models and the nature of work itself. Companies are using new digital technologies (blockchain, big data, 3D printing, etc.) to increase production efficiency and agility, and want solutions tailored to their specific needs.





# Innovation pipeline update

Area	Innovation	Feasibility	Discovery	Development	Launch	Commercial
Household Care	Freshness & hygiene	✓	✓	✓	→ ●	
Household Care	Tailored emerging-market solutions	✓	✓	✓	→ ●	
Food & Beverages	Vegetable oil processing	✓	✓	✓	→ ●	
Food & Beverages	Grain milling	✓	✓	✓	→ ●	
Agriculture & Feed	Animal health	✓	✓	✓	●	
Agriculture & Feed	New transformative BioAg solutions	✓	✓	→ ●		
Bioenergy	Biomass conversion	✓	✓	✓	●	
Technical	Solutions for water	●				

\* Arrows denote advancement to the next phase over the past 12 months.

Novozymes’ innovation pipeline contains more than 100 research projects across the business. In 2017, Novozymes launched eight new products. The table shows some of the major innovation areas. These areas represent significant market-expanding growth opportunities, most with the further potential to impact the world in a sustainable way, enabling us to live up to our purpose of delivering biological answers for better lives in a growing world. In 2017, progress was made in most programs – four of which resulted in product launches. Five of the eight existing programs progressed to the next phase, and one new program – “Solutions for water” – was added.

In **Household Care**, the first product from the freshness & hygiene platform was launched in December 2017. Freshness & hygiene solutions deliver completely new functionality, and consumers experience clothes that feel cleaner and fresher.

With Progress® In, we delivered the first specifically developed enzyme solution tailored for the broad markets of unpenetrated detergents making enzyme-enabled laundry benefits available to more consumers. Following these launches, both programs advanced to the “Launch” phase of the pipeline.

In **Food & Beverages**, we saw significant development within the grain-milling program with the launch of Frontia®, a solution enabling grain-milling processors to obtain significantly more starch and gluten during the grain fiber-milling process yet with lower water and energy consumption.

In vegetable oil processing, we launched Palmora®, which improves yield and process performance in palm oil production by reducing viscosity in the production process and improving the separation of oil from the palm fruit pulp. Both programs advanced to the “Launch” phase after the first products were launched in the second quarter of 2017.

In **Agriculture & Feed**, all three innovation tracks progressed. The animal health platform covers a broad portfolio of projects, including the animal probiotic Alterion®, which we launched together with Adisseo, but also more projects, which we will be more detailed about in 2018.

The development with Monsanto of new transformative microbes for corn, soybeans and wheat progressed to “Development.” These new BioAg products open up opportunities in brand-new crop categories and bode well for the potential of The BioAg Alliance. The enhanced corn inoculant Acceleron® B-300 SAT, which we launched together with Monsanto, has been commercialized and has therefore been removed from the innovation pipeline overview.

In **Technical**, we added “Solutions for water” as a new innovation program. We are exploring the feasibility of biotechnological solutions that target key challenges within water and wastewater treatment.

We find the water treatment space to be an exciting opportunity for Novozymes to leverage our core technologies to help address one of the world’s most significant challenges.

# Strategy

**Today's global problems are daunting and complex. But so are the opportunities. At Novozymes, we are committed, together with our partners and customers, to building a more sustainable future – and that is what our purpose and strategy are all about.**

Our purpose and strategy steer us in a direction that will strengthen our position as the global market leader in biological solutions. We can – and will – contribute to a sustainable future.

## **Tiny solutions, big impact**

The world's population is expected to rise to 9.8 billion people by 2050, yet our natural resources cannot keep pace. We need to find innovative and sustainable ways to feed and fuel the world.

Novozymes' enzymes and microorganisms may be too small to see with the naked eye, but these tiny wonders can help solve great global challenges.

“Together we find biological answers for better lives in a growing world – Let's rethink tomorrow.” This is our purpose, and it is deeply rooted in everything we have accomplished as a company. Our purpose also looks forward to what we can achieve together with customers, government, academia and other institutions. Together, we can find sustainable answers to the world's greatest challenges.

## **Partnering for lasting impact**

Our Partnering for Impact strategy comprises four focus areas aimed at fulfilling our purpose. At the core of this approach is a commitment to creating impact through partnerships.

For Novozymes, partnerships are deep-rooted collaborations with mutual benefits and obligations. One such partnership is the one we have with our customers. Our solutions are often an integral element of their production processes. Enzymes and microorganisms enable more sustainable and efficient production, and are often the ingredients that set our customers apart from their competitors.

By understanding the social, environmental and economic realities facing our partners, we can help create real and sustained impacts, such as optimized processes, smaller environmental footprint, improved profitability and breakthrough products.

## **Novozymes' four strategic focus areas**



### **Rally for change**

We will form partnerships and networks with customers, consumers, governments, suppliers, academia and others around us to make a sustainable difference.



### **Lead innovation**

We will inspire and excite our customers by delivering more significant innovation, tailored to their local markets.



### **Focus on opportunities**

We will prioritize the customers, markets and activities that hold the biggest opportunities for creating impact.



### **Grow people**

We want to be better at enabling our employees to develop their professional and leadership skills.



# Strategy unfolded

## 2017 achievements in our four strategic focus areas



### Rally for change

In 2017, Novozymes continued to work with like-minded organizations to promote sustainable growth. For the fourth time, CEO Peder Holk Nielsen took part in the UN Annual General Assembly in New York. During the meeting, he shared Novozymes' Impact Assessment tool and management concept, which is based on the UN Sustainable Development Goals (SDGs). The tool allows us to understand the links between innovation opportunities, business solutions and potential SDG impact.

HelloScience, Novozymes' open innovation initiative, invites start-ups, entrepreneurs and academia to collaborate with us to solve global challenges such as those addressed in the SDGs. The first theme launched in September 2017 was water scarcity. In December 2017, it was announced that Novozymes and Grundfos would be combining biology and pump technology in collaboration for clean water as part of the HelloScience initiative.



### Lead innovation

In 2017, Novozymes made significant progress on its innovation pipeline. We launched a total of eight new products.

In Household Care, we launched our first freshness & hygiene solution. The solution is groundbreaking innovation to deal with odor and hygiene, and it is the most important launch within our Household Care business for many years. By entering the area of freshness & hygiene solutions, we are removing completely new types of stains, once again expanding the territory for what enzymes can do.

In Bioenergy, we launched Spirizyme<sup>®</sup> T, an enzyme that converts the sugar trehalose into ethanol, reducing residual starch and sugars and increasing ethanol yield. We also launched Palmora<sup>®</sup>, our first offering for the palm oil industry. Palmora<sup>®</sup> improves yield and processes for palm oil producers. Frontia<sup>®</sup> is a new technology for the grain-milling process, delivering better yields and process improvements.



### Focus on opportunities

One major area of opportunity is within emerging markets. In these markets, Novozymes focuses on intensifying partnerships with regional customers, providing more affordable solutions and expanding our offerings. Our new Progress<sup>®</sup> In is a low-cost solution for powder detergents in Africa, Asia and the Middle East. Medley<sup>®</sup> 2.0 also targets small and medium-sized players in emerging markets. In India, our new Detergent Design Center caters to Household Care customers in the Middle East, Africa and India. Customers can visit a model home and supermarket, explore biological solutions and see our products in action.

Our strategy also aims to explore new growth areas. In animal health, our work with probiotics is helping to meet growing demand for sustainable animal-based protein. Our probiotic Alterion improves poultry health and weight gain and, consequently, reduces antibiotic use. Launched with our partner Adisseo in 2016, Alterion is now also available in China. In March, we also announced a partnership with Boehringer Ingelheim to develop and commercialize probiotic products for hatcheries.



### Grow people

In 2017, Novozymes focused on leadership, talent development, diversity and promoting biotechnology across the world. Our new Lead the Way program helps leaders to excel in the workplace of tomorrow, amid less stringent decision matrices and ever-changing employee expectations.

We also value a diverse workforce with an international mindset. In 2017, we added new requirements for monitoring diversity in leadership positions to our succession management system. To grow our business and our people, we have also prioritized getting more people closer to our customers and invested in more opportunities in emerging markets.

Biotechnology is at the heart of everything Novozymes stands for, and we want to share our knowledge, insight and passion with the next generation. Our new Teach for Tomorrow program gives our employees the opportunity to learn more about biotechnology and share that knowledge with local elementary school students.

# Risk management

**At Novozymes, we understand that in doing business we face a range of risks. Our success, and that of our partners, depends on identifying and mitigating these risks as early as possible. Our risk management process reduces uncertainty and keeps us on track to achieve our ambitions and deliver value to our stakeholders.**

## Risk management framework

Novozyymes operates an Enterprise Risk Management (ERM) process whereby the key risks facing the company are identified, assessed and mitigated at different levels of the organization. We monitor most risks through half-yearly reviews. However, some risks require more frequent updates.

Risks are assessed based on a two-dimensional heat map rating system that estimates the impact of a risk on financials or reputation and the likelihood of that risk materializing.

The most significant risks are reviewed and assessed by the Executive Leadership Team and the Board of Directors. Novozymes' Risk Management & Controls department is responsible for the process. The department also ensures that top management promotes risk awareness, involvement and ownership across the organization. Our vice presidents are responsible for all relevant risks and must work to mitigate them in their respective areas of responsibility.

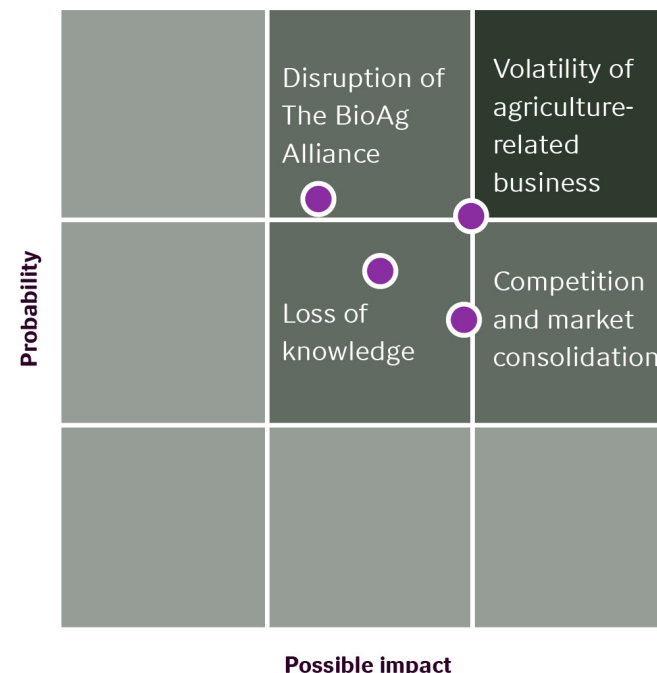
## Enterprise Risk Management process



## Key risks for Novozymes

This report shows four key enterprise risks that may impact the company in 2018. A comprehensive assessment performed in 2017 highlighted these risks because they have a potentially significant impact on the company and a relatively high probability of occurring.

## Risk assessment heat map



## Risk assessment

The key enterprise risks for 2018, situated in the upper-right corner of the risk heat map, are Competition and market consolidation, Volatility of agriculture-related business, Loss of knowledge, and Disruption of The BioAg Alliance. Three of the risks are similar to those identified for 2017, albeit with

slight changes, while the risk related to Volatility of agriculture-related business is an extension of the previous risk related to Volatility of starch-based ethanol. These risks, their potential impacts and our mitigation efforts are described in this section.



See Note 5.1 for information on financial risk factors and risk management



## Key enterprise risks for 2018

### Competition and market consolidation

Novozymes' market-leading position could be challenged by competition from existing and potential new competitors. Consolidation among competitors and customers creates larger players with increased scale.

#### Potential impact

Increased competition could come from enzyme manufacturers offering new solutions or from new players with broader technology platforms. With increased digitalization, competition could also relate to how solutions are implemented in customer production and so on. Although consolidation has the potential to make the market more stable, it could increase our competitors' and customers' financial strength and bargaining power.

#### Mitigation

We are vigilant regarding competition and closely monitor the market to assess risks. We continuously innovate to ensure that our product portfolio contains the latest concepts and applications for a range of industries. This also enables us to open up brand new markets. In 2018, we will further prioritize and invest in digitalization. Among other things, we will use advanced analytics to extract business value faster and with greater impact. We will also build a Digital Solutions team tasked with spearheading commercial efforts in biofuels.

### Volatility of agriculture-related business

In recent years, Novozymes has increasingly invested in the agricultural industry and related businesses, increasing our exposure. These markets are inherently volatile due to weather conditions, harvest quality, commodity prices, political mandates for ethanol blends, direct aid for farmers and so on.

#### Potential impact

Throughout 2017, agricultural markets remained somewhat depressed, putting a strain on farmers and ethanol producers. If this persists, it could challenge our value proposition, which, among other things, focuses on maximizing yield. Without political support for alternatives to fossil fuels, the ethanol industry could be further challenged, putting pressure on Novozymes' profitability. In Bioenergy specifically, competing technologies such as enzyme-producing yeast and enzyme-expressing corn could threaten Novozymes' market share.

#### Mitigation

Substantial R&D investments enable us to develop even better solutions for improving yield and profitability. In BioAg, the fruits of The Alliance with Monsanto are starting to enter our pipeline, with exciting launches due in the years ahead. In Feed, we are expanding our offerings within natural growth promotion, for example through our alliance with Boehringer Ingelheim. In Bioenergy, we continue to be the technology leader, introducing solutions that offer additional value beyond yield. We are also developing new solutions in yeast.

### Loss of knowledge

It is extremely important to Novozymes to maintain a competitive edge in innovation. Hence safeguarding sensitive business information and critical assets against the global threat of theft is key. The Danish Ministry of Defence rates the overall risk of hacker attacks against Danish companies as "very high."

#### Potential impact

Business opportunities with new or existing customers could suffer greatly if information about Novozymes' unique technologies or production strains is stolen. Cybercrime and hacker attacks are global issues that could also negatively impact Novozymes if systems are inaccessible for a long time.

#### Mitigation

Our more than 6,500 granted or pending patents act as our defense against infringement by competitors. We regularly evaluate how we can best safeguard our production strains and protect our new discoveries. In terms of cybercrime, we continue to optimize our efforts in cyber security and, in 2018, we will establish a Cyber Defense team that will monitor all our systems and respond promptly to adverse developments.

### Disruption of The BioAg Alliance

Bayer's pending acquisition of Monsanto entails uncertainty for The BioAg Alliance, in which Novozymes and Monsanto are partners. The uncertainty relates to the ability and willingness to continue The BioAg Alliance and the conditions for doing so.

#### Potential impact

Novozymes invests heavily in BioAg R&D and in our partnership with Monsanto. A merged Bayer–Monsanto could expand the reach of and opportunities for The BioAg Alliance. However, there are risks of delays related to the integration of The Alliance within a newly consolidated Bayer–Monsanto.

#### Mitigation

The acquisition is expected to be concluded in 2018. Novozymes' short-term priority is to ensure the success of The BioAg Alliance and to derive full value from its product portfolio and especially its most recent additions to the portfolio: Accelaron® B-300 SAT and Accelaron® B-200 SAT. Novozymes is in a strong financial position and would be capable of continuing the BioAg activities in any eventuality.

## Mitigating actions taken related to the key risks identified for 2017

### Competition in industrial enzymes

Novozymes defends its market-leading position by focusing on strong innovation and novel solutions targeted at partners and customers.

In 2017, Novozymes' innovation pipeline made significant progress. In particular, advancements in our freshness & hygiene platform are expected to mitigate threats from competitors in Household Care. Product launches aimed at emerging markets and a multitiered pricing strategy also help give Novozymes a competitive edge. Our efforts to speed up our innovation pipeline and get closer to customers are also paying off, with the launch of new, tailored solutions.

In 2017, Novozymes continued to focus its innovation on key platforms to reshape the industry and challenge competition. Key focus areas included monitoring the competitive situation and concentrating on strengthening agility within the organization.

### Volatility of starch-based ethanol business

Novozymes aims to ensure that biofuels are a viable and sustainable commercial alternative to traditional fossil fuels. That is why we continuously invest in R&D to develop even better enzyme solutions for improving biofuel yield and profitability. We also monitor competitor pricing in the industry to ensure that we deliver an optimal price/performance ratio with our products.

In 2017, Novozymes launched Spirizyme®T, an advanced suite of glucoamylases that free up residual sugar in corn so that it can be fermented into ethanol. The product was received well by customers.

To defend against competition from alternative technologies, Novozymes worked to develop yeast strains. We conducted commercial trials on these yeast solutions in 2017.

Our growth depends on innovations of this kind and on close relationships with the customers who use them.

### Loss of knowledge

In 2017, Novozymes continued its active patent strategy by protecting discoveries, production strains, formulations and relevant know-how. Other actions were also taken to secure Novozymes' assets through a continuously updated global information security strategy, IT governance, perimeter protection and access control.

A risk assessment carried out for Novozymes in 2017 showed that the threat from external intruders had been reduced. This reflects an improvement in information security, faster incident response and improved security awareness among Management and employees.

In 2017, Novozymes decided to establish a Cyber Defense team, tasked with continuously monitoring and reporting on any activities that could impair our systems.

### Delay of BioAg commercialization

The BioAg Alliance continued to progress in 2017. The Alliance's first codeveloped product, Acceleron® B-300 SAT for corn, was launched at the end of 2016 and was received well by the market. Its second launch was Acceleron® B-200 SAT, which enhances nutritional uptake in soy plants.

In 2017, Novozymes' priority was to ensure the continued success of The Alliance with Monsanto. While Bayer's acquisition of Monsanto is expected to take place, the anticipated conclusion of the deal has been delayed to 2018. Due to this postponement, the risk of short-term delays to BioAg commercialization continues into 2018.

Novozymes will monitor the situation and believes that there is a positive outlook for value creation with Bayer–Monsanto in The BioAg Alliance.



## Risk management

### Looking beyond 2018

At Novozymes, we do not just look at risks affecting our business in the next 12 months; we also look at emerging risks capable of affecting our business, partners and customers in the longer term (i.e. in the next three years or more).

We monitor these macro trends through an Enterprise Risk Management process and other cross-functional trendspotting activities.

**“Some of these emerging risks also pose opportunities for a business such as Novozymes with our strong focus on sustainability and innovative solutions.”**

Novozyymes currently tracks three specific emerging risks. To prepare for this evolving risk landscape, we engage with key stakeholders to foster a constructive dialogue and prioritize innovation in this area. Some of these emerging risks also pose opportunities for a business such as Novozymes with our strong focus on sustainability and innovative solutions.



#### Resistance to new technology

There is growing consumer demand for health, wellness and natural products and, conversely, tighter regulatory control on the biotechnology and chemical sectors. We expect an acceleration of technology and new significant innovation for these areas, and consequently potential resistance.

Consumers are more health conscious and express growing concerns about the intended and unintended consequences of biotechnology and genetic engineering on society. Governments are increasingly scrutinizing issues related to environmental and human health risks, bioethics, gene technology and intellectual property rights.



#### Global political and economic instability

Growing volatility in the global economy could impair business growth. This is driven by a mounting public backlash against globalization and the rise of anti-establishment sentiment and trade protectionism.

In many countries, polarization relating to vital social issues is making it more difficult for leaders to agree and work to strengthen global and regional institutions and networks. This also poses a risk to the global consensus on climate change and sustainable development.



#### Water-constrained future

Global water demand is expected to outstrip supply by 2030. A growing middle class, climate change and a decline in water quality are leading to an increase in demand.

Several world regions are already experiencing severe water crises, including floods, polluted waterways and droughts. Government regulations increasingly focus on the availability of water, creating demand for solutions that reduce water consumption and improve wastewater quality.

# Palmora<sup>®</sup>: for more sustainable palm oil production

**From soap and cosmetics to cookies, chocolate and margarine, demand for products containing vegetable oil is growing. That translates into an increasing need for palm oil as it is the world's most widely used vegetable oil. It is important to squeeze every drop of oil out of the palm fruit as well as making the process as sustainable as possible for the future.**



Novozymes Palmora<sup>®</sup> can help achieve this and is now available in Malaysia and Indonesia, where 85% of global palm oil production occurs.

"Traditional tools to improve palm oil extraction have reached their limits," explains Rasmus von Gottberg, Vice President of Food & Beverages at Novozymes. "With Palmora<sup>®</sup>, we'll increase the operating efficiency of palm oil mills and help make the industry more sustainable. It's a good example of Novozymes innovation that helps meet customer needs in growth markets."

Palmora<sup>®</sup> uses enzymes to break down the cell walls of the palm fruit to release more oil.

The product helps meet the growing demand for palm oil by making the production process more efficient and improving yields, while also using fewer resources. The result is more palm oil from the same amount of land.

#### **Learning from our partners**

In 2017, Novozymes rolled out Palmora<sup>®</sup> to some of the largest palm oil producers in Malaysia and Indonesia. We are working closely with them to resolve their oil extraction challenges and optimize the output from their mills.

"Partnering with the largest palm oil producers gives us a big footprint in the market while enabling us to deliver on sales," continues

Rasmus von Gottberg. "We also aim to partner across the palm oil value chain and add value to the by-products of palm oil production." Improvements might include upgrading palm kernel cake meal (the product left over after crushing the palm fruit kernels) for chicken feed, generating biodiesel using crude palm oil or reducing the impact of wastewater discharged from palm oil mills.

#### **Becoming an industry asset**

The palm oil industry is associated with a number of sustainability challenges today and has been criticized by NGOs and the media for causing deforestation as well as for its exploitative labor practices. Novozymes recognizes the challenges within the palm oil

industry and firmly believes that it is possible to produce palm oil sustainably. Our ambition is to exert a positive influence within the palm oil industry by engaging responsibly with stakeholders and measuring our impact.

Along with our partners, we are members of the Roundtable on Sustainable Palm Oil (RSPO), an essential benchmark of good practice in the industry, and follow the RSPO's guidelines.



# Targets

**We measure progress on our purpose and strategic focus areas against a number of long-term financial and nonfinancial targets. These ambitious targets reflect our belief that our biological solutions can have a real and positive impact on the world.**

Our long-term targets guide us toward our overall goal of helping the world become more sustainable, at the same time as ensuring Novozymes' continued growth and value creation.

## **The triple bottom line**

Novozymes seeks to generate economic, environmental and social value. This is the triple bottom line approach we have always taken and which is engrained in our purpose, strategy and long-term targets.

## **Long-term sustainability targets**

We launched our six long-term sustainability targets in 2015, inspired by the UN's Sustainable Development Goals (SDGs). These 17 goals provide the foundation for our transformative plan of action to address the global challenges facing society now, and to an even greater extent in the coming years, such as widespread poverty and hunger, climate change and strains on natural resources such as water.

The SDGs encourage global businesses, national governments and the wider society to use and develop solutions that contribute toward sustainable growth. Novozymes was one of the first companies to link its business targets to the SDGs.

The opportunity to provide solutions to these global challenges translates into business opportunities for Novozymes. Our proactive approach toward addressing these challenges with new and innovative products means that we are in a good position to help customers face the challenges of today – and tomorrow.

## **Long-term financial targets**

Novozymes' long-term financial targets reflect a commitment to deliver economic value through organic sales growth at an attractive earnings level, while investing sensibly to drive additional long-term profitable sales growth. Delivering high economic value ensures that we are able to continue investing in innovation and driving a sustainability agenda.

With 4% organic sales growth, the 2017 results were satisfactory, and within the guidance provided at the start of the year. However, the growth falls short of the ambitions of a company such as Novozymes, which intends to have a profound impact on the world.

Growing organic sales is Novozymes' top priority, because only by selling more of our solutions will we achieve the sustainable impact we strive for and live up to our purpose. We expect to see organic sales growth of 4-6% in 2018. We will continue to invest in strengthening our leadership position within

industrial biotechnology and by unleashing the potential of our innovation pipeline (see Business model). We are confident that this will enable us to accelerate sales growth.

From the perspective of profitability and return on capital, Novozymes' other two long-term financial targets are EBIT margin of 26% or above, and ROIC including goodwill of 25% or above. The ROIC target excludes the impact of potential acquisitions. For 2018, we expect ROIC to be 24-25%. This is attributable to our relatively high capital investments in our new innovation campus in Lyngby, Denmark, expanding our capacity in Nebraska, US, and our new production site in Mumbai, India, to support our long-term growth ambitions.

## **Our long-term sustainability targets**

### **Reach**

6 billion people with our biological solutions by 2020

### **Educate**

1 million people about the potential of biology from 2015 to 2020

### **Catalyze**

5 global partnerships for change from 2015 to 2020

### **Deliver**

10 transformative innovations from 2015 to 2020

### **Save**

100 million tons of CO<sub>2</sub> in 2020

### **Enable**

Novozymes' employees to develop by 2020

## Targets

# Reach 6 billion people with our biological solutions by 2020

Every time a consumer uses a product that has been produced using or treated with Novozymes' technology, or contains one or more of our solutions, the world becomes a bit more sustainable. By 2020, we want 6 billion people worldwide to be using products made with our solutions at least once a week.

This target is closely linked to our sales performance. The target achievement is essentially an estimation of how many people use a product that was produced using, treated with or contains one or more Novozymes innovations.

**This target relates to SDG 12 Responsible consumption and production. Our solutions enable more efficient use of natural resources, lower use of chemicals and a reduced environmental impact. By giving more people access to biological solutions, we enable sustainable consumption and production.**

### Achievements in 2017

- In 2017, an estimated 5.2 billion consumers used more than one of our solutions on a weekly basis – up from 5.0 billion in 2016
- Brewing, laundry and starch industry sales in Africa, India and Southeast Asia were the main contributors to this growth

### What's next?

A favorable increase in reach is dependent on successful strategy execution in each industry and expanded sales in emerging markets.



## 5.2 billion

We now reach an estimated 5.2 billion people with our solutions on an annual basis.

## Case

# Custom-made for Asia and Africa



With solutions designed specifically for doing laundry in Africa and Asia, Novozymes is introducing more consumers to the benefits of enzymatic detergents.

People do laundry in different ways all over the world. For example, many African and Asian families do laundry by hand five to six times per week, with each wash often requiring up to six buckets of water. While habits differ, all consumers want clean clothes and a detergent that can remove stubborn stains.

Detergent producers in emerging markets understand these challenges and want tailored solutions.

### Removing tough stains

In 2017, Novozymes launched three new blends of Medley<sup>®</sup>, our suite of plug-and-play enzyme blends for liquid detergents. These unique blends remove embedded food stains, ensure whiteness and color care, and perform significantly better on cuff and collar stains. They also keep clothes looking new by removing damaged fibers from the surface of the fabric. These multienzyme blends enable

producers to stand out from the competition and build their brands.

Progress<sup>®</sup> In, also launched in 2017, is Novozymes' first product designed specifically for the broad detergent markets in the emerging markets. For use in powder detergents, the product can easily be applied to the detergent to remove the most common stains.

By replacing surfactants and chemicals with enzymes, Progress<sup>®</sup> In enables producers to spend less on chemicals and deliver a product aimed at emerging markets that allows consumers to do laundry with less water, energy and effort.



## Targets

# Educate 1 million people about the potential of biology from 2015 to 2020

Ensuring access to good-quality education for all is crucial for global sustainable development. Novozymes' employees have a wealth of knowledge about science and sustainability, and regularly engage with schools, universities and communities through various outreach programs. The more people we educate about biology, sustainability and the environment, the more they will get involved in creating and using sustainable biological solutions. The activities described in this target are purely for educational purposes and are not related to Novozymes' sales and marketing.

**This target relates to SDG 4 Quality education. By helping young people understand the potential of biology, Novozymes is helping them to acquire the knowledge and skills to promote sustainable development. Our program also ensures that we roll out new solutions to improve learning outcomes related to biology.**

### Achievements in 2017

In 2017, Novozymes educated more than 188,000 people – this brings our total to more than 310,000 since 2015. Our activities included:

- In the US, more than 40 events run by Novozymes employees helped to teach 21,000 parents and students about the wonders of biotechnology
- In Brazil, we sponsored book fairs, science fairs and other educational activities for high school students
- In India, we conducted three initiatives for children to learn more about biotechnology and science and to promote action toward a sustainable future
- Novozymes China ran interactive biology courses for children in Beijing. The Little Biologist initiative also showed how biotechnology could help achieve the SDGs and encouraged university students to share knowledge about biology
- During October and November, Novozymes employees taught elementary schoolchildren worldwide about fungi and enzymes as part of our Teach for Tomorrow program

### What's next?

In the coming year, we will build on the success of our programs across all regions. We also intend to develop new partnerships with relevant educational organizations.

## Case

# Igniting young minds



At Novozymes, we believe that sparking an early interest in biology and biotechnology positively impacts how children approach science-based learning and careers.

Studies show that children between the ages of six and 14 are capable of learning about biotechnology and other science subjects in a relevant and engaging way.

To spark a love of science in schoolchildren, we launched the Teach for Tomorrow initiative as part of the fifth annual European Biotech Week.

Novozyymes employees, irrespective of their scientific background, were encouraged to give local elementary school students a basic introduction to enzymes, fungi and biology.

Lessons included a simulation of how the mycelium of a fungus spreads underground and how the fungus uses enzymes to acquire energy. Children used simple tools such as a ball of yarn and pipe cleaners.

Employees received appropriate training and teaching materials from experts in biology and pedagogy from Copenhagen University.

Employees could also take a masterclass in biotechnology taught by in-house scientists. The class focused on protein engineering and how Novozymes finds enzymes in nature.

The Teach for Tomorrow initiative resulted in Novozymes employees teaching more than 3,000 children about the wonders of biology.

**“To spark a love of science in schoolchildren, we launched the Teach for Tomorrow initiative as part of the fifth annual European Biotech Week.”**

[Read more about our educational initiatives in Note 8.4 Corporate citizenship](#)

## Targets

# Catalyze 5 global partnerships for change from 2015 to 2020

To make the necessary impact on the world, we need strong partners dedicated to working with us to solve key global issues. By 2020, we aim to form five high-impact partnerships with public or private organizations that share our agenda and support Novozymes' commercial activities.

**This target relates to SDG 17 Partnerships for the Goals.**

### Achievements in 2017

below50 is an ongoing partnership created by the SE4All Sustainable Bioenergy Accelerator at the World Business Council. The partnership aims to help decarbonize transportation through the use of sustainable fuels that reduce CO<sub>2</sub> emissions by more than 50% compared with conventional fossil fuels.

In 2017, Novozymes focused on strengthening the below50 partnership to attract new members capable of creating regional hubs. below50 hubs now exist in Australia, Brazil and North America. The hubs focus on converting global climate commitments into practical country-specific action. In 2017, below50 collaborated closely with the BioFuture platform and the International Energy Agency (IEA) to promote the use of low-carbon fuels at large events in the UAE, China, the EU and Brazil. As a consequence:

- The International Civil Aviation Organization (ICAO) is moving ahead with its agenda to promote alternative aviation fuels
- The IEA published a bioenergy roadmap at COP23 that promotes low-carbon fuels and bioenergy
- The Food and Agriculture Organization (FAO), IEA Bioenergy and the International Renewable Energy Agency (IRENA) published a statement highlighting how more bioenergy can help countries meet the Sustainable Development Goals

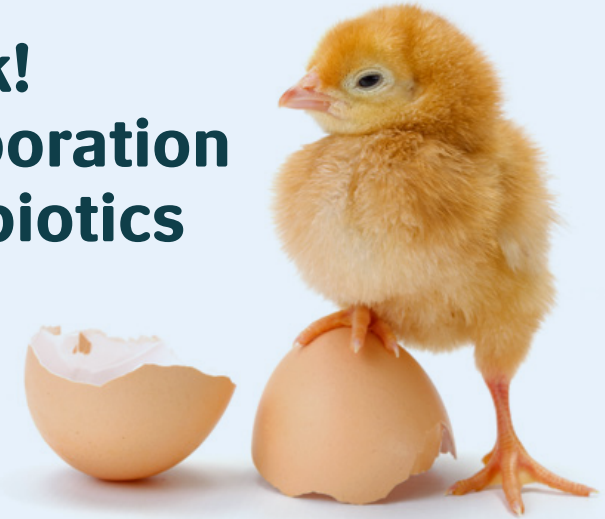
In June, below50 also officially joined the We Mean Business coalition and is now associated with the world's most successful programs for driving corporate sourcing of renewable energy. SE4ALL has also been invited to collaborate on setting up the African Biomass Data Initiative, which aims to optimize the use of biomass for energy in sub-Saharan Africa.

### What's next?

In 2018, we will continue to develop existing partnerships and work to create new promising partnerships.

## Case

# Cluck cluck! New collaboration within probiotics



Probiotics are naturally occurring live microbes with the power to improve the gut flora of poultry, swine and other animals. Robust gut flora can improve animal health.

In 2017, Novozymes and Boehringer Ingelheim entered into a strategic collaboration to develop and commercialize probiotic products for hatcheries, which is where eggs are hatched before the chicks move on to grow-out farms.

Every year, millions of chicks are born in hatcheries around the world. Administering probiotics as early as possible ensures that chicks get a healthy start in life, from the moment they hatch.

Probiotics are considered a natural alternative to antibiotic growth promoters. Rising global meat consumption, along with legislative and consumer demands, has led to growing calls for alternatives such as probiotics.

"The collaboration deepens Novozymes' capabilities within probiotics and helps poultry producers deliver greater quantities of safe, affordable protein," says Susanne Palsten Buchardt, Vice President of Animal Health & Nutrition.

The collaboration caters to the first crucial step in the bird's life cycle. Novozymes' solutions are also used in the important growth phase that follows – we already offer in-feed probiotics for the grow-out phase, supporting good gut health as chicks mature into full-grown birds. Our feed enzymes also improve the bird's uptake of nutrients from the feed, preventing loss of valuable nutrients.

The strategic collaboration with Boehringer Ingelheim is a good example of how we work together with partners to drive impact. We will continue to build and mature the partnership to increase its impact in the years to come.

## Targets

# Deliver 10 transformative innovations

from 2015 to 2020

Our aim by 2020 is to deliver 10 transformative innovations that create significant impact for our customers and make the world more sustainable. When evaluating our innovation efforts and pipeline, we consider the financial and transformative potential of each innovation and measure its impact against the SDGs.

**This target relates to SDGs 2, 6, 7, 9, 12 and 13. By working on transformative innovations, Novozymes is enhancing scientific research and upgrading the technological capabilities of industrial sectors globally. Our innovation will further contribute to achieving SDG impacts related to agriculture, water treatment, energy consumption, sustainable consumption, and production and climate change.**

### Achievements in 2017

With the launch of Frontia<sup>®</sup>, Novozymes entered a new area of the grain-milling process to deliver higher yields and other improvements in starch processing. Enzymes had not previously been used in the first step of starch processing, making this a transformative innovation.

In December 2017, we launched our first solution from the freshness & hygiene platform for Household Care. This new enzyme targets malodor in textiles and the kinds of stains that build up over time and are consequently very complex to treat, as they contain body soils as well as dirt and pollution from the environment. This is an exciting and transformative innovation, and one of our greatest breakthrough technologies for years in Household Care.

### What's next?

From 2015 to 2017, Novozymes delivered four transformative innovations. In addition to Frontia<sup>®</sup> and our new solution for freshness & hygiene, we launched Alterion<sup>®</sup> in 2015 and Acceleron<sup>®</sup> B-300 SAT in 2016.

An overview of some of the most promising programs in the innovation pipeline can be found in the Business model section.



**Read article on our new freshness & hygiene solutions**

## Case

# A step change in starch processing



Starch processing is a competitive industry in which manufacturers face tight margins. They require processes to help them improve the utilization and processing of raw materials in order to save on costs.

Starch is typically extracted from crops such as corn, wheat and potatoes, and converted into ingredients for use in a variety of products, including confectionery, soft drinks, pet food and cosmetics.

Launched in the second quarter of 2017, Frontia<sup>®</sup> is an enzymatic corn separation solution. This transformative innovation targets the wet-milling phase, which is the first stage in the starch conversion process. Enzymes have never before been used as part of this stage of the production process, making Frontia<sup>®</sup> a step change in the market.

Frontia<sup>®</sup> breaks down corn fibers and improves separation of protein. It releases starch and protein trapped in the corn fibers that would otherwise be inaccessible using

mechanical separation, thereby increasing the yield of these valuable process streams. This revolutionary product demonstrates how Novozymes continues to deliver significant innovation in the starch market.

### Molecules developed for other purposes

Two of the main molecular building blocks used in Frontia<sup>®</sup> come from enzymes originally developed for biomass conversion in the cellulosic ethanol and feed industries.

This kind of cross-fertilization of ideas is made possible by the cross-industry knowledge sharing and basic application research of Novozymes' R&D organization.

**“Enzymes have never before been used as part of this stage of the production process, making Frontia<sup>®</sup> a step change in the market.”**



## Targets

# Save 100 million tons of CO<sub>2</sub> in 2020

Our products help customers avoid CO<sub>2</sub> emissions and improve their sustainability performance by reducing their consumption of energy, raw materials and chemicals. To help mitigate climate change impacts across the value chain, we aim to save 100 million tons of CO<sub>2</sub> in 2020 through the application of our solutions.

**This target relates to SDG 13 Climate action. By enabling low-carbon production, Novozymes helps improve climate change mitigation capacity in a number of industries.**

### Achievements in 2017

We estimate that our solutions saved customers a total of 76 million tons of CO<sub>2</sub> in 2017. This figure is based on life cycle assessments (LCAs) spanning raw material extraction, production use and final disposal.

Our products for fuel ethanol and laundry make a significant contribution to this target. With fuel ethanol, the process of producing biobased feedstocks is less carbon intensive than fossil fuel extraction. Our laundry products enable consumers to wash at lower temperatures, thereby reducing energy consumption and avoiding carbon emissions.

### What's next?

Delivering on the CO<sub>2</sub> savings target is closely connected to the volume of enzymes brought to market. Fuel ethanol, in particular, has significant potential to contribute further to the achievement of the SAVE target.

On top of the volume growth of the existing product portfolio, we continue to explore other opportunities to increase our CO<sub>2</sub> savings. This includes expanding sales of existing or new products with positive CO<sub>2</sub>-saving profiles.



## 76 million tons

Our solutions saved customers an estimated total of 76 million tons of CO<sub>2</sub> in 2017.

## Case

# The Acre Study: more from 1 acre of land



In 2017, Novozymes published the Acre Study, which considers the potential of an average acre in a US corn field. Using conventional farming methods, that 1 acre produces 153 bushels of corn that is used to feed 900 chickens. However, by adding biological solutions to that 1 acre, the Acre

Study shows how the same land can produce more feed, food and energy with lower greenhouse gas emissions.



Read the full study on [Novozymes.com](https://www.novozymes.com)

## Targets

# Enable Novozymes' employees to develop by 2020

Our ability to grow and contribute to a better world is dependent on our ability to enable our employees to develop both personally and professionally.

This target will ensure that Novozymes builds the skills needed to deliver on its strategy. It will also ensure that all employees realize their full potential.

**This target relates to SDG 8 Decent work and economic growth and SDG 5 Gender equality.**

### Achievements in 2017

- 94% of all Novozymes employees have Individual Development Plans containing targets and actions. This exceeds our target of 85%
- By 2020, Novozymes aims to have 30% or more women in senior management. At the end of 2017, 26% of senior management were women
- For several years, Novozymes has conducted annual People's Opinion surveys to measure employee satisfaction. In 2017, we implemented a new quarterly survey focusing on a subset of questions from the People's Opinion survey
- We designed a new "Lead the Way" program that encourages leaders to excel in the workplace of tomorrow, amid ever-changing decision matrices and employee expectations
- Regional leadership pipelines were strengthened through targeted talent development initiatives

### What's next?

In the coming years, we will work on the following focus areas to enable Novozymes employees to develop their skills:

- Unfolding the potential of talents across our global organization, with particular focus on building capabilities and talent in our high-growth markets and high-investment business areas
- Further developing our leaders to enable them to lead a multigenerational, multicultural workforce in a changing business environment
- Promoting more agile and flexible working structures, and building the skills and mindset required to embrace digitalization

## Case

# Building better leaders

In 2017, 34 Novozymes leaders took part in the three-month Action Learning Initiative. The initiative engages leaders in real-life challenges, helps them network with their peers and provides coaching from senior leadership. The aim is to build and maintain the talent pipeline at Novozymes at the same time as delivering strong business results.

We asked two of the participants to reflect on their experiences:



**Jonathon Wang, Sr. Manager, Business Operations, US**

*"When we're stretched, we grow our intelligence and skills, and grow as leaders. The Action Learning Initiative gives leaders affirmation, but shows that more is expected of them.*

*"We discussed what a winning culture is at Novozymes, and what it takes to build self-confidence and courage, and deliver clear results that keep Novozymes the leader in the biotech space.*

*"I'm working to transmit that mentality to my team. I ask my account managers how they intend to achieve their results and improve their customer-focused activities. It empowers them, but it's also tough."*



**Viviane Pereira de Souza, Industry Sales Manager, Household Care, Brazil**

*"In Latin America, the culture is risk averse. But innovative companies enable their people to take risks and solve problems.*

*"I work in a mature, well penetrated industry, where my team and I know what has been tried before in the market. But we also know that markets and times change and that we can't miss an opportunity.*

*"The Action Learning Initiative is about changing our mindset: How to think outside the box, to create opportunity and tackle the fear of failure. I'm now encouraging that mindset in my team."*

# Outlook for 2018

## Sales outlook

Novozymes expects 4-6% organic growth for 2018. Using current spot levels as full-year estimates for the major currencies, Novozymes expects to see a negative 2018 impact of ~5 percentage points on sales growth in DKK. The Albumedix divestment late 2017 is also expected to impact DKK sales growth negatively in 2018 by around 1 percentage point. Lower recognition of deferred income (BioAg) in 2018 relative to 2017 by some DKK 30 million also reduces reported sales.

We expect a pick-up in organic sales growth throughout the year, mainly due to Agriculture & Feed seasonality and the Household Care contribution from the freshness & hygiene platform expected to impact the second half of the year.

Agriculture-related markets remain uncertain. However, based on current 2018 insight, we believe the uncertainty is covered within the guided range. As we move through 2018, we keep an eye especially on high US ethanol inventories and low prices, as well as selected crop prices, in particular corn and soybean.



**Household Care** organic sales growth is expected to be driven by increased penetration in emerging markets, where we intend to tap into consumer trends with our innovative enzymes for liquid detergents. The first sales from the freshness & hygiene platform are expected to increasingly contribute to growth from the second half of 2018. We

expect the reformulation focus from some of our large customers to continue, especially at the beginning of the year, which puts a dampener on growth. While the developed markets continue to be dynamic, innovation, performance and differentiation remain in focus for both existing and new customers.



**Food & Beverages** organic sales growth is expected to be driven by a continued step-up in commercial presence, especially in the emerging markets, as well as by new products. Baking is still expected to be impacted by price reductions in the North American freshkeeping market, while sales are expected to perform well in other markets. Enzymes for low-lactose dairy products are expected to continue their positive growth trend. In general, we expect continued good growth across industries.



**Bioenergy** organic sales growth is expected to be driven mainly by new product launches and increased penetration from innovation. We expect US ethanol production for 2018 to be roughly on par with 2017, but note that US ethanol inventory levels remain high. Good sales development is expected to continue, as technology introduced over the last 18 months is adopted in the marketplace. Yeast is added to the product portfolio early 2018 and will contribute to growth. Sales of enzymes

for biomass-based ethanol are expected to increase, but make up a small proportion of overall Bioenergy sales.



**Agriculture & Feed** organic sales growth is expected to be driven primarily by good growth in BioAg, but animal health and nutrition is also expected to deliver growth. New product launches will benefit sales, especially in the second half of the year. The changed sales pattern and shift of sales from the first to the second half of the year that has been ongoing in recent years should now largely be completed. We will continue to monitor the potential acquisition of Monsanto by Bayer, but currently do not expect this to have implications for our BioAg business in 2018. Sales to the agriculture-related markets are subject to some uncertainty, due primarily to global farm economics.

Novozymes expects to recognize around DKK 170 million of the deferred income in BioAg as revenue in 2018. Deferred income does not impact the calculation of organic sales growth rates; it impacts realized sales growth in DKK and has no cash flow impact.

## Financial outlook

	2017 realized	2018 outlook
Sales growth, organic	4%	4-6%
EBIT margin	27.9%	~28%
Net profit growth	2%	~0%
Net investments excl. acquisitions, DKKm	1,665	1,300-1,500
Free cash flow before acquisitions, DKKm	2,397	2,300-2,600
ROIC (including goodwill)	25.6%	24-25%
Avg. USD/DKK	660	600



**Technical & Pharma** is impacted by the divestment of Albumedix late 2017. The divestment will not impact organic growth. Looking ahead, the divestment will reduce some of the quarterly lumpiness in sales.



## Profit outlook

Reported EBIT margin in 2017 was 27.9%. Excluding one-time costs, the EBIT margin in 2017 was closer to 29%. Guidance for 2018 is ~28%. For 2018, we expect a strong negative impact from currencies, as well as a higher activity level on the commercial side to support growth opportunities, particularly in emerging markets. As currencies are experiencing high volatility, in particular the US dollar, a further weakening relative to what has been assumed in the guidance (6.00 USD/DKK) could impact the EBIT margin negatively. The DKK ~30 million lower deferred income expected in 2018 relative to 2017 also reduces reported EBIT by an identical amount. Sales growth and productivity improvements are expected to be supportive to margins.

In 2017, Novozymes transferred intellectual property (IP) assets from Switzerland to Denmark. This had a positive impact on the 2017 effective tax rate (ETR) of roughly 2 percentage points. Additional IP transfer will take place in 2018, and we expect to carry out further transfers over the next three years. Following these transfers, Novozymes is likely to see a higher ETR. Given the current visibility and interpretation of different country-specific tax legislation and levels, including in the US, Novozymes expects an ETR of 19-21% over the next 3-4 years. We are still evaluating the real net effect not only of the lowered US corporate tax rate, but also of other US tax changes.

Net profit growth is expected to be ~0% in 2018. The USD has been hedged through forward contracts at an average exchange rate of 6.18 USD/DKK. At this level, the US dollar is ~9% lower than the average USD/DKK in 2017.

Net investments are expected to be DKK 1,300-1,500 million. The relatively high investment level for 2018 concerns a continuation of the building of the innovation campus in Lyngby, Denmark, as well as the completion of the enzyme production facility in Mumbai, India, and the final parts of the capacity expansion in Nebraska, US.

Free cash flow before acquisitions is expected to be DKK 2,300-2,600 million.

Return on invested capital including goodwill is expected at 24-25%. The average calculation for invested capital now includes a higher end balance following the big investment programs that we announced early 2017.

## Currency exposure

From a currency perspective, we expect 2018 EBIT to be most exposed to fluctuations in the USD and EUR.

Other things being equal, a 5% movement in USD/DKK is expected to have an annual positive/negative impact on EBIT of DKK 110-130 million.

Other things being equal, a 5% movement in EUR/DKK is expected to have an annual positive/negative impact on EBIT of around DKK 200 million.

## Sustainability outlook

Novozymes has an ambition to continuously improve business operations across our value chain – making our operations more cost-effective, environmentally friendly and socially responsible. The triple bottom line is fundamental in terms of how our business is run.

Sustainability reporting is long term by nature, and determining metrics and type of reporting is under constant review and development. We aim for our targets to reflect our commitment to transparent sustainability reporting, and at the same time, for the targets to be relevant to Novozymes from a materiality perspective and auditable.

In January 2015, Novozymes introduced three long-term environmental targets for 2020, with the aim of measuring our resource efficiency relative to gross profit, in other words: the resource intensiveness of our gross profit. However, this way of measuring progress has not proven to be optimal, as short-term changes in gross profit, caused by e.g. currency movements, revised sales growth expectations and product mix, distort the picture of the actual sustainability performance.

We have decided to explore a better way of measuring our sustainability performance, as we want to stay at the forefront on this matter. Consequently, we have decided to cancel the three 2020 environmental targets. While exploring better long-term sustainability measurements, we introduce annual targets for water, energy and CO<sub>2</sub> emissions relative to organic sales growth. In general, we aim to keep growth in resource consumption lower than organic sales growth. We remain committed to continuing our legacy of taking a lead on sustainability disclosure, and providing detailed information on resource consumption data and types of resources in our annual reports.

## Key sustainability targets

Environment	2018 target	2020 target
Estimated reduction in CO <sub>2</sub> emissions through our customers' application of our products, million tons	≥ 80	100
Growth in absolute water usage*	< organic sales growth	
Growth in absolute energy usage*	< organic sales growth	
Growth in absolute CO <sub>2</sub> emissions*	≤ organic sales growth	
Renewable energy*	23%	30%
<b>People</b>		
Occupational accidents per million working hours*	≤ 1.5	≤ 1.0
Employee absence*	≤ 2.0%	≤ 2.0%
Women in senior management*	≥ 27%	≥ 30%
Satisfaction and motivation*	≥ 75	≥ 75
Enable employee development*	≥ 75	≥ 75
Talent utilization*	≥ 38%	
<b>Stakeholders</b>		
Customer satisfaction	≥ 40	
Medal-class rating from RobecoSAM	Medal	Gold

\* Included as management remuneration target.

# Cheers, Africa!

**Brewing is Novozymes' largest and most established industry in sub-Saharan Africa. Our enzymes are helping brewers use local raw materials to develop new recipes and produce some of Africa's most popular beers.**

Global breweries have an established footprint in Africa's beer markets, but they typically brew beers from grains imported from abroad. What's more, how these beers taste is often determined by what is popular outside of Africa.

Africa's young middle-class consumers want to enjoy good-quality beers at affordable prices and they are open to trying new products, such as cassava beer.

Fortunately, Novozymes' brewing enzymes can be optimized to work with local raw materials such as sorghum, cassava, barley and teff, enabling brewers to produce quality beers, optimize their process efficiency and save energy and raw materials.

By switching to local raw materials, brewers can develop new flavors and generate

significant cost savings. New tastes based on traditional African recipes are creating new consumer segments.

"Novozymes is working with some of the biggest brewers in Africa to change their approach and focus on local, rather than global," says Claudio Visigalli, Key Account Manager for Brewing at Novozymes.

"We're helping produce local beers from local raw materials by either integrating the raw materials into established brands or creating new brands. Our technology supports some of the most popular beers in the region," continues Romeo Markovic, Novozymes' Industry Sales Manager, Beverages.

#### **Raise a glass to cassava**

Together with Dutch group Barth-Haas, Novozymes recently produced a beer made

from cassava. This was presented to industry experts in September 2017 at the annual Drinktec conference in Munich, Germany, with the aim of showing that high quality and excellent taste can be achieved when brewing with local raw materials.

Cassava is a starch-rich, drought-resistant root vegetable grown in many countries in sub-Saharan Africa. By using cassava, African breweries can source their core raw material from local farmers, thereby supporting regional agricultural value chains and saving on the cost of importing and transporting foreign grain.

"With cassava, brewers can rediscover traditional beer recipes. Using our technology, they can produce beers to the highest quality and safety standards," concludes Romeo Markovic.



**"Our technology supports some of the most popular beers in the region."**



Read more about our solutions for brewing on [Novozymes.com](https://www.novozymes.com)



# Governance

A man in a white lab coat is smiling and looking down at a row of industrial washing machines in a laundry facility. The machines are white with stainless steel doors. In the background, another person is visible, and there are stacks of white linens on the left. The scene is brightly lit with a cool blue tone.



# Chairman's introduction

**A proactive and transparent corporate governance structure promotes sustainable business behavior and long-term value creation. In 2017, Novozymes' Board of Directors took important steps to leverage future opportunities for the company.**

At the Annual Shareholders' Meeting in February 2017, Novozymes' shareholders elected me as Chairman and Ms. Agnete Raaschou-Nielsen as Vice Chairman of the Board. We also welcomed new board members Ms. Kim Stratton and Mr. Kasim Kutay. Given these changes, 2017 was focused on consolidating the new Board and priming Novozymes for future growth.

## **Establishing a strong team**

As the new chairman, I spoke with each individual member about how they could best contribute to Novozymes' Board. The purpose was to ensure that not only do we have the right competencies on the Board but also that we utilize each member's skills and experience. The combined strength of all its members is what makes Novozymes' Board operate effectively. This strength also makes us the best sparring partner for the Executive Leadership Team.

During the year, the Board of Directors and board member Mr. Heinz-Jürgen Bertram made the joint decision to part ways in order to avoid any potential conflict of interest as the world of ingredients and industrial biotechnology develops. I would like to thank Mr. Bertram for his hard work and dedication to Novozymes.

## **Driving strategic direction**

As in previous years, the Board conducted reviews of Novozymes' business and of the mid- and long-term strategies for its main industries. We can see that we have good momentum for the strategic journey ahead. The divisions and functions have clear roadmaps and plans that are in progress. We can see that we benefit from our divisional setup, which has given us much closer links between divisions, application R&D and customers.

We also looked at Novozymes' competitive advantages and how we can help take advantage of what sets the company apart from its competitors.

Here is an update on what we see as key priorities for the coming years:

We aim to accelerate growth in our core business through a dedicated emerging-market push, especially within Food & Beverages and Household Care. This involves tailoring our solutions to local market needs, developing stronger partnerships with regional customers, providing more affordable solutions and expanding our physical presence.

With a strong core in place, we can expand and diversify our business by building new growth areas. Animal health and water are two promising areas that we intend to pursue. We will also consider how to engage in human health. Agriculture is already considered part of our core business, which we will continue to grow and expand based on the potential.

## **New Nomination and Remuneration Committee**

In 2017, the Board set up a new Nomination and Remuneration Committee consisting of three board members. The committee has taken a new approach to assessing the Board and its composition. It worked on proposing a new member of the Board and supported CEO Peder Holk Nielsen in the recruitment of Ms. Prisca Havranek-Kosicek as the new CFO of Novozymes.

In December 2017, the Board of Directors proposed that Ms. Patricia Malarkey be elected to the Board. Ms. Malarkey is an experienced R&D business leader from Scotland. She has more than 30 years' experience in the global agrochemical industry. I am convinced that Ms. Malarkey's strong research insight and

development experience, as well as her global perspective on a range of matters, will significantly contribute to the further development of Novozymes' innovation processes and agenda.

Establishing a diverse and talented team is important to ensure future growth in a global company. These were just a few of the activities and subjects we covered during this eventful year. I have enjoyed my first year as Chairman of the Board and look forward to 2018.



Jørgen Buhl Rasmussen  
Chairman of the Board of Directors  
Novozymes A/S

# Board of Directors: composition and responsibilities

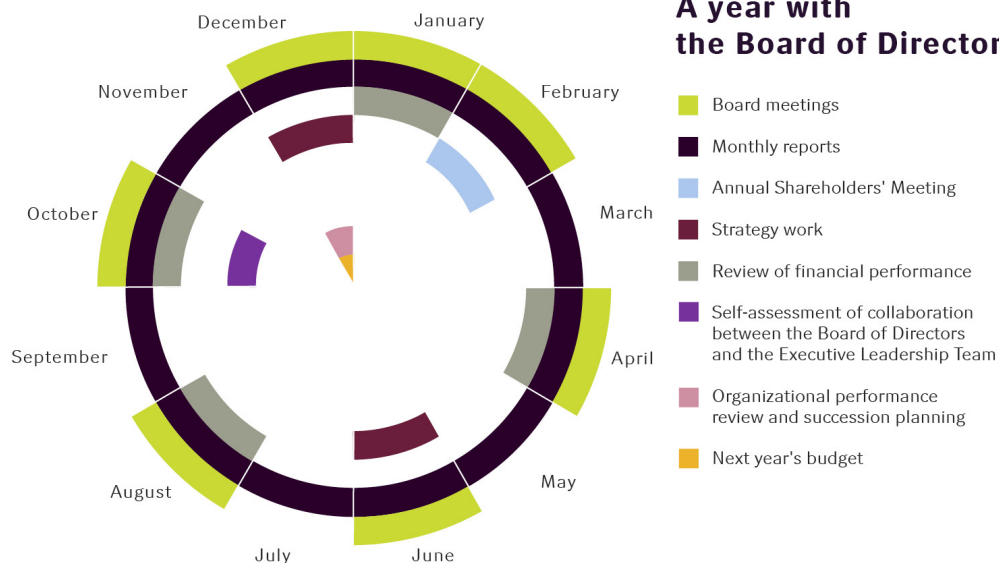
In accordance with Danish legislation, Novozymes has a two-tier management system comprising the Board of Directors and the Executive Leadership Team, with no individual being a member of both. The division of responsibilities between the Board of Directors and the Executive Leadership Team is clearly outlined and described in the Rules of Procedure for the Board of Directors and the Rules of Procedure for the Executive Leadership Team, available on Novozymes.com.

Novozyms' Articles of Association require the Board of Directors to have four to eight members elected at the Annual Shareholders' Meeting. Currently, the Board has six members. They are elected for one year at a time and

cannot be elected or re-elected after reaching the age of 70. Nominations are based on an evaluation of factors such as competencies, diversity, independence and prior performance.

The Board of Directors also includes three employee-elected members, who serve four-year terms. The Board of Directors is accountable to the company's shareholders for the management of the company. The composition of the Board of Directors must therefore be such that the combined competencies of the Board enable it to inspire, guide and oversee the company's development, and diligently address and resolve the issues and challenges faced by the company at any time.

## A year with the Board of Directors



### Audit Committee meetings

Committee member	Meetings attended
Lars Green	4
Agnete Raaschou-Nielsen	4
Jørgen Buhl Rasmussen	4

### Nomination and Remuneration Committee meetings

Committee member	Meetings attended
Jørgen Buhl Rasmussen	3
Agnete Raaschou-Nielsen	3
Kim Stratton	3

To ensure the right competencies and promote diversity, the following targets have been set for the composition of the Board of Directors:

1. At least half of the shareholder-elected board members shall be independent as defined in the Danish Recommendations on Corporate Governance.
2. At least 40% of the shareholder-elected board members shall have substantial international experience from the management of large corporations or institutions headquartered outside of Denmark.
3. One-third or more of the shareholder-elected board members shall be female, and one-third or more of the shareholder-elected board members shall be male.

All three targets were met in 2017. The required competencies are defined in a competency profile that specifies various personal characteristics, skills and experience. The individual competencies of the members of the Board of Directors are shown in the

presentation of the Board of Directors and Executive Leadership Team.

The Board's main responsibilities are to:

- Ensure the right management and organizational structure
- Supervise financial, social and environmental performance, and the Executive Leadership Team's operational management of the company
- Decide the overall management and strategic development of the company

In accordance with the Articles of Association and the Rules of Procedure for the Board of Directors, the Board has a Chairmanship consisting of two members – the Chairman and the Vice Chairman – that is responsible for assisting the Board of Directors in matters concerning the Executive Leadership Team's operational management of the company and reporting back to the Board of Directors. The Chairmanship is also responsible for planning and preparing meetings of the Board of Directors.

The Board of Directors established a Nomination and Remuneration Committee in 2017 to take over the matters relating to remuneration and nominations, which were previously carried out by the Chairmanship.

In addition, the Board of Directors has an Audit Committee that assists the Board of Directors in monitoring aspects relating to accounting, auditing, internal controls and financial, environmental and social reporting. Further information about the Audit Committee can be found on [Novozymes.com](http://Novozymes.com).

As part of the internal control system, all cases of identified fraud and all concerns raised are investigated and reported to the Audit Committee and the Board of Directors. 49 investigation cases were reported in 2017. None of the investigated fraud cases had a material financial impact on Novozymes. Further information on fraud can be found in Note 8.3 to the Consolidated financial statements.

#### **Charters and recommendations**

In laying down the management principles for Novozymes, the Board of Directors has followed the Recommendations on Corporate Governance that form part of the disclosure requirements applicable to companies listed on Nasdaq Copenhagen. These recommendations are available on [Corporategovernance.dk](http://Corporategovernance.dk). A detailed review of Novozymes' position on all of the recommendations and a description of the internal control and risk management system relating to financial reporting can be found in the statutory report on corporate governance pursuant to section 107b of the Danish Financial Statements Act, at [report2017.novozymes.com/governancereport2017](http://report2017.novozymes.com/governancereport2017).

The recommendations require companies to explain any noncompliance. Novozymes follows 45 of the 47 recommendations, the exceptions being:

The remuneration policy for the Executive Leadership Team contains no specific clause pertaining to the repayment of variable remuneration components paid on the basis of misstated information, as Novozymes considers the rules in Danish law to be sufficient in such cases (Recommendation 4.1.2).

Due to the limitations imposed by the Novo Nordisk Foundation's Articles of Association and Novozymes' ownership structure, the Board of Directors reserves the right in certain circumstances to reject takeover bids without consulting shareholders (Recommendation 1.3.1).

Furthermore, under the Danish Financial Statements Act (sections 99a and 99b) it is mandatory for large companies to report on corporate responsibility and equal opportunities. As a member of the UN Global Compact, Novozymes prepares a Communication on Progress, which is available under Sustainability at [report2017.novozymes.com/sustainability/commitment](http://report2017.novozymes.com/sustainability/commitment). Together with the integrated financial, environmental and social reporting, the Communication on Progress meets both the requirements for reporting on corporate responsibility and equal opportunities, and the UN Global Compact's advanced reporting criteria.

## **Changes to the Board of Directors**

On June 8, 2017, Novozymes A/S and Mr. Heinz-Jürgen Bertram mutually decided that Mr. Bertram would resign from Novozymes' Board of Directors with immediate effect. Heinz-Jürgen Bertram had been a strong contributor to Novozymes' strategic work since joining the Board of Directors in 2015. However, the Board of Directors and Heinz-Jürgen Bertram decided to part ways to avoid any potential conflict of interest as the world of ingredients and industrial biotechnology develops.

The election of board members will be held at the Annual Shareholders' Meeting on March 13, 2018, and the Board of Directors is proposing candidates for election for a one-year term. The Board of Directors is proposing the election of one new member, Ms. Patricia Malarkey. Ms. Malarkey is an experienced R&D and business leader. She has more than 30 years' experience in the global agrochemical industry. The Board is convinced that Ms. Malarkey's strong research insight and development experience as well as her global perspective on matters will significantly contribute to the further development of Novozymes' innovation processes and agenda. Ms. Malarkey is 52 years old and from Scotland.

Consequently, the Board of Directors has decided to propose the following candidates for the Board of Directors for election on March 13, 2018 for a one-year term:

- Jørgen Buhl Rasmussen as Chairman of the Board (currently Chairman)
- Agnete Raaschou-Nielsen as Vice Chairman of the Board (currently Vice Chairman)
- Lars Green as a member of the Board (currently board member)
- Kasim Kutay as a member of the Board (currently board member)
- Kim Stratton as a member of the Board (currently board member)
- Mathias Uhlén as a member of the Board (currently board member)
- Patricia Malarkey as a new member of the Board



Novozymes also works within the parameters of Touch the World, the company's values and commitments, and has committed to the principles of the UN Global Compact and the UN Convention on Biological Diversity.

#### Other Board-related information

The Board of Directors held seven meetings in 2017, with an overall attendance rate of 98%.

Any changes to the Articles of Association require that shareholders representing at least two-thirds of the total number of votes in the company are represented at the Shareholders' Meeting, and that at least two-thirds of the votes cast, as well as two-thirds of the voting capital represented at the meeting, are in favor of the proposal to change the Articles of Association.

The Annual Shareholders' Meeting has authorized the Board of Directors to allow the company to acquire treasury stock on an

ongoing basis, provided the nominal value of the company's total holding of treasury stock does not exceed 10% of its share capital at any time, cf. section 198 of the Danish Companies Act.

The purchase price must not deviate by more than 10% from the price quoted on Nasdaq Copenhagen on the date of acquisition. This authorization applies until April 1, 2018. In addition, the Board of Directors has been authorized to reduce the share capital.

Each year, one of the responsibilities of the Board of Directors is to assess whether the capital and share structure of Novozymes is optimal. The Board of Directors remains of the opinion that the share structure with A and B common stock is the best way to safeguard Novozymes' long-term strategy and development to the benefit of the company's shareholders and other stakeholders.

Regarding capital structure, Novozymes will continue to favor a conservative balance sheet, reflected by a target for net interest-bearing debt of 0-1x EBITDA. This target was met in 2017.

Novozymes is party to a number of partnership contracts that can be terminated by the other party in the event of significant changes to the ownership or control of Novozymes. A few contracts contain provisions that restrict Novozymes' licenses to use specific forms of technology in such situations.

Board member	Nationality	Board meetings attended	Board tenure	Election period
Jørgen Buhl Rasmussen <sup>1,2,4,5,7</sup>	Danish	● ● ● ● ● ● ●	2011	1 year
Agnete Raaschou-Nielsen <sup>1,3,4,5,7</sup>	Danish	● ● ● ● ● ● ●	2011	1 year
Heinz-Jürgen Bertram <sup>8</sup>	German	● ● ● ● ● ● ●	2015	1 year
Lars Green <sup>1,4</sup>	Danish	● ● ● ● ● ● ●	2014	1 year
Henrik Gørtler <sup>9</sup>	Danish	● ● ● ● ● ● ●	2000	1 year
Kasim Kutay <sup>1</sup>	British	● ● ● ● ● ● ●	2017	1 year
Kim Stratton <sup>1,5,7</sup>	Australian	● ● ● ● ● ● ●	2017	1 year
Mathias Uhlén <sup>1,5</sup>	Swedish	● ● ● ● ● ● ●	2007	1 year
Lena Bech Holskov <sup>6</sup>	Danish	● ● ● ● ● ● ●	2013	4 years
Anders Hentze Knudsen <sup>6</sup>	Danish	● ● ● ● ● ● ●	2013	4 years
Lars Bo Køppler <sup>6</sup>	Danish	● ● ● ● ● ● ●	2010	4 years

1. Elected at the Shareholders' Meeting.

2. Chairman of the Board of Directors.

3. Vice Chairman.

4. Member of the Audit Committee.

5. Independent.

6. Employee representative.

7. Member of the Nomination and Remuneration Committee.

8. Resigned on June 8, 2017.

9. Resigned on February 22, 2017.

## Diversity on the Novozymes Board

One-third or more of Novozymes' shareholder-elected board members shall be female, and one-third or more of the shareholder-elected board members shall be male.



**2 out of 6**  
shareholder-elected board members are women.

# My first year on the Board of Novozymes

**Kim Stratton joined Novozymes' Board of Directors in February 2017. We asked her a few questions about her first year on the Board.**



Kim Stratton is Head of International Commercial at Shire, a company working to treat rare diseases. She brings experience within sales, marketing, innovation pipeline management and sustainability to her role as a member of Novozymes' Board of Directors.

## **How has working on the board of a Danish listed company been for you?**

It's been about getting to know the business, the leaders, the culture, and the opportunities and issues that the business faces. And about starting to understand how I can add value and contribute to the well-being of Novozymes.

The dynamics and chemistry at board level are not too dissimilar from what I've experienced in other companies. Of course, it's very Danish, but it feels like a global company.

What's new to me is having the employee representatives serving directly on the Board. It's healthy for the company's future, because it's healthy to hear directly from the employees. Nothing is filtered – I like that.

## **What was it about Novozymes that made you decide to join the Board?**

Novozymes' strong innovation and sustainability profile really got my attention. As I've become better acquainted with the company, I've seen just how much Novozymes has to offer so many customers in various industries. The impact of small components, such as microorganisms and enzymes, is impressive. I firmly believe there are even more opportunities for Novozymes to capture future growth, and for the benefit of not only Novozymes, but also the world.

## **You have a commercial background, with experience of high-tech, innovation-led organizations. How does this influence your role on the Board?**

The biotech industry is both technical and commercial. You have to be out there with the science and the evidence, but also understand the global nature of the business, and understand how innovation will create opportunities.

You also need to understand the commercial and economic aspects and how they impact our business performance. This fits quite well with my position on the Novozymes Board.

## **Does your work with Shire provide any learnings for Novozymes?**

The closest resemblance is in the effect of innovation and how you bring it to both developed and emerging markets. You can't cut and paste innovation from developed markets to emerging markets – you have to embed the innovation into the unique dynamics of individual markets.

It's also about leadership, your understanding of those markets, and how you tailor innovation to the unmet needs in that market.

# Board of Directors

**Our nine-member Board of Directors and six-member Executive Leadership Team comprise broad and global management experience, comprehensive biotech expertise and in-depth knowledge of Novozymes' business. The members' competencies combine to ensure expert management of the company.**



## **Jørgen Buhl Rasmussen**

Born 1955. Chairman of the Board since 2017. Adjunct Professor at Copenhagen Business School. Member of the Audit Committee and chairman of the Nomination and Remuneration Committee. Member of the Board since 2011. Elected for one year at a time.

### **Board positions**

#### **Chairman:**

F. Uhrenholt A/S

### **Member:**

Smurfit Kappa Group  
Human Practice Foundation  
Advisory Board of Axcel

### **Special competencies**

International business and management expertise, specifically within sales, marketing, branding and acquisitions, and financial and accounting expertise.



## **Agnete Raaschou-Nielsen**

Born 1957. Vice Chairman of the Board since 2017. Member of the Audit Committee and of the Nomination and Remuneration Committee. Member of the Board since 2011. Elected for one year at a time.

### **Board positions**

#### **Chairman:**

Arkil Holding A/S  
Brdr. Hartmann A/S  
Danske Invest, three other UCITS funds and two AIF funds

### **Member:**

Aktieselskabet Schouw & Co.  
Danske Invest Management A/S

### **Member of Audit Committee:**

Aktieselskabet Schouw & Co.

### **Special competencies**

Expertise within business development and acquisitions, macroeconomics and intellectual property rights, and financial and accounting expertise.



## **Lars Green\***

Born 1967. Executive Vice President, Business Services and Compliance, Novo Nordisk A/S. Chairman of the Audit Committee. Member of the Board since 2014. Elected for one year at a time.

*\* This board member is not regarded as independent in the sense of the definition in the Danish Recommendations on Corporate Governance that apply to Danish listed companies.*

### **Special competencies**

In-depth knowledge of the Novo Group's business, international experience from managing global biotechnology and biopharma companies, and financial and accounting expertise.





### **Kasim Kutay\***

Born 1965. CEO, Novo Holdings A/S. Member of the Board since 2017. Elected for one year at a time.

#### **Board positions**

##### **Member:**

Novo Nordisk A/S  
ConvaTec Plc

*\* This board member is not regarded as independent in the sense of the definition in the Danish Recommendations on Corporate Governance that apply to Danish listed companies.*

#### **Special competencies**

Broad experience within biotechnology, mergers and acquisitions, and financial and accounting expertise.



### **Kim Stratton**

Born 1962. Head of International Commercial, Shire International GmbH. Member of the Nomination and Remuneration Committee. Member of the Board since 2017. Elected for one year at a time.

#### **Board positions**

##### **Member:**

European Federation of Pharmaceutical Industries and Associations (EFPIA)

#### **Special competencies**

Broad international commercial experience within sales and marketing, emerging markets, innovation pipeline management and sustainability.



### **Mathias Uhlén**

Born 1954. Professor at the Royal Institute of Technology (Sweden) and at the Technical University of Denmark (DTU). Member of the Board since 2007. Elected for one year at a time.

#### **Board positions**

##### **Chairman:**

Atlas Antibodies AB  
Antibodypedia AB  
ScandiBio Therapeutics AB

##### **Vice Chairman:**

Affibody Medical AB

##### **Member:**

Bure Equity AB

#### **Special competencies**

Broad experience in research and biotechnology.



### **Lena Bech Holskov**

Born 1967. Safety Adviser.  
Employee representative.  
Member of the Board since  
2013. Elected for four years at  
a time.



### **Anders Hentze Knudsen**

Born 1959. Senior Operator.  
Employee representative.  
Member of the Board since  
2013. Elected for four years at  
a time.



### **Lars Bo K ppler**

Born 1962. Technician.  
Employee representative.  
Member of the Board since  
2010. Elected for four years at  
a time.

# Executive Leadership Team



## Peder Holk Nielsen

Born 1956. President & CEO.

### Board positions

#### Member:

Hempel A/S  
LEO Pharma A/S

### Education

Holds a Ph.D. and an M.Sc. in Chemical Engineering from the Technical University of Denmark (DTU) and a B.Com. in International Business Management from Copenhagen Business School, Denmark.



## Tina Sejersgård Fanø

Born 1969. Executive Vice President, Agriculture & Bioenergy.

### Board positions

#### Member:

DLF A/S

### Education

Holds an M.Sc. in Chemical Engineering from the Technical University of Denmark (DTU), as well as a BA in philosophy and education from Copenhagen University, Denmark.



## Andrew Fordyce

Born 1963. Executive Vice President, Food & Beverages.

### Education

Holds a Ph.D. in Chemical Engineering from the University of Texas at Austin, US.

### Special competencies

Andrew Fordyce is responsible for application research, technical services, sales and marketing in the Food & Beverages division. His career has moved from pure engineering to a strong focus on value generation for customers. Previous responsibilities include global sales and marketing, strategic account management and technical service strategy.





## Prisca Havranek-Kosicek

Born 1975. CFO & Executive Vice President, Corporate Functions as of February 1, 2018.

### Board positions

#### Member:

Allianz Elementar Versicherungs-AG  
Allianz Elementar Lebensversicherungs-AG

### Education

Holds a Ph.D. in Business Administration from the Vienna University of Economics and Business, Austria.



## Anders Lund

Born 1973. Executive Vice President, Household Care & Technical.

### Education

Holds an M.Sc. in Economics from Aarhus University, Denmark.

### Special competencies

Anders Lund is responsible for application research, technical services, sales and marketing in the Household Care & Technical division. He has a strong commercial and strategic background as well as extensive experience of building and maintaining global customer relationships.



## Thomas Videbæk

Born 1960. COO & Executive Vice President, Research, Innovation & Supply.

### Board positions

**Member:**  
Evolva SA

### Education

Holds a Ph.D. and an M.Sc. in Chemical Engineering from the Technical University of Denmark (DTU) and a B.Com. in International Business from Copenhagen Business School.

### Special competencies

Thomas Videbæk is responsible for Novozymes' Research, Innovation & Supply unit. The unit has core research at its center and focuses on developing new biological solutions and production optimization – from discovery to large-scale manufacturing. The unit also ensures the supply and quality of our products and incubation of new platforms. Thomas Videbæk has been a central driver of business ventures outside Novozymes' established areas for several years. He also has broad knowledge of sales and customer solutions and supply chain operations.

# Remuneration report

**At Novozymes, our executives work to promote the long-term interests of our shareholders, and the remuneration of the Board of Directors and the Executive Leadership Team supports this objective. Most of the targets set for the short-term cash-based incentive program were met in 2017, and the Executive Leadership Team received on average 68% of the maximum.**

## General remuneration policy

Novozyymes' remuneration policy for managers and other employees is designed to both encourage strong individual performance and support Novozymes' overall value creation.

Remuneration consists of a base salary, pension contributions, a cash bonus and stock-based incentive programs. These components are linked to the employee's individual performance and to the level of achievement of Novozymes' financial, social and environmental targets.

The remuneration policy aims to provide managers and other employees with a competitive financial package, which we review regularly against external benchmarks.

## Remuneration of the Board of Directors

The remuneration of the Board of Directors comprises a fixed fee and is not based on incentives.

The Board of Directors assesses the fees paid to the Board annually, according to the recommendations of the Nomination and Remuneration Committee. In making its

recommendations, the Committee is guided by relevant benchmarks, including Novozymes' peers in Denmark and the rest of Europe.

The Board of Directors' remuneration for the year is approved at the Annual Shareholders' Meeting.

Board members receive a fixed base fee. This was DKK 500,000 in 2017, the same as it has been since 2015. The Chairman and the Vice Chairman receive a fee that is three times and two times the base fee respectively.

## Remuneration paid to individual members of the Board of Directors

DKK '000	2017			2016		
	Board of Directors	Committees	Total	Board of Directors	Audit Committee	Total
Jørgen Buhl Rasmussen	1,417	250	1,667	917	208	1,125
Agnete Raaschou-Nielsen	917	250	1,167	583	250	833
Mathias Uhlén	500	-	500	500	-	500
Anders Hentze Knudsen	500	-	500	500	-	500
Lars Bo Køppler	500	-	500	500	-	500
Lena Bech Holskov	500	-	500	500	-	500
Lars Green	500	500	1,000	500	500	1,000
Kasim Kutay*	417	-	417	-	-	-
Kim Stratton*	417	208	625	-	-	-
Henrik Gürtler**	250	-	250	1,500	-	1,500
Heinz-Jürgen Bertram***	219	-	219	500	-	500
Lena Olving****	-	-	-	83	42	125
<b>Remuneration</b>	<b>6,137</b>	<b>1,208</b>	<b>7,345</b>	<b>6,083</b>	<b>1,000</b>	<b>7,083</b>

\* Joined on February 22, 2017.

\*\*\* Resigned on June 8, 2017.

\*\* Resigned on February 22, 2017.

\*\*\*\* Resigned on February 25, 2016.

The disclosed remuneration for board members excludes minor mandatory social security contributions paid by Novozymes. It also excludes reimbursed expenses that board members have incurred in connection with board meetings, such as travel and accommodation.

For committee work (the Audit Committee and the Nomination and Remuneration Committee), the Chairman and other committee members receive a further one base fee and half a base fee respectively. However, the Chairman and the Vice Chairman of the Board do not receive this additional fee if they are elected to the Nomination and Remuneration Committee.

The total fee to the Board of Directors increased from DKK 7.1 million in 2016 to DKK 7.3 million in 2017. This is attributable to the additional fees related to the newly established Nomination and Remuneration Committee.

The Board of Directors has the option to grant an additional fee to individual board members for extraordinary board work. No board members were granted such fees in 2017.

#### Remuneration of the Executive Leadership Team

The Board of Directors seeks to incentivize the Executive Leadership Team to ensure Novozymes' continued positive development and, as a result, good value creation for Novozymes' shareholders. The Board finds that the best results are achieved when a relatively high proportion of an executive's total remuneration is dependent on the achievement of individual targets and on meeting Novozymes' financial, social and environmental targets.

The Executive Leadership Team's remuneration comprises a base salary, pension contributions, a cash bonus scheme, stock-based incentive programs and benefits (car, phone, etc.).

Compared with Novozymes' peers, the variable part of the total remuneration (cash bonus and stock-based programs) is relatively large. This is because the Board of Directors sets the base salary for members of the Executive Leadership Team at a level that is slightly below the average for a sample of comparable Danish companies.

In 2017, the ratio of the Chief Executive Officer's total remuneration and the median employee's remuneration was 55, which is on par with the average ratio of 55 for the 800+ companies assessed by RobecoSAM in 2015.

#### The following members of the current Board of Directors hold shares of stock in Novozymes A/S

Shares of stock	Shares of stock at Jan. 1, 2017	Purchased during the year	Sold during the year	Shares of stock at Dec. 31, 2017	Market value DKK million
Jørgen Buhl Rasmussen	2,000	-	-	2,000	0.7
Agnete Raaschou-Nielsen	430	-	-	430	0.2
Mathias Uhlén	650	-	-	650	0.2
Anders Hentze Knudsen	356	-	-	356	0.1
Lena Bech Holskov	270	830	-	1,100	0.4
Lars Bo Køppler	-	360	-	360	0.1
<b>Board of Directors</b>	<b>3,706</b>	<b>1,190</b>	<b>-</b>	<b>4,896</b>	<b>1.7</b>

Members of the Board of Directors are not granted stock options or stock awards. However, employee-elected members hold a limited number of stock options in Novozymes A/S due to Group-wide employee stock option programs.

#### Remuneration paid to individual members of the current Executive Leadership Team

DKK million	Salary	Cash bonus	Defined contribution plans	Expensed incentive programs	Total remuneration
Peder Holk Nielsen	8.3	2.3	2.8	12.0	25.4
Anders Lund*	4.3	1.0	1.2	4.9	11.4
Andrew Fordyce*	4.4	1.2	1.3	6.7	13.6
Benny D. Loft**	2.4	-	0.5	3.2	6.1
Tina Sejersgård Fanø*	4.4	1.0	1.2	4.9	11.5
Thomas Videbæk	6.0	1.7	1.8	8.0	17.5
<b>Total remuneration 2017</b>	<b>29.8</b>	<b>7.2</b>	<b>8.8</b>	<b>39.7</b>	<b>85.5</b>

Peder Holk Nielsen	8.2	1.1	2.4	9.1	20.8
Anders Lund	4.4	0.6	1.0	3.2	9.2
Andrew Fordyce	5.0	0.6	1.2	6.1	12.9
Benny D. Loft	4.8	0.6	1.2	6.1	12.7
Tina Sejersgård Fanø	3.8	0.6	1.0	3.1	8.5
Thomas Videbæk	5.7	0.8	1.5	6.1	14.1
Per Falholt***	0.8	-	0.2	1.0	2.0
Thomas Nagy***	0.8	-	0.2	1.0	2.0
<b>Total remuneration 2016</b>	<b>33.5</b>	<b>4.3</b>	<b>8.7</b>	<b>35.7</b>	<b>82.2</b>

\* Non-registered member of the Executive Leadership Team.

\*\* Resigned on June 15, 2017. Severance pay not included in the remuneration figures.

\*\*\* Resigned on February 8, 2016.

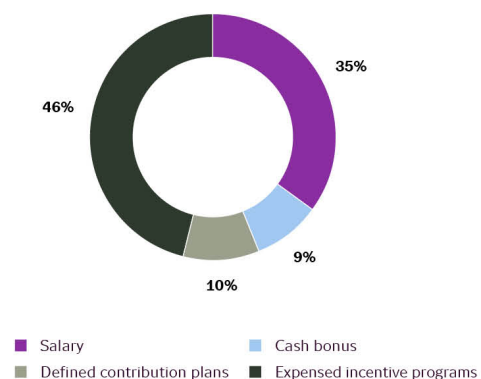


In December 2017, Novozymes announced the appointment of a new Chief Financial Officer, Prisca Havranek-Kosicek, who will join the Executive Leadership Team on February 1, 2018. Prisca Havranek-Kosicek replaces former CFO Benny D. Loft, who left Novozymes in June 2017. Benny D. Loft's severance package was fully expensed in 2017. The severance package consists of salary and bonuses during the notice period (12 months) as well as termination compensation (24 months), totaling DKK 20.1 million. Furthermore, Benny D. Loft was awarded stock and stock options representing a fair value of DKK 13.7 million.

In 2017, all members of the Executive Leadership Team received a 1.5% increase in the base salary.

The Executive Leadership Team has a defined contribution pension scheme, with the pension contribution representing between 25% and 30% of the base salary and the cash bonus.

### Composition of Management remuneration 2017



The maximum annual cash bonus is equivalent to five months' fixed base salary plus pension contributions. The amount of the cash bonus is dependent on the degree of fulfillment of:

- Individual targets agreed with the Chief Executive Officer (the Chairman for the Chief Executive Officer), not exceeding three months' salary
- The company's annual EBIT target. If this fundamental condition is met, the bonus, which cannot exceed two months' salary, is adjusted for the achievement of targets set for social and environmental performance

For 2017, the cash bonus based on individual targets was on average 78% of the maximum bonus. The cash bonus related to Novozymes' operational targets was 50% of the maximum bonus, as the EBIT target was met while some of the sustainability targets were not.

The targets for the incentive program covering the period 2014-2016 were met, and the full program was awarded in January 2017. As a result, 215,974 shares associated with the program were released to the Executive Leadership Team in January 2017.

A new three-year incentive program has been set up for the Executive Leadership Team, covering the period 2017-2019. The program complies with the general guidelines for remuneration of the Board of Directors and the Executive Leadership Team of Novozymes A/S approved at Novozymes' Annual Shareholders' Meeting. See the full guidelines on Novozymes.com.

The value of the three-year program was approximately DKK 162 million as of January

1, 2017. The value of the program corresponds to the aggregated annual remuneration of the Executive Leadership Team in 2017-2019 (base salary, pension contributions and maximum cash bonus).

The program is an equal stock and stock option program. Awards are dependent on accumulated economic profit generated as well as the average organic sales growth during the period:

- A total of up to 75% of the program will be allocated if economic profit accumulated for the three years reaches DKK 7.5 billion. If economic profit of DKK 5.5 billion is generated over the period, 50% of the stock and stock options allocated to the economic profit pool will be awarded. Between the two points, a proportional number of stock and stock options will be awarded. If the accumulated economic profit is below DKK 5.5 billion, no stock or stock options will be awarded under the economic profit pool

For 2017, the economic profit generated was DKK 2.6 billion, equaling 35% of the DKK 7.5 billion target.

- A total of up to 25% of the program will be allocated if Novozymes delivers 6% organic sales growth on average over the three-year period. If average organic sales growth of 3% is delivered, 50% of the stock and stock options allocated to the sales growth pool will be awarded. Between the two points, a proportional number of stock and stock options will be awarded. If the average sales growth is below 3%, no stock or stock options will be awarded under the sales growth pool

For 2017, organic sales growth reached 4%.

The stock was allocated in January 2017 and will be released in January 2020 in accordance with the level of target achievement, while the stock option program is a three-year incentive program with annual allocations. In 2017, 478,444 stock options were granted to the Executive Leadership Team. The allocations for 2017-2019 will be adjusted in January 2020 in relation to the level of target achievement. The awarded stock options have a vesting period of three years, after which there is an exercise period of five years.

The incentive program includes a maximum clause that gives the Board of Directors the option to reduce the number of stock and stock options that are allocated. The reduction can be implemented if the intrinsic value of the stock and stock options for the Executive Leadership Team totals more than DKK 324 million on the date in January 2020 on which the Annual Report for 2019 is approved.

### Economic profit definition

Economic profit is defined as: adjusted operating profit (NOPAT) less (average invested capital \* WACC).

For the calculation of the economic profit in the long-term incentive program, operating profit is adjusted for hedging results to eliminate the impact of currency fluctuations as well as for any impacts from major acquisitions and divestments. A fixed WACC of 6% is used during the entire program period.

Prisca Havranek-Kosicek, who recently joined Novozymes as CFO, will take part in the 2017-2019 Executive Leadership Team's incentive program on a proportional basis from February 1, 2018.

The members of the Executive Leadership Team have contracts of employment containing standard conditions for executive officers of Danish listed companies, including the periods of notice that both parties are required to give

and noncompetition clauses. If an executive officer's contract of employment is terminated by the company without any misconduct on the part of the executive officer, the executive officer has a notice period of 12 months. In

addition to the notice period, the executive officer has a right to compensation which amounts to between one and two years' base salary and pension contributions, depending on the position held.

**The following members of the Executive Leadership Team hold shares of stock in Novozymes A/S**

Shares of stock	Shares of stock at Jan. 1, 2017	Change in Management	Purchased during the year	Sold during the year	Shares of stock at Dec. 31, 2017	Market value DKK million
Peder Holk Nielsen	82,188	-	216,081	(89,000)	209,269	74.2
Anders Lund	2,184	-	12,439	(14,477)	146	0.1
Andrew Fordyce	-	-	44,778	(44,778)	-	-
Benny D. Loft	2,260	(2,260)	-	-	-	-
Tina Sejersgård Fanø	2,113	-	27,674	(19,609)	10,178	3.6
Thomas Videbæk	-	-	44,778	(44,778)	-	-
<b>Executive Leadership Team</b>	<b>88,745</b>	<b>(2,260)</b>	<b>345,750</b>	<b>(212,642)</b>	<b>219,593</b>	<b>77.9</b>

**The following members of the Executive Leadership Team hold stock options in Novozymes A/S**

Stock options	Options at Jan. 1, 2017	Change in Management	Additions during the year	Exercised during the year	Options at Dec. 31, 2017	Market value DKK million
Peder Holk Nielsen	495,636	-	149,901	(121,215)	524,322	52.6
Anders Lund	95,559	-	76,203	-	171,762	18.6
Andrew Fordyce	255,105	-	76,203	-	331,308	33.4
Benny D. Loft	249,614	(249,614)	-	-	-	-
Tina Sejersgård Fanø	97,716	-	76,203	(15,609)	158,310	16.4
Thomas Videbæk	249,614	-	99,934	-	349,548	35.1
<b>Executive Leadership Team</b>	<b>1,443,244</b>	<b>(249,614)</b>	<b>478,444</b>	<b>(136,824)</b>	<b>1,535,250</b>	<b>156.1</b>

**The following members of the Executive Leadership Team hold stock awards in Novozymes A/S**

Stock awards	Awards at Jan. 1, 2017	Change in Management	Additions during the year	Released during the year	Awards at Dec. 31, 2017	Market value DKK million
Anders Lund	5,090	-	-	(5,090)	-	-
Tina Sejersgård Fanø	4,633	-	-	(4,633)	-	-
<b>Executive Leadership Team</b>	<b>9,723</b>	<b>-</b>	<b>-</b>	<b>(9,723)</b>	<b>-</b>	<b>-</b>

**Remuneration of senior leadership**

The remuneration of Novozymes' senior leadership (178 vice presidents and directors) is in line with the general remuneration policy.

Incentive programs for vice presidents and directors have been established covering the period 2017-2019.

The program for the vice presidents largely follows the same mechanisms as the program for the Executive Leadership Team.

The program for the directors is a stock option program that includes the same targets for organic sales growth and economic profit as the other programs. Furthermore, awards are linked to the achievement of annual EBIT and sustainability targets.

Further information on the incentive programs for these employee groups can be found in Note 6.2 to the Consolidated financial statements, which also includes an overview of outstanding stock options.

# The Novozymes stock

**The Novozymes stock performed very well in 2017, with the share price increasing by 46% versus 2016, 33% above the OMXC20CAP. DKK 3.2 billion was returned to shareholders via a DKK 2.0 billion stock buyback program and a dividend payment of DKK 1.2 billion. A new stock buyback program worth up to DKK 2.0 billion is planned for 2018.**

The Novozymes stock is listed on Nasdaq Copenhagen and included in the OMX Copenhagen CAP 25 index.

## Shareholders

Novozyymes' common stock consists of two types: A shares and B shares, both with a nominal value of DKK 2 per share. All A stock is held by Novo Holdings A/S, and an A share carries 10 times as many votes as a B share. At the end of 2017, Novo Holdings A/S held 25.5% of the total common stock and, through its holding of the A stock and a proportion of the B stock (24,031,400 shares), controlled 71.2% of the votes. Novo Holdings A/S is wholly owned by the Novo Nordisk Foundation, and Novozymes is therefore included in the consolidated financial statements of the Novo Nordisk Foundation.

At year-end, Novozymes had more than 55,000 shareholders, of whom 95% were private shareholders in Denmark. Fifty institutional investors, including Novo Holdings A/S, owned approximately 50% of the B shares. Roughly 70% of the B shares were held outside of Denmark. Novozymes held 4.8% of the

B shares, equivalent to 4% of the total common stock.

Besides Novo Holdings A/S, Baillie Gifford & Co. held more than 5% of Novozymes' B shares at December 31, 2017.

## Stock performance

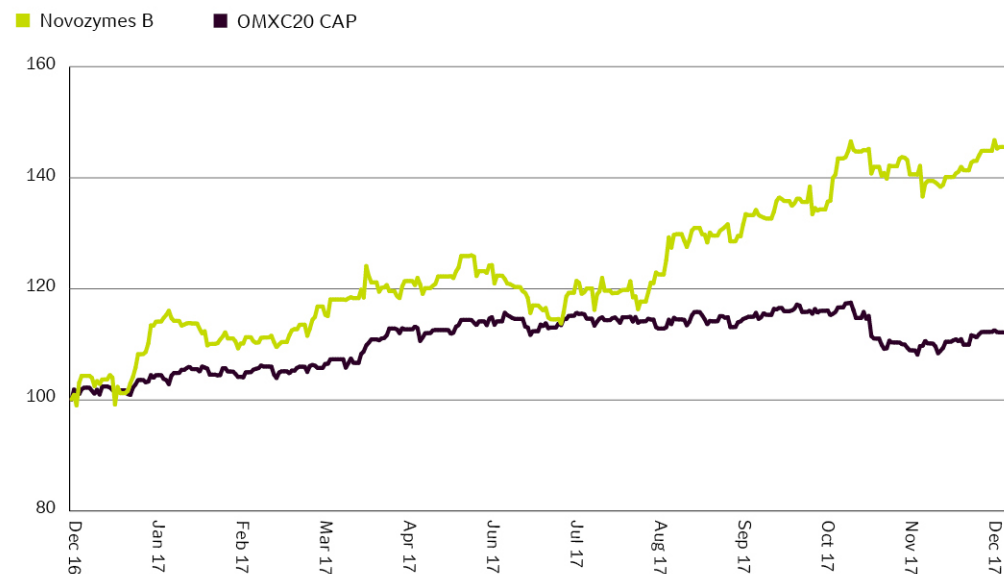
Novozyymes' share price increased by 46% during the year. For comparison, the OMXC20CAP increased by 13% in 2017.

The average daily trading volume of Novozymes' stock in 2017 was 863,035 shares, or DKK 149 million, making it the 11th most actively traded company on Nasdaq Copenhagen, compared with the 10th in 2016. At year-end, the total market cap of Novozymes was DKK 108.1 billion, split between DKK 89.1 billion for the B shares and DKK 19.0 billion for the nontraded A shares, assuming the same value per share as for the B shares.

Over the past five years, Novozymes' stock has generated an average annual return (compounded) to shareholders of 19%. Total shareholder return in 2017 was 47%, adjusted for dividends.

	A stock	B stock	Total
Share capital (DKK)	107,487,200	502,512,800	610,000,000
Number of shares	53,743,600	251,256,400	305,000,000
Held by Novo Holdings A/S (%)	100.0%	9.6%	25.5%
Number of votes	1,074,872,000	502,512,800	1,577,384,800
Voting rights (%)	68.1%	31.9%	100.0%
Held by Novo Holdings A/S (%)	68.1%	3.0%	71.2%

## Share price development





## Dividends

The Board of Directors proposes that the Annual Shareholders' Meeting approve a dividend of DKK 4.5 per share for the 2017 financial year. This will result in an expected total dividend payment of approximately DKK 1,318 million, corresponding to a payout ratio of 42%.

The dividend for 2017 will be disbursed on March 16, 2018, and the last trading day with right to dividend for 2017 is March 13, 2018.

As Novozymes has reached its target of ~40% dividend payout ratio, it will be proposed at the Annual Shareholders' Meeting in March 2018 to increase the long-term payout ratio to ~50%.

## Stock buyback program in 2017

A DKK 2 billion buyback program ran from January 25 to November 9, 2017. Under the program, 6,770,271 shares were purchased and added to treasury stock.

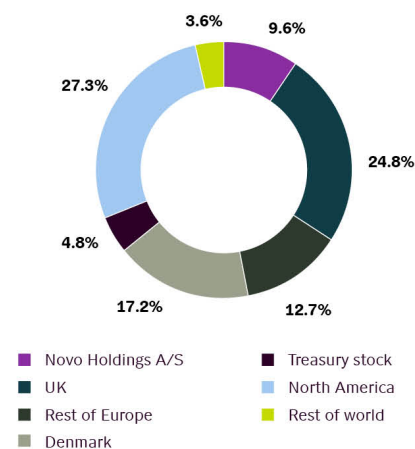
## New stock buyback program in 2018

Novozyymes has decided to initiate a new stock buyback program worth up to DKK 2.0 billion in total, or a maximum of 20 million shares. The program is expected to begin early in 2018 and run for the remainder of the year. The shares acquired within the program will be used to reduce the common stock and to meet obligations arising from employee share incentive programs.

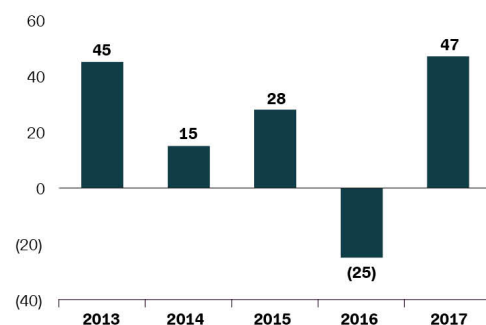
## Financial calendar

Mar. 13, 2018	Annual Shareholders' Meeting 2018
Apr. 25, 2018	Interim report for the first 3 months of 2018
Aug. 10, 2018	Interim report for the first half of 2018
Oct. 24, 2018	Interim report for the first 9 months of 2018
Feb. 6, 2019	Group financial statement for 2018

## Ownership by geography (B shares)



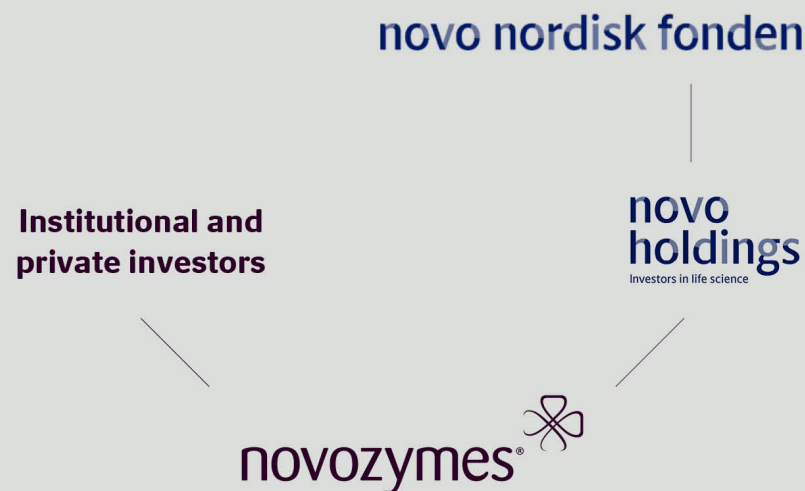
## Total shareholder return, %



Total shareholder return: share price + dividend return for the period.

## Ownership structure

The Novo Nordisk Foundation is an independent Danish foundation with corporate interests. The objective of the Novo Nordisk Foundation is twofold: to provide a stable basis for the commercial and research activities conducted by the companies within the Novo Group and to support scientific and humanitarian purposes.



## Investor Relations

Novozyymes' Investor Relations maintains an ongoing dialogue with sell-side equity analysts as well as major institutional and retail shareholders. A list of the current analysts covering Novozymes can be found at [investors.novozymes.com](http://investors.novozymes.com).



Visit our website for financial reports, current presentations, factsheets, tools and other downloads, and information for private and institutional shareholders





# Accounts & performance



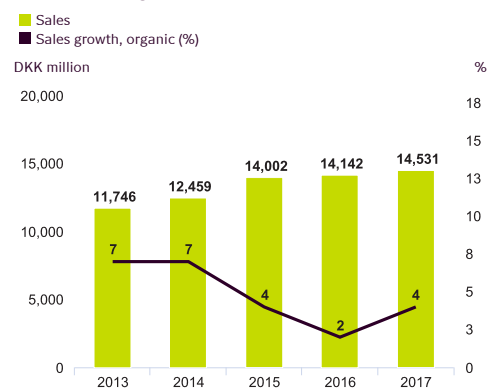
# Sales and earnings

## Sales

Total sales in 2017 were DKK 14,531 million, an increase of 4% organically and 3% in DKK.

**“Sales to Food & Beverages and Bioenergy were the most significant contributors to organic sales growth.”**

### Sales and sales growth



## Gross profit and margin

Gross profit increased by 4% to DKK 8,413 million from DKK 8,126 million in 2016. The gross margin was 57.9%, up from 57.5% in 2016. Productivity improvements had a positive impact on the gross margin, somewhat offset by unfavorable mix and price changes.

## Operating costs

Operating costs increased by 2% to DKK 4,363 million. Operating costs as a percentage of sales were 30%.

- Sales and distribution costs were unchanged, representing 11% of sales
- Research and development costs increased by 3%, representing 13% of sales
- Administrative costs increased by 3%, representing 6% of sales

## Other operating income

Other operating income was a net loss of DKK 3 million, compared with a net income of DKK 117 million in 2016. The decrease in 2017 was mainly caused by a loss of DKK 66 million relating to the divestment of Albumedix late 2017. After careful review of Albumedix's future activities and needs, Novozymes concluded that the entity no longer benefits from being part of the Group. Novozymes and Albumedix have found a good future ownership solution for Albumedix, with Novozymes retaining 8% ownership of the company.

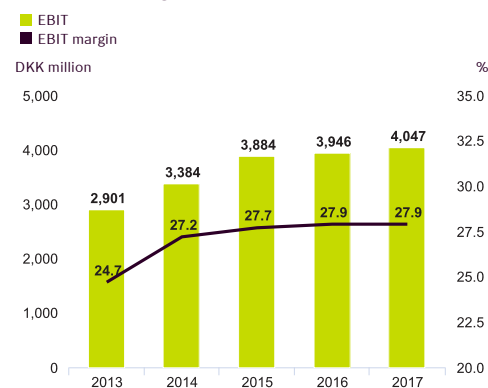
## EBITDA

EBITDA increased by 3% to DKK 5,114 million, up from DKK 4,960 million in 2016. Depreciation, amortization and impairment losses were DKK 1,067 million in 2017, up 5% from DKK 1,014 million in 2016. The increase in depreciation was mainly attributable to acquisitions, such as Organobalance GmbH in 2016.

## EBIT and EBIT margin

EBIT increased by 3% to DKK 4,047 million, up from DKK 3,946 million in 2016. The EBIT margin ended at 27.9%, unchanged from 2016. Excluding the one-time costs relating to layoffs at the beginning of 2017, the cost associated with the change to the Executive Leadership Team during the year and the loss on the divestment of Albumedix, the EBIT margin was around 29%.

### EBIT and EBIT margin



## Net finance

Net financial costs were DKK 157 million in 2017, compared with DKK 34 million in 2016. Net financial costs in 2017 were impacted by a write-down of DKK 120 million on a financial asset related to a guarantee provided by M&G. Due to financial difficulties in the M&G Group, it is now assessed that the financial asset will not be recovered and it has been written down.

## Tax

The effective tax rate was 19.5%, compared with 21.4% in 2016. In 2017, Novozymes transferred intellectual property from Switzerland to Denmark. This had a positive impact on the effective tax rate of roughly 2 percentage points. The one-time negative impact of adjusting the deferred tax to the new US tax rate was almost 1 percentage point.

## Net profit

Net profit grew by 2% to DKK 3,120 million in 2017, up from DKK 3,050 million in 2016, driven by higher EBIT and a lower tax rate, but partly offset by the write-down included in financial items.

## Earnings per share

Earnings per share increased by 4% to DKK 10.56, compared with DKK 10.15 in 2016, due to higher net profit and cancellation of shares.

[Read more about the Novozymes stock in The Novozymes stock](#)



# Consolidated statements of income

## Income statement

DKK million	Note	2017	2016
Revenue	2.1, 2.2	14,531	14,142
Cost of goods sold	2.3, 3.1, 3.2, 4.1	(6,118)	(6,016)
<b>Gross profit</b>		<b>8,413</b>	<b>8,126</b>
Sales and distribution costs	2.3, 3.1, 3.2	(1,619)	(1,622)
Research and development costs	2.3, 2.4, 3.1, 3.2	(1,913)	(1,865)
Administrative costs	2.3, 3.1, 3.2	(831)	(810)
Other operating income, net	2.5	(3)	117
<b>Operating profit / EBIT</b>		<b>4,047</b>	<b>3,946</b>
Share of result in associates	3.4	(14)	(31)
Financial income	5.2	90	32
Financial costs	5.2	(247)	(66)
<b>Profit before tax</b>		<b>3,876</b>	<b>3,881</b>
Tax	2.6	(756)	(831)
<b>Net profit</b>		<b>3,120</b>	<b>3,050</b>
<b>Attributable to</b>			
Shareholders in Novozymes A/S		3,119	3,050
Non-controlling interests		1	-
		3,120	3,050
Proposed dividend per share		DKK 4.50	DKK 4.00
Earnings per share	2.7	DKK 10.56	DKK 10.15
Earnings per share, diluted	2.7	DKK 10.49	DKK 10.06

## Statement of comprehensive income

DKK million	Note	2017	2016
<b>Net profit</b>		<b>3,120</b>	<b>3,050</b>
Items that may be reclassified subsequently to the income statement:			
<b>Currency translation adjustments</b>			
Subsidiaries and non-controlling interests		(970)	140
Tax on currency translation adjustments		37	(8)
<b>Currency translation adjustments</b>		<b>(933)</b>	<b>132</b>
<b>Cash flow hedges</b>			
Fair value adjustments		115	(70)
Tax on fair value adjustments		(25)	15
Cash flow hedges reclassified to financial costs		(5)	(8)
Tax on reclassified fair value adjustments		1	2
<b>Cash flow hedges</b>		<b>86</b>	<b>(61)</b>
<b>Other comprehensive income</b>		<b>(847)</b>	<b>71</b>
<b>Comprehensive income for the year</b>		<b>2,273</b>	<b>3,121</b>
<b>Attributable to</b>			
Shareholders in Novozymes A/S		2,273	3,121
Non-controlling interests		-	-
		2,273	3,121

# Balance sheet and financial position

## Total assets

Total assets decreased from DKK 18,659 million at December 31, 2016, to DKK 18,373 million at December 31, 2017. The decrease was mainly caused by changes in currency, the divestment of Albumedix and the write-down of DKK 120 million on a financial asset related to a guarantee from M&G, partly offset by higher net investments.

## ROIC

Return on invested capital (ROIC), including goodwill, was 25.6%, up 0.5 percentage points from 25.1% in 2016. The increase was mainly a result of a higher EBIT and a lower tax rate, partly offset by higher net investments.

## Invested capital

Invested capital increased from DKK 12,584 million in 2016 to DKK 12,880 million in 2017. This was mainly a result of high net investments, partly offset by the impact of changes in currency.

## Net working capital

Novozymes' net working capital decreased to DKK 2,023 million, down from DKK 2,088 million in 2016, mainly due to an increase in trade payables and a decrease in trade receivables, which has been partly offset by release of deferred income.

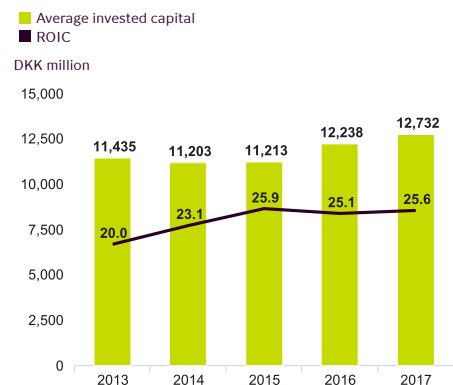
## Net interest-bearing debt

Novozymes had net interest-bearing debt of DKK 1,642 million at December 31, 2017, compared with DKK 990 million at December 31, 2016. Net interest-bearing debt was impacted by cash outflows from dividend payments of DKK 1,192 million, stock buybacks of DKK 2,000 million and net investments of DKK 1,668 million, which exceeded cash inflows from operating activities of DKK 4,063 million.

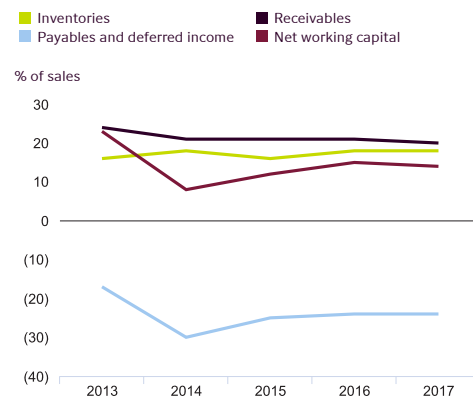
## Net interest-bearing debt-to-EBITDA

Net interest-bearing debt-to-EBITDA was 0.3 at December 31, 2017, compared with 0.2 at December 31, 2016.

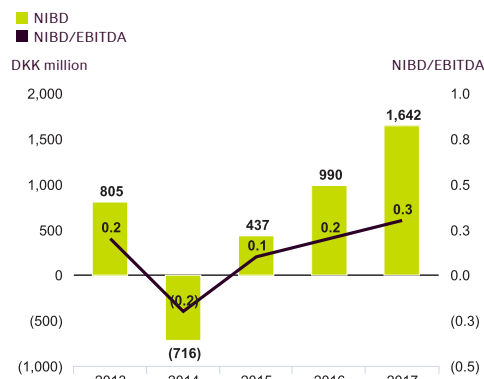
### ROIC and invested capital



### Net working capital



### Net interest-bearing debt (NIBD) and net interest-bearing debt-to-EBITDA



# Consolidated balance sheet

## Assets

DKK million	Note	Dec. 31, 2017	Dec. 31, 2016
Intangible assets	2.1, 3.1	2,432	2,737
Land and buildings	2.1, 3.2	2,697	2,931
Plant and machinery	2.1, 3.2	4,019	4,239
Other equipment	2.1, 3.2	562	615
Assets under construction and prepayments	2.1, 3.2	1,648	856
Deferred tax assets	2.6	755	607
Other financial assets		29	151
Investments in associates	3.4	59	73
Other receivables	4.3	35	57
<b>Non-current assets</b>		<b>12,236</b>	<b>12,266</b>
Inventories	4.1	2,586	2,488
Trade receivables	4.2	2,554	2,680
Tax receivables	2.6	135	142
Other receivables	4.3	214	267
Other financial assets		16	4
Cash and cash equivalents	6.6	632	812
<b>Current assets</b>		<b>6,137</b>	<b>6,393</b>
<b>Assets</b>		<b>18,373</b>	<b>18,659</b>

## Liabilities and shareholders' equity

DKK million	Note	Dec. 31, 2017	Dec. 31, 2016
Common stock	5.5	610	620
Currency translation adjustments		(262)	670
Cash flow hedges		45	(41)
Retained earnings		10,861	10,483
<b>Equity attributable to shareholders in Novozymes A/S</b>		<b>11,254</b>	<b>11,732</b>
Non-controlling interests		13	13
<b>Shareholders' equity</b>		<b>11,267</b>	<b>11,745</b>
Deferred tax liabilities	2.6	721	854
Provisions	3.3	159	231
Deferred income	4.4	337	540
Other financial liabilities	5.3	1,312	1,727
<b>Non-current liabilities</b>		<b>2,529</b>	<b>3,352</b>
Provisions	3.3	86	61
Other financial liabilities	5.3	979	200
Trade payables		1,341	1,194
Deferred income	4.4	205	248
Tax payables	2.6	483	437
Other liabilities	4.5	1,483	1,422
<b>Current liabilities</b>		<b>4,577</b>	<b>3,562</b>
<b>Liabilities</b>		<b>7,106</b>	<b>6,914</b>
<b>Liabilities and shareholders' equity</b>		<b>18,373</b>	<b>18,659</b>



# Equity and shareholder return

## Shareholders' equity

At December 31, 2017, shareholders' equity was DKK 11,267 million, down 4% from DKK 11,745 million at December 31, 2016, as dividend payments and stock buyback in 2017 more than offset comprehensive income.

## Equity ratio

Shareholders' equity represented 61% of the balance sheet total, down from 63% at December 31, 2016.

## Return on equity

Return on equity was 27.1%, up 1.0 percentage point from 26.1% in 2016. The increase was a result of higher net profit and a decrease in equity.

## Treasury stock

At December 31, 2017, the holding of treasury stock was 12.1 million B shares, equivalent to 4.0% of the common stock.

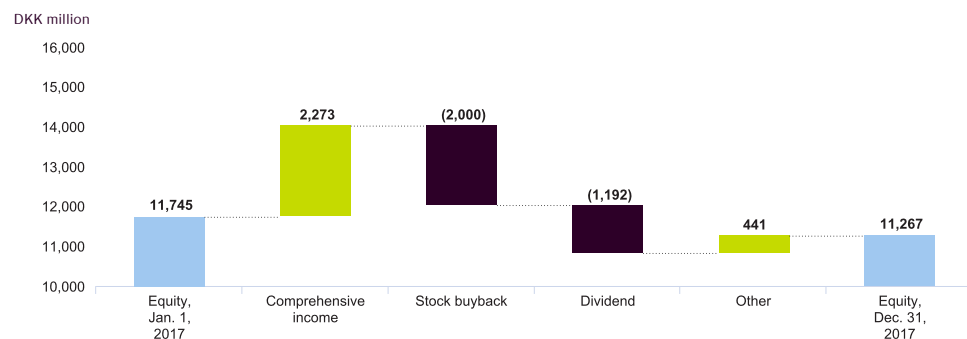
## Dividend

The Board of Directors proposes that the Annual Shareholders' Meeting approve a dividend of DKK 4.50 per share for the 2017 financial year, an increase of 13% compared with 2016. This will result in an expected total dividend payment of approximately DKK 1,318 million, corresponding to a payout ratio of 42.3%.

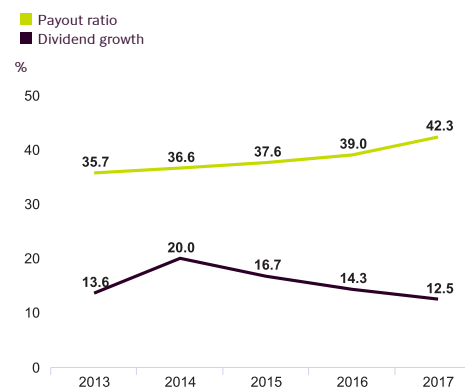
## Stock buyback program

In 2017, Novozymes bought back 6.8 million B shares with a transaction value of DKK 2,000 million under the stock buyback program initiated on January 25, 2017, and completed on November 9, 2017. The shares acquired within the program will be used to reduce the common stock and to meet obligations arising from employee share-based incentive programs.

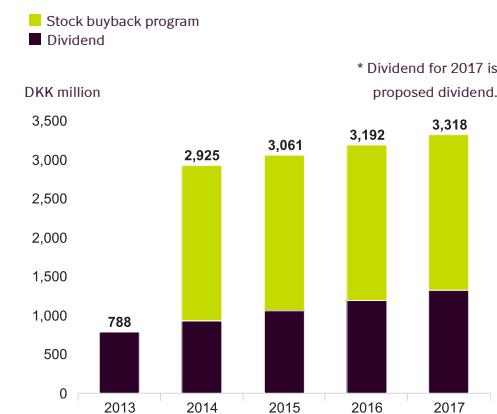
### Movements in equity 2017



### Payout ratio and dividend growth



### Shareholder return



[Read more about the Novozymes stock in The Novozymes stock](#)

# Consolidated statement of shareholders' equity

DKK million	Attributable to shareholders in the company					Non-controlling interests	Total equity
	Common stock	Currency translation adjustments	Cash flow hedges	Retained earnings	Total		
<b>Shareholders' equity at January 1, 2017</b>	<b>620</b>	<b>670</b>	<b>(41)</b>	<b>10,483</b>	<b>11,732</b>	<b>13</b>	<b>11,745</b>
Net profit for the year				3,119	3,119	1	3,120
Other comprehensive income for the year		(932)	86		(846)	(1)	(847)
<b>Total comprehensive income for the year</b>		<b>(932)</b>	<b>86</b>	<b>3,119</b>	<b>2,273</b>	<b>-</b>	<b>2,273</b>
Purchase of treasury stock				(2,000)	(2,000)		(2,000)
Sale of treasury stock				179	179		179
Write-down of common stock	(10)			10	-		-
Dividend				(1,192)	(1,192)		(1,192)
Stock-based payment				104	104		104
Tax related to equity items				158	158		158
<b>Changes in shareholders' equity</b>	<b>(10)</b>	<b>(932)</b>	<b>86</b>	<b>378</b>	<b>(478)</b>	<b>-</b>	<b>(478)</b>
<b>Shareholders' equity at December 31, 2017</b>	<b>610</b>	<b>(262)</b>	<b>45</b>	<b>10,861</b>	<b>11,254</b>	<b>13</b>	<b>11,267</b>
<b>Shareholders' equity at January 1, 2016</b>	<b>626</b>	<b>538</b>	<b>20</b>	<b>10,396</b>	<b>11,580</b>	<b>13</b>	<b>11,593</b>
Net profit for the year				3,050	3,050	-	3,050
Other comprehensive income for the year		132	(61)		71		71
<b>Total comprehensive income for the year</b>		<b>132</b>	<b>(61)</b>	<b>3,050</b>	<b>3,121</b>	<b>-</b>	<b>3,121</b>
Purchase of treasury stock				(2,000)	(2,000)		(2,000)
Sale of treasury stock				69	69		69
Write-down of common stock	(6)			6	-		-
Dividend				(1,061)	(1,061)		(1,061)
Stock-based payment				136	136		136
Tax related to equity items				(113)	(113)		(113)
<b>Changes in shareholders' equity</b>	<b>(6)</b>	<b>132</b>	<b>(61)</b>	<b>87</b>	<b>152</b>	<b>-</b>	<b>152</b>
<b>Shareholders' equity at December 31, 2016</b>	<b>620</b>	<b>670</b>	<b>(41)</b>	<b>10,483</b>	<b>11,732</b>	<b>13</b>	<b>11,745</b>

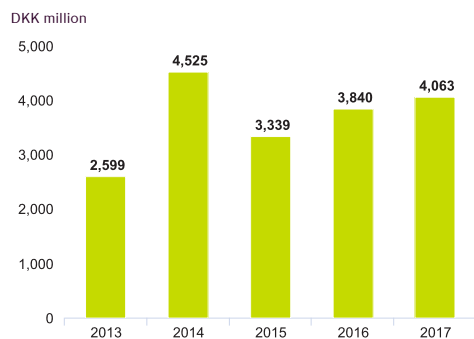
The proposed dividend of DKK 1,318 million for 2017 is included in Retained earnings.

# Cash flow

## Cash flow from operating activities

Cash flow from operating activities was DKK 4,063 million, up from DKK 3,840 million in 2016. Higher net profit impacted cash flow positively, while changes in net working capital impacted cash flow negatively by DKK 249 million. The higher net working capital was mainly due to higher inventory levels.

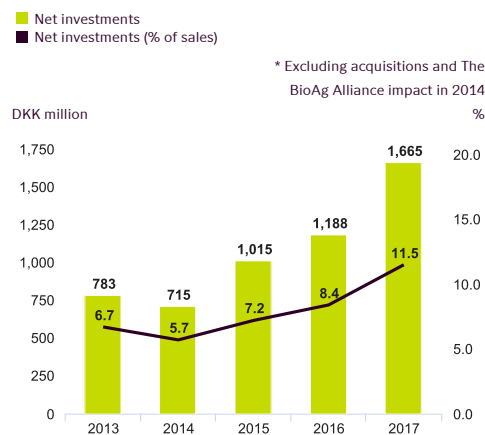
### Cash flow from operating activities



## Net investments

Net investments excluding acquisitions were DKK 1,665 million, up from DKK 1,188 million in 2016. Net investments in property, plant and equipment amounted to DKK 1,566 million, compared with DKK 1,048 million in 2016. The higher net investments were related to the construction of the innovation campus in Denmark, new production facilities in Mumbai, India, and capacity expansions in Nebraska, US.

### Net investments



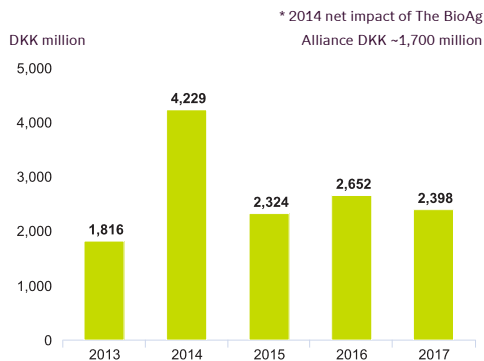
## Free cash flow before acquisitions

Free cash flow before net acquisitions was DKK 2,398 million, compared with DKK 2,652 million in 2016. The decrease of 10% was mainly caused by higher investments, partly offset by positive development in cash flow from operating activities.

### Free cash flow

Free cash flow was DKK 2,395 million in 2017, compared with DKK 2,491 million in 2016.

### Free cash flow before acquisitions



## Financing activities

Cash flow from financing activities was negative at DKK 2,815 million, compared with a negative cash flow of DKK 2,484 million in 2016. The negative cash flow from financing activities was mainly due to completion of the stock buyback program (DKK 2,000 million) and dividend payments (DKK 1,192 million).

### Cash position

Cash and cash equivalents at December 31, 2017, amounted to DKK 363 million, down from DKK 805 million at December 31, 2016. Undrawn committed credit facilities were DKK 3,944 million at December 31, 2017.



# Consolidated statement of cash flows

DKK million	Note	2017	2016	DKK million	Note	2017	2016
<b>Net profit</b>		<b>3,120</b>	<b>3,050</b>	<b>Financing</b>			
Reversal of non-cash items	6.6	2,065	2,035	Borrowings		636	1,281
Income tax paid	2.6	(852)	(905)	Repayments of borrowings		(438)	(773)
Interest received		7	4	Purchase of treasury stock		(2,000)	(2,000)
Interest paid		(28)	(30)	Sale of treasury stock		179	69
<b>Cash flow before change in working capital</b>		<b>4,312</b>	<b>4,154</b>	Dividend paid		(1,192)	(1,061)
<b>Change in working capital</b>				<b>Cash flow from financing activities</b>		<b>(2,815)</b>	<b>(2,484)</b>
(Increase)/decrease in receivables		(96)	13	<b>Net cash flow</b>		<b>(420)</b>	<b>7</b>
(Increase)/decrease in inventories		(224)	(199)	Unrealized gain/(loss) on currencies and financial assets included in cash and cash equivalents		(22)	2
Increase/(decrease) in payables and deferred income		74	(125)	<b>Net change in cash and cash equivalents</b>		<b>(442)</b>	<b>9</b>
Currency translation adjustments		(3)	(3)	Cash and cash equivalents, net, at January 1		805	796
<b>Cash flow from operating activities</b>		<b>4,063</b>	<b>3,840</b>	<b>Cash and cash equivalents, net, at December 31</b>	<b>6.6</b>	<b>363</b>	<b>805</b>
<b>Investments</b>							
Purchase of intangible assets	3.1	(99)	(140)				
Purchase of property, plant and equipment	3.2	(1,593)	(1,076)				
Sale of property, plant and equipment		27	28				
Business acquisitions, divestments and purchase of financial assets	6.6	(3)	(161)				
<b>Cash flow from investing activities</b>		<b>(1,668)</b>	<b>(1,349)</b>				
<b>Free cash flow</b>		<b>2,395</b>	<b>2,491</b>				

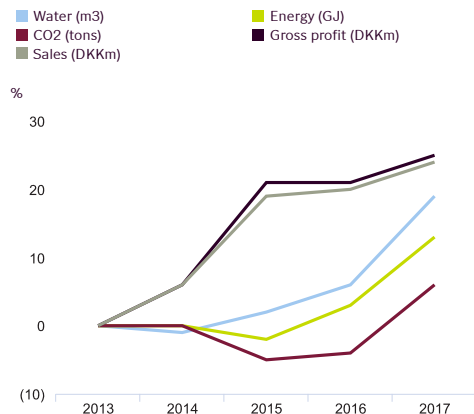
# Environmental performance

## Operational efficiency

Novozymes strives to decouple environmental impact from business growth. We have three efficiency/intensity targets that measure performance improvements against the base year 2014. The efficiency/intensity is measured as consumption/emissions divided by gross profit.

In 2017, absolute energy and water consumption and CO<sub>2</sub> emissions increased at a higher rate than gross profit, resulting in reduced performance compared with 2016. This increase in consumption was due to significantly higher capacity utilization at Novozymes' production sites.

### Developments in sales, gross profit and environmental impact



## Climate change

Novozymes' CO<sub>2</sub> intensity reduction compared with the base year 2014 fell to 11% in 2017 from 16% in 2016.

Despite this, Novozymes' net overall impact on climate change remains positive, as its products result in lower CO<sub>2</sub> emissions over their life cycles compared with conventional technologies. In 2017, our customers avoided an estimated 76 million tons of CO<sub>2</sub> emissions by applying our solutions in their products or processes, up from 69 million tons in 2016. This is equivalent to taking 32 million cars off the road.

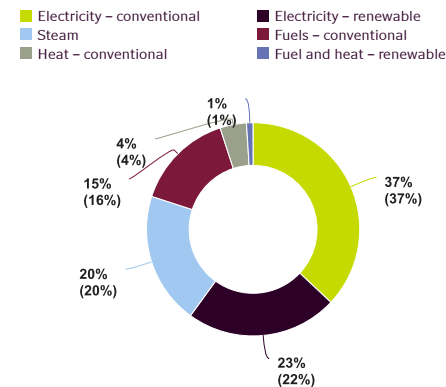
**“Novozymes’ net overall impact on climate change remains positive.”**

## Energy

In 2017, Novozymes' energy efficiency improved by 4% compared with the base year 2014, down from 10% in 2016.

Energy consumption from renewable sources remained at 24% in 2017. All our electricity in Denmark and Brazil comes from offshore windfarms and hydropower.

### Energy by source 2017 (2016)



## Water

In 2017, Novozymes' water efficiency declined by 2% compared with the base year 2014, down from a 6% improvement in 2016.

The total volume of wastewater generated in 2017 increased by 15% from 2016. In 2017, we invested significantly to increase wastewater treatment capacity at our largest production site in Kalundborg, Denmark.

## Waste

Novozymes recovered 97% of its total solid waste and biomass generated in 2017 from landfill, on par with 2016.

Specifically, for solid waste, the rate of recycling across our global production sites decreased to 43%, compared with 44% in 2016.

## Environmental compliance

The number of breaches of regulatory limits recorded worldwide declined to 24 in 2017 from 37 in 2016. Most of these breaches relate to wastewater treatment. Novozymes is addressing these incidents.

In addition, we received 12 complaints in 2017, compared with nine in 2016, mostly related to air pollution and waste management.

# Consolidated environmental data

	Note		2017	2016
<b>Climate change</b>				
Estimated CO <sub>2</sub> reductions from customers' application of Novozymes' products in their products or processes	7.1	Million tons	76	69
Greenhouse gas emissions	7.1	1,000 tons CO <sub>2</sub> -eqv.	447	413
CO <sub>2</sub> intensity reduction	7.1	%	11	16
<b>Energy</b>				
Energy consumption	7.2	1,000 GJ	4,760	4,380
Renewable energy	7.2	%	24	24
Energy efficiency improvement	7.2	%	4	10
<b>Water</b>				
Water consumption	7.3	1,000 m <sup>3</sup>	8,106	7,225
Volume of wastewater	7.3	1,000 m <sup>3</sup>	6,182	5,392
Water efficiency improvement	7.3	%	(2)	6
<b>Waste</b>				
Solid waste	7.4	1,000 tons	14	13
Recycling rate for solid and hazardous waste	7.4	%	43	44
Biomass volume	7.4	1,000 tons	602	550
<b>Environmental compliance, etc.</b>				
Breaches of regulatory limits	7.5	No.	24	37
Neighbor complaints	7.5	No.	12	9
<b>References to notes without data</b>				
Bioethics & biodiversity	7.6		n.a.	n.a.
Product stewardship	7.7		n.a.	n.a.



# Social and governance performance

## Labor practices & human rights

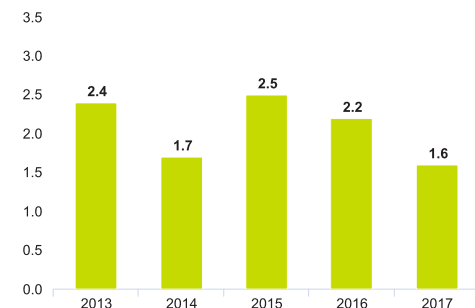
At the end of 2017, the total number of employees was 6,245, compared with 6,441 in 2016. The employee absence rate was 2.1% in 2017, compared with 2.0% in 2016.

Novozymes promotes equal opportunities and strengthens diversity in the global workplace. At the end of 2017, 26% of senior management (directors and higher) were women.

## Occupational health & safety

Our continuous focus on building awareness and keeping employees safe and healthy has resulted in a lower frequency of occupational accidents: 1.6 per million working hours in 2017, compared with 2.2 in 2016.

Frequency of accidents (per million working hours)



## Innovation

Novozymes is committed to delivering bioinnovation and launched eight new products in 2017. In 2017, Novozymes had 1,049 active patent families, which comprise the number of inventions that have active patent applications or active patents. See more details about our new products in Novozymes in a nutshell.

## Customer engagement

Novozymes conducts an annual customer satisfaction survey and tracks progress on its Net Promoter Score (NPS), which is assessed on a scale from -100 to +100. In 2017, we received an NPS score of +39, compared with +45 in 2016. Despite this decline in score, which can be attributed to changing customer perceptions of account management, the survey results are largely positive.

## Community engagement

In 2017, Novozymes engaged more than 188,000 learners, compared with approximately 106,000 in 2016. The increase was due to expansion of our 2016 projects across regions.

**“We believe that the more people we educate, the more likely they are to get involved in creating sustainable biological solutions.”**

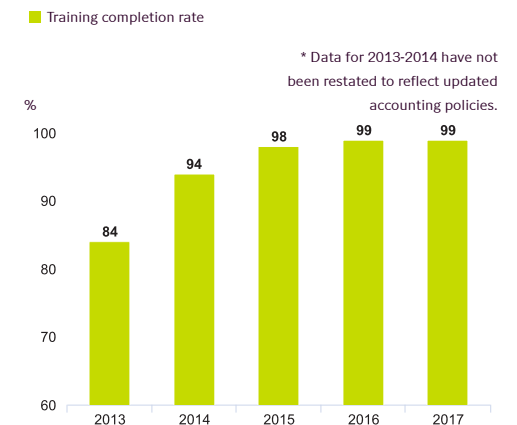
**- Peder Holk Nielsen  
President & CEO**

## Business ethics

In 2017, Novozymes reinforced its commitment to its business integrity principles. 99% of Novozymes' employees completed business integrity training in 2017, on par with 2016.

There were no breaches of competition law in 2017. The number of investigated fraud cases increased to 49 in 2017, compared with 44 in 2016. None of the investigated fraud cases had a material financial impact on Novozymes.

Business integrity training for employees\*



# Consolidated social and governance data

	Note		2017	2016
<b>Labor practices &amp; human rights</b>				
Employees, total	2.3	No.	6,245	6,441
Women	2.3	%	37.7	37.7
Rate of absence	8.1	%	2.1	2.0
Women in senior management	8.1	%	26	25
<b>Occupational health &amp; safety</b>				
Fatalities		No.	-	-
Frequency of occupational accidents	8.2	Per million working hours	1.6	2.2
Frequency of occupational diseases	8.2	Per million working hours	0.2	0.7
<b>Innovation</b>				
New products	2.4	No.	8	8
Active patent families	2.4	No.	1,049	1,123
<b>Business ethics</b>				
Completion of business integrity training for employees	8.3	%	99	99
Breaches of competition law	8.3	No.	-	-
Investigated fraud cases	8.3	No.	49	44
<b>Community engagement</b>				
Estimated number of learners reached	8.4	No.	188,000	106,000
<b>Customer engagement</b>				
Customer satisfaction, Net Promoter Score (NPS)	8.5	No.	39	45
<b>Reference to notes without data</b>				
Responsible sourcing	8.6		n.a.	n.a.

# Notes

## **Basis of reporting**

- 1** Basis of reporting

## **Net operating profit after tax**

- 2.1** Segments
- 2.2** Revenue
- 2.3** Employees
- 2.4** Research and development costs
- 2.5** Other operating income, net
- 2.6** Tax
- 2.7** Earnings per share

## **Invested capital**

- 3.1** Intangible assets and impairment test of goodwill
- 3.2** Property, plant and equipment
- 3.3** Provisions
- 3.4** Joint operations and associates
- 3.5** Business acquisitions

## **Net working capital**

- 4.1** Inventories
- 4.2** Trade receivables
- 4.3** Other receivables
- 4.4** Deferred income
- 4.5** Other liabilities

## **Capital structure and financing**

- 5.1** Financial risk factors and risk management
- 5.2** Financial income and Financial costs
- 5.3** Other financial liabilities
- 5.4** Derivatives – hedge accounting
- 5.5** Common stock and treasury stock
- 5.6** Financial assets and liabilities by category

## **Other financial notes**

- 6.1** Management remuneration
- 6.2** Stock-based payment
- 6.3** Commitments and contingencies
- 6.4** Related party transactions
- 6.5** Fees to statutory auditor
- 6.6** Cash flow

- 6.7** Events after the reporting date

- 6.8** Group companies

## **Environmental data**

- 7.1** Climate change
- 7.2** Energy
- 7.3** Water
- 7.4** Waste
- 7.5** Environmental compliance, etc.
- 7.6** Bioethics & biodiversity
- 7.7** Product stewardship

## **Social and governance data**

- 8.1** Labor practices & human rights
- 8.2** Occupational health & safety
- 8.3** Business ethics
- 8.4** Community engagement
- 8.5** Customer engagement
- 8.6** Responsible sourcing



# 1 Basis of reporting

## Reading guide

The Accounts and performance section is presented in a manner that attempts to make the information provided understandable and relevant to readers. This includes providing relevant rather than generic information.

The notes have been divided into eight sections: Basis of reporting, Net operating profit after tax, Invested capital, Net working capital, Capital structure and financing, Other financial notes, Environmental data and Social and governance data. The purpose is to provide a clearer understanding of what drives performance.

The notes have been structured to provide an enhanced understanding of each accounting area, by describing relevant accounting policies and sources of estimation uncertainty in the notes to which they relate.

Novozymes explains the accounting choices that have been made within the framework of the prevailing International Financial Reporting Standards (IFRS) and has elected not to repeat the actual text of the standard, unless this is considered particularly important for an understanding of the note content. The descriptions of accounting policies in the notes form part of the overall description of accounting policies.

The notes for environmental and social and governance data also disclose Novozymes' management approach to the reported issue.

The symbols **I/S**, **B/S** and **ESG** show which amounts in the notes can be found in the income statement, balance sheet, and environmental data and social and governance data respectively.

## Basis of reporting

The consolidated financial statements of the Novozymes Group have been prepared in accordance with IFRS as adopted by the EU and further requirements in the Danish Financial Statements Act. Novozymes has prepared the consolidated financial statements in accordance with all the IFRS standards effective at December 31, 2017. The fiscal year for the Group is January 1 – December 31. The consolidated financial statements have been prepared on a going concern basis and under the historical cost convention, with the exception of derivatives and securities, which are measured at fair value. The accounting policies are unchanged from last year.

The consolidated environmental and social and governance data have been prepared in accordance with principles that adhere to the following internationally recognized voluntary reporting standards and principles:

- AA1000 framework for accountability. The framework states that reporting must provide a complete, accurate, relevant and balanced picture of the organization's approach to and impact on society
- UN Global Compact. Novozymes is a signatory to the UN Global Compact, a voluntary 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. Read Novozymes' UNGC Communication on progress in the Sustainability section
- GRI Sustainability Reporting Standards 2016 (GRI Standards). Novozymes refers to GRI 101: Foundation 2016 to inspire its materiality assessment process and to GRI 102: General Disclosures 2016 to report contextual information about itself. Information is presented on Novozymes' management approach to material issues, taking inspiration from GRI 103: Management Approach 2016. Topic-specific information is provided by referencing GRI Standards 200, 300 and 400 on Economic, Environmental and Social disclosures. Specific content for which information is reported is outlined in Novozymes' GRI content index

The principles are unchanged from last year.

## Impact of new accounting standards

Novozymes has adopted the following new or amended standards and interpretations from January 1, 2017:

- Amendments to IAS 7 Disclosure Initiative was published in January 2016 and requires an entity to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities
- Amendments to IAS 12 Recognition of deferred tax assets for unrealised losses was published in January 2016 and clarifies the requirements on recognition of deferred tax assets for unrealized losses on debt instruments measured at fair value
- Annual Improvements to IFRSs (2014-2016) was published in December 2016 and contains minor changes to three standards

The adoption of the amended standards and interpretations has not had any impact on recognition or measurement in the consolidated financial statements for 2017 and is not anticipated to have an impact on future periods.

# 1 Basis of reporting (continued)

## **New standards and interpretations not yet adopted**

IASB has issued a number of new or amended accounting standards and interpretations that have not yet become effective and have consequently not been implemented in the consolidated financial statements for 2017. Novozymes expects to adopt the accounting standards and interpretations when they become mandatory. The following accounting standards are considered the most relevant for Novozymes:

- IFRS 9 – Financial Instruments: Classification and Measurement of Financial Assets and Financial Liabilities was published in July 2014 and contains requirements for the classification and measurement of financial assets and financial liabilities, impairment methodology and general hedge accounting.

We have completed an analysis to assess the impact of implementing IFRS 9.

Based on the current treasury policy for hedging of risks, the implementation of IFRS 9 will not have an impact on the consolidated financial statements.

The simplified expected loss model will be applied to trade receivables, but will not significantly impact the allowance for doubtful trade receivables. However, the implementation of IFRS 9 will impact

disclosures on the allowance for doubtful trade receivables.

The standard will be implemented using January, 2018 as the date of initial application. We will make use of the relief from restating comparative figures and will only apply IFRS 9 as of January, 2018.

- IFRS 15 – Revenue from Contracts with Customers was published in May 2014 and establishes a single comprehensive framework for revenue recognition. The standard is effective for annual periods beginning on or after January 1, 2018.

During 2017, an analysis has been made of the impact of implementing IFRS 15. The analysis covered the most significant contracts, standard contracts and contracts where the analysis indicated that the implementation of IFRS 15 may impact revenue recognition.

The analysis concludes that the implementation of IFRS 15 will not have a significant impact on the income statement or the related key ratios in the consolidated financial statements. However, items currently recognized in the balance sheet will be presented separately as contract assets and contract liabilities, and the disclosures on revenue will be impacted.

The standard will be implemented using the modified retrospective method. Novozymes will make use of the relief from restating comparative figures and will only apply IFRS 15 to contracts that are not completed as of January 1, 2018.

- IFRS 16 – Leases was published in January 2016 and introduces a single lessee accounting model, requiring lessees to recognize leases in the balance sheet as a right-of-use asset and a lease liability, unless the lease term is 12 months or less or the underlying asset has a low value. In the income statement, the lease cost is replaced by depreciation of the leased asset and an interest expense for the financial liability.

We have started analyzing the Group's current contracts containing a lease to assess the impact of implementing IFRS 16. However, the full impact is not yet known. Based on the ongoing analysis, the new standard is expected to result in an increase in total assets of approx. 3-5%. Consequently, the related key ratios in the consolidated financial statements, such as EBITDA and ROIC, will be impacted. The right-of-use asset and lease liability are to be presented separately in the balance sheet or disclosed in the notes. Furthermore, the implementation of IFRS 16 will impact disclosures.

## **Defining materiality**

Novozymes' annual report is based on the concept of materiality, to ensure that the content is material and relevant to the readers.

The consolidated financial statements consist of a large number of transactions. These transactions are aggregated into classes according to their nature or function, and presented in classes of similar items in the financial statements and in the notes as required by IFRS. If items are individually immaterial, they are aggregated with other items of a similar nature in the statements or in the notes. The disclosure requirements throughout IFRS are substantial, and Novozymes provides the specific disclosures required by IFRS unless the information is considered immaterial to the economic decision-making of the readers of these financial statements.

The consolidated environmental and social and governance (ESG) data include the parameters that, based on an assessment of materiality for Novozymes and its stakeholders, are deemed the most relevant.

Novozymes' materiality assessment is a systematic and rigorous process that integrates inputs from external stakeholders, trend analyses and internal engagement with relevant departments, for example senior leadership from Novozymes' business divisions, Investor Relations, Risk

## Basis of reporting

# 1 Basis of reporting (continued)

Management & Controls, Public Affairs and Corporate Sustainability.

The process results in two outputs: 1) disclosures on key trends, which can be found in the section on Novozymes' business model, and 2) disclosures on material ESG issues, which can be found in the Notes sections.

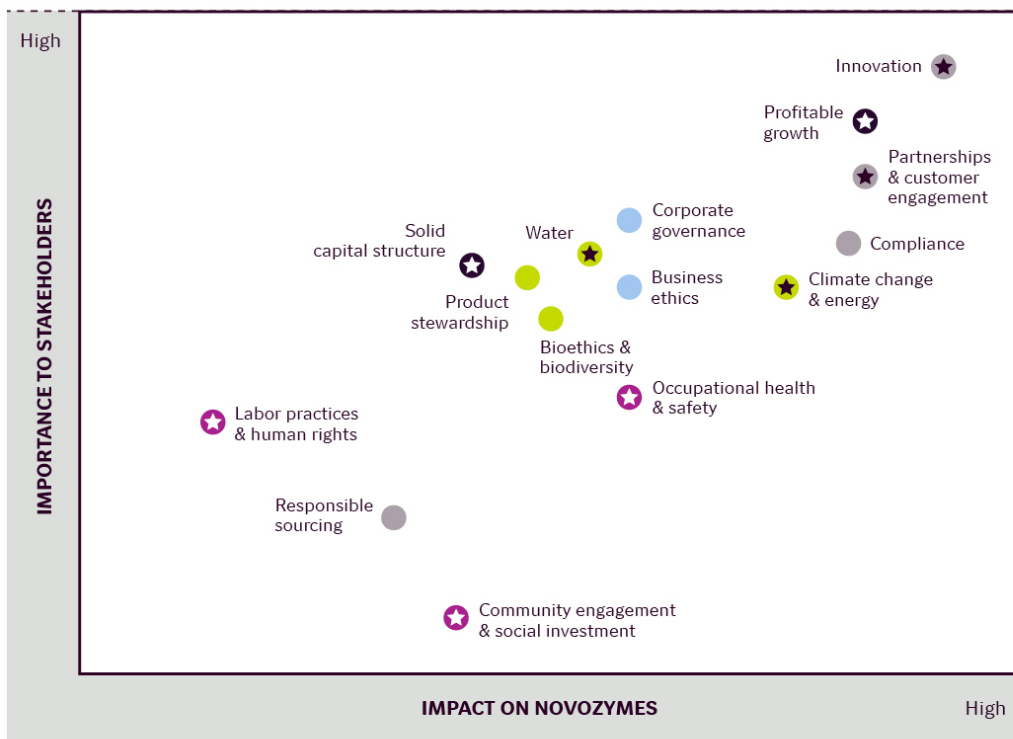
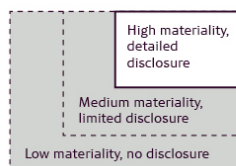
The illustration is a snapshot of the upper-right quadrant of Novozymes' materiality matrix and depicts 15 ESG issues that are most material to Novozymes' business. The materiality matrix includes some new issues and other changes compared with the previous year.

### Issue category

- All
- Environmental
- Social
- Economic
- Governance

### Corporate focus areas

- ★ Targets/Flagship initiatives



For further details on the materiality assessment process and an explanation of all the changes in the matrix compared with 2016, see Materiality in detail in the Sustainability section.

### Limited reporting scope

The environmental data cover those activities that could have a significant impact on the

environment. Sites with activities considered not to have a significant environmental impact are not included. Such sites comprise sales offices, R&D labs, and sites with limited blending and storage of products. However, measures are taken to ensure that at least 97% of the total Novozymes quantity of the measured environmental parameter is included in the reported numbers.

## ! CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

The preparation of the consolidated financial statements in conformity with IFRS requires Management to make estimates and assumptions that can have a significant effect on the application of policies and reported amounts of assets, liabilities, income, expenses and related disclosures. The estimates and underlying assumptions are based on historical experience and various other factors. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Changes in estimates may be necessary if there are changes in the circumstances on which the estimate was based, or as a result of new information or more experience. Such changes are recognized in the period in which the estimate is revised.

Descriptions of critical accounting estimates are included in the following notes:

Revenue	Note 2.2
Group tax charge	Note 2.6
Impairment of intangible assets and goodwill	Note 3.1
Cost of work in progress and finished goods	Note 4.1
Allowances for doubtful trade receivables	Note 4.2
Deferred income	Note 4.4

The application of the Group's accounting policies may require Management to make judgments that can have a significant effect on the amounts recognized in the consolidated financial statements. Management judgment is required in particular when assessing the substance of transactions that have a complicated structure or legal form.

# 1 Basis of reporting (continued)

## § ACCOUNTING POLICIES

The descriptions of accounting policies in the notes form part of the overall description of accounting policies.

### Consolidation

The consolidated financial statements comprise the financial statements of Novozymes A/S (the parent company) and subsidiaries controlled by Novozymes A/S, prepared in accordance with Group accounting policies. The consolidated financial statements are prepared by combining items of a uniform nature and subsequently eliminating intercompany transactions, internal stockholdings and balances, and unrealized intercompany profits and losses.

Environmental and social data are similarly based on data for the parent company and subsidiaries by combining items of a uniform nature compiled using the same accounting principles. Recognition of newly acquired or divested sites and subsidiaries follows the same principles as for the financial reporting.

### Translation of foreign currencies

The consolidated financial statements are presented in Danish kroner (DKK).

Foreign currency transactions are translated into the functional currency defined for each company using the exchange rates prevailing at the transaction date. Monetary items denominated in foreign currencies are translated into the functional currency at the exchange rates prevailing at the reporting date.

Financial statements of foreign subsidiaries are translated into Danish kroner at the exchange rates prevailing at the reporting date for assets and liabilities, and at average exchange rates for income statement items.

All exchange rate differences are recognized as Financial income or Financial costs, with the exception of the following, which are recognized in Other comprehensive income, translated at the exchange rates prevailing at the reporting date:

- Translation of foreign subsidiaries' net assets at the beginning of the year
- Translation of foreign subsidiaries' income statements from average exchange rates to the exchange rates prevailing at the reporting date
- Translation of long-term intercompany balances, which are considered to be an addition to net assets in subsidiaries

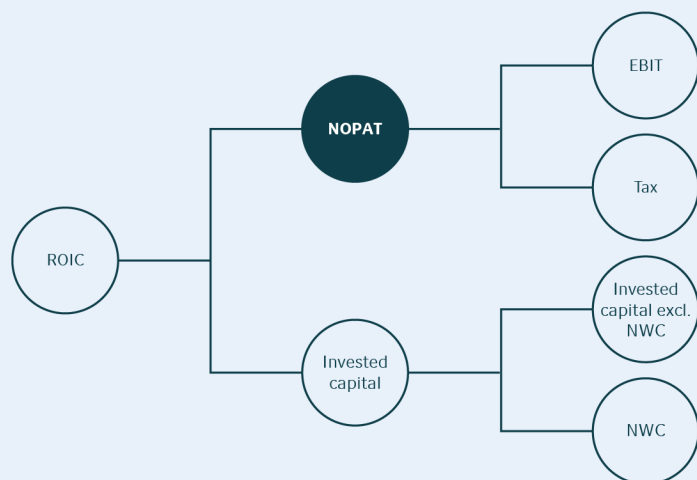
Goodwill arising on the acquisition of new companies is treated as an asset belonging to the new foreign subsidiaries and translated into Danish kroner at the exchange rates prevailing at the reporting date.

Unrealized gains/losses relating to hedging of future cash flows and hedging of net investments in foreign subsidiaries are recognized in Other comprehensive income.



## Net operating profit after tax

# Net operating profit after tax



DKK million	Note	2017	2016
Revenue	2.2	14,531	14,142
Cost of goods sold		(6,118)	(6,016)
<b>Gross profit</b>		<b>8,413</b>	<b>8,126</b>
Sales and distribution costs		(1,619)	(1,622)
Research and development costs	2.4	(1,913)	(1,865)
Administrative costs		(831)	(810)
Other operating income, net	2.5	(3)	117
<b>Operating profit (EBIT)</b>		<b>4,047</b>	<b>3,946</b>
Exchange gains/(losses)		27	(2)
Tax on adjusted operating profit		(795)	(844)
Share of loss in associates	3.4	(14)	(31)
<b>Adjusted operating profit (NOPAT)</b>		<b>3,265</b>	<b>3,069</b>
<b>Average invested capital</b>		<b>12,732</b>	<b>12,238</b>
<b>ROIC</b>		<b>25.6%</b>	<b>25.1%</b>

## Organic sales growth

# 4%

## EBIT grew by 3% to DKK million

# 4,047

## The EBIT margin was unchanged from 2016 at

# 27.9%



## Net operating profit after tax

# 2.1 Segments

### Segment reporting

The internal reporting framework used for reporting on revenue and expenses to the Executive Leadership Team and the Board of Directors has been established to reflect and report on the global functional responsibility setup at Novozymes. This setup consolidates functions by type, and Management reviews the results of the Group as a whole to assess performance. Thus, there is only one operating segment.

### Worldwide operations

The Group operates in four geographical regions: Europe, Middle East & Africa (including Denmark), North America, Asia Pacific and Latin America. From a revenue perspective, the US is the single largest market, contributing ~32% of the Group's revenue (2016: ~31%).

The geographical distribution of revenue is based on the country in which the goods are delivered. With a number of customers, central deliveries are made to specified locations and the final destination is unknown.

The stated geographical distribution of revenue may therefore vary from year to year if the delivery destination for these customers changes.

Most of the Group's intangible assets and property, plant and equipment are located in Denmark, the US and China at ~50%, ~30% and ~13% respectively (2016: ~47%, ~33% and ~14%).

### Revenue 2017 (2016)



DKK million

### Intangible assets and property, plant and equipment 2017 (2016)



DKK million

### Net investments 2017 (2016)



DKK million

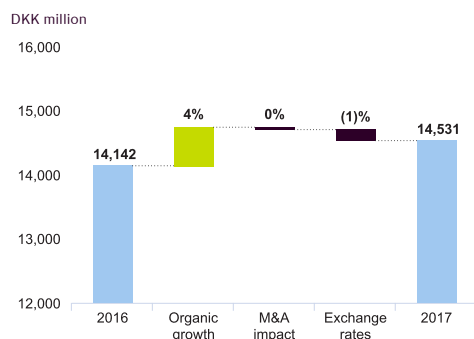
## Net operating profit after tax

# 2.2 Revenue

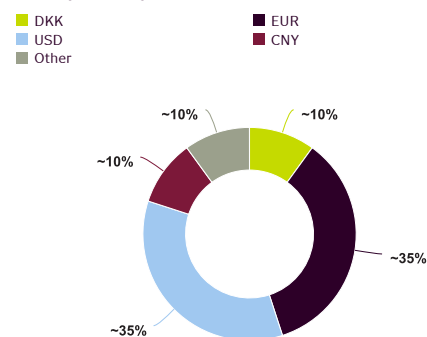
DKK million	2017	2016
Household Care	4,717	4,702
Food & Beverages	4,041	3,740
Bioenergy	2,644	2,438
Agriculture & Feed	2,108	2,206
Technical & Pharma	1,021	1,056
<b>Revenue</b>	<b>14,531</b>	<b>14,142</b>
Emerging markets	5,023	4,938
Developed markets	9,508	9,204
<b>Revenue</b>	<b>14,531</b>	<b>14,142</b>
Sales to the five largest customers as a percentage of revenue	30%	33%

Approximately 1% of the Group's total revenue arises from royalties.

### Sales growth 2017



### Sales by currency 2017



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

The Group has entered into partnerships where the Group manufactures and sells products to a partner, who undertakes the sales to end customers, and where the profit on products sold to end customers is shared between the partner and the Group based on predetermined profit-sharing mechanisms. Revenue related to this type of

partnership comprises approximately 13% of Novozymes' total annual revenue.

A minor part of the revenue, which is related to the expected profit share on products sold to the partner, requires significant judgment and estimates by Management. This includes estimating future sales prices to end customers along with their impact on rebate schemes and estimating product returns from end customers.

### ACCOUNTING POLICIES

Revenue includes sales of goods and related services and royalties, less goods returned and volume and cash discounts. Sales are recognized at the time of risk transfer relating to the goods sold, provided that the revenue can be measured on a reliable basis and payment is expected to be received. A liability is recognized when it is contractually agreed that goods can be returned and this is likely.

profit is distributed between the Group and the other contracting party on the basis of a predetermined formula.

Sales from these arrangements are recognized using information on the other contracting party's realized sales. Distribution of the profit is calculated and settled periodically, and a receivable/liability is recognized for any unsettled profit at the reporting date.

The Group has entered into agreements where the other contracting party undertakes sales to third parties and the

The Group has entered into commission agreements where agents undertake sales to third parties in return for commission on realized sales.

## Net operating profit after tax

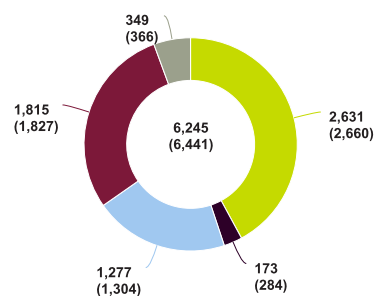
# 2.3 Employees

DKK million	2017	2016
Wages and salaries	2,965	3,007
Pensions – defined contribution plans	289	302
Other social security costs	273	262
Other employee costs	139	131
Stock-based payment	107	144
<b>Employee costs</b>	<b>3,773</b>	<b>3,846</b>
Recognized in the income statement under the following items:		
Cost of goods sold	1,342	1,378
Sales and distribution costs	811	830
Research and development costs	1,070	1,106
Administrative costs	531	517
	<b>3,754</b>	<b>3,831</b>
Change in employee costs recognized in Inventories	19	15
<b>Employee costs</b>	<b>3,773</b>	<b>3,846</b>

**Number of employees 2017 (2016)**



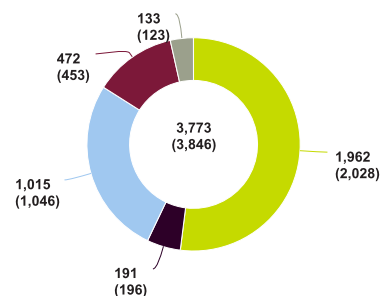
No.



**Employee costs 2017 (2016)**



DKK million





## Net operating profit after tax

# 2.3 Employees (continued)

	2017	2016
Average number of employees in the Group	6,301	6,408
Average number of employees who work with R&D	1,473	1,502
Number of employees outside Denmark as a percentage of total number of employees	58%	59%
Part-time employees	272	292
Full-time employees	5,973	6,149
<b>Employees</b>	<b>6,245</b>	<b>6,441</b>
Senior management	186	207
Management	1,122	1,169
Professional	1,816	1,868
Administrative	558	571
Skilled workers, laboratory technicians and other technicians	1,344	1,422
Process operators	1,219	1,204
<b>Employees by category</b>	<b>6,245</b>	<b>6,441</b>

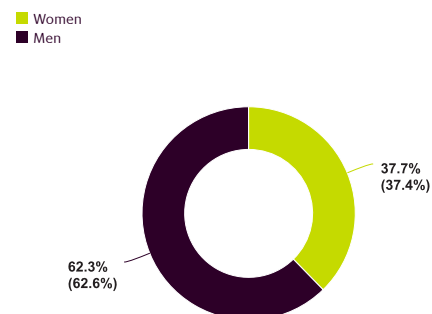
### ACCOUNTING POLICIES

The number of employees is derived from contractual obligations, but does not include employees on unpaid leave, temporary replacements, student interns, agency employees, consultants or PhD students. In calculating the number of full-time employees, employees with a working-time ratio of 95% or above are stated as full-time employees.

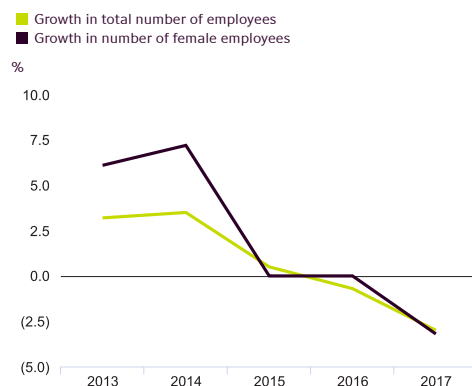
The average number of employees is calculated as the average of the number of permanent employees at the end of each quarter.

Job categories are defined as follows: Senior management comprises the CEO, executive vice presidents, vice presidents and directors. Management comprises middle managers and specialists. Professional comprises employees with academic backgrounds as well as team leaders. Process operators comprises operators and unskilled workers.

Employee gender distribution 2017 (2016)



Employee growth



## Net operating profit after tax

# 2.4 Research and development costs

DKK million	Note	2017	2016
Internal and external research and development costs		615	573
Employee costs	2.3	1,070	1,106
Amortization and impairment losses, intangible assets	3.1	122	92
Depreciation and impairment losses, property, plant and equipment	3.2	106	94
<b>Total research and development costs</b>	I/S	<b>1,913</b>	<b>1,865</b>
As a percentage of revenue		13.2%	13.2%

In 2017, Novozymes launched eight new products (2016: eight new products). New products comprises products with new or improved characteristics.

In 2017, Novozymes had 1,049 active patent families (2016: 1,123). Active patent families comprises the number of inventions for which there are one or more active patent applications or active patents at year-end.

Reference is made to the Innovation pipeline update in the business model for an overview of significant market-expanding opportunities that are currently being pursued in Research & Development.



### ACCOUNTING POLICIES

Research and development costs primarily comprise employee costs, internal and external costs related to development of new products and to ongoing optimization of production processes for existing products, and amortization, depreciation and impairment losses related to intangible assets and property, plant and equipment used in the research and development activities.

Research and development costs are expensed as incurred unless the criteria for capitalization are deemed to have been met. Due to significant uncertainty associated with the development of new products, research and development costs are not capitalized.

Income received from research and collaboration agreements is recognized in Other operating income.

## Net operating profit after tax

# 2.5 Other operating income, net

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Income and grants concerning research projects/ collaborations	26	29
Other secondary income, net	37	88
Loss on divestment of Albumedix	(66)	-
<b>Other operating income, net</b>	<b>(3)</b>	<b>117</b>

### § ACCOUNTING POLICIES

Other operating income comprises income that is not product related. This includes income from research and collaboration agreements, government grants, sale of

licenses, patents, etc., and other income of a secondary nature in relation to the main activities in the Group. This item also includes non-recurring income items in respect of damages, outlicensing, etc., and gains and losses on divestments.

## Net operating profit after tax

# 2.6 Tax

### Tax risk

Novozymes operates in many markets via sales companies and distributors, while production takes place in a small number of countries.

This leads to transactions between Group companies. Novozymes follows the OECD principles in setting internal transfer prices for these transactions, but this is a complicated area and entails a tax risk, partly because the area is subject to political judgment in every country. Novozymes regularly enters into dialogue with the tax authorities to reduce this risk, and has entered into advance pricing

agreements with the tax authorities in the countries where internal transactions are most significant.

For Novozymes, such agreements create predictability in relation to taxation and reduce the risk of Novozymes becoming part of the ongoing transfer-pricing debate around the world. A major part of internal transactions in the Group is covered by advance pricing agreements. See Novozymes' Position on Tax on Novozymes.com.

### Joint taxation

Novozymes A/S and its Danish subsidiaries are jointly taxed with the Danish companies in the Novo Holdings A/S Group. The joint taxation also covers withholding taxes in the form of dividend tax, royalty tax and interest tax. The Danish companies are jointly and individually liable for the joint taxation liability. Any subsequent adjustments to income taxes and withholding taxes may lead to a larger liability. The tax for the individual companies is allocated in full on the basis of the expected taxable income.

### Tax in the income statement

DKK million	2017	2016
Tax payable on net profit	(1,015)	(940)
Change in deferred tax	253	124
Revaluation of deferred tax due to changes in corporate tax rate	(33)	-
Adjustment for previous years	39	(15)
<b>Tax in the income statement</b>	<b>(756)</b>	<b>(831)</b>

### Calculation of effective tax rate:

Corporate tax rate in Denmark	(22.0)%	(22.0)%
Non-taxable income less non-deductible expenses	(0.6)%	(0.2)%
Difference in foreign tax rates	2.9%	0.4%
Revaluation of deferred tax due to changes in corporate tax rate	(0.8)%	-
Other adjustments	1.0%	0.4%
<b>Effective tax rate</b>	<b>(19.5)%</b>	<b>(21.4)%</b>



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

As the Group operates across many different countries, the calculation of the Group's total tax charge in the income statement necessarily involves a degree of estimation and judgment. Tax and transfer-pricing disputes with authorities in various countries may occur, and Management judgment is applied to assess the possible outcome of such disputes.

Payments in respect of tax liabilities for an accounting period result from payments on account and on the final resolution of open items. As a result, there can be substantial differences between the tax charge in the consolidated income statement and actual tax payments.

In 2017, Novozymes transferred intellectual property (IP) from Switzerland to Denmark. This had a positive impact on the 2017 effective tax rate of roughly 2 percentage points, included in "Difference in foreign tax rates". The one-time impact of adjusting deferred tax to the new US tax rate is shown as "Revaluation of deferred tax due to changes in corporate tax rate".



## Net operating profit after tax

# 2.6 Tax (continued)

### Deferred tax

DKK million	Deferred tax assets		Deferred tax liabilities	
	2017	2016	2017	2016
Intangible assets and property, plant and equipment	536	484	(1,064)	(1,271)
Inventories	441	533	(156)	(163)
Tax loss carry-forwards	6	41	-	-
Stock options	185	70	-	-
Other	255	287	(169)	(228)
	<b>1,423</b>	<b>1,415</b>	<b>(1,389)</b>	<b>(1,662)</b>
Offsetting items	(668)	(808)	668	808
<b>Deferred tax at December 31</b>	<b>755</b>	<b>607</b>	<b>(721)</b>	<b>(854)</b>

The tax value of the unrecognized share of tax loss carry-forwards, tax credits, etc. that do not expire amounted to DKK 26 million (2016: DKK 13 million).

DKK million	2017	2016
Deferred tax at January 1	(247)	(256)
Currency translation adjustments	(33)	13
Effect of business acquisitions	-	(64)
Tax related to the income statement	240	172
Tax on shareholders' equity items	74	(112)
<b>Deferred tax at December 31</b>	<b>34</b>	<b>(247)</b>
Deferred tax assets	755	607
Deferred tax liabilities	(721)	(854)
<b>Deferred tax at December 31</b>	<b>34</b>	<b>(247)</b>

### § ACCOUNTING POLICIES

Corporation tax, comprising the current tax liability, change in deferred tax for the year and possible adjustments relating to previous years, is recognized in the income statement, except to the extent that it relates to items recognized either in Other comprehensive income or directly in Shareholders' equity. Uncertain tax positions are assessed individually and recognized if it is probable that an amount is to be paid or received. Deferred tax is measured using the balance sheet liability method and comprises all temporary differences between the carrying amount and tax base of assets and liabilities. No deferred tax is recognized for goodwill, unless amortization of goodwill for tax purposes is allowed. The tax value of tax loss carry-forwards is included in the calculation of deferred tax to the extent that the tax losses can be expected to be utilized in the future.

Deferred tax is measured according to current tax rules and at the tax rate expected to be in force on elimination of the temporary differences. Changes in deferred tax due to tax rate changes are recognized in the income statement, except to the extent that they relate to items recognized either in Other comprehensive income or directly in Shareholders' equity.

## Net operating profit after tax

# 2.6 Tax (continued)

### Tax receivables and payables

DKK million	2017	2016
Tax payable, net, at January 1	(295)	(213)
Currency translation adjustments	(5)	9
Tax related to the income statement	(996)	(1,002)
Tax on shareholders' equity items	96	6
Tax paid for the current year, net	852	905
<b>Tax payables, net, at December 31</b>	<b>(348)</b>	<b>(295)</b>
Tax receivables	B/S 135	142
Tax payables	B/S (483)	(437)
<b>Tax payables, net, at December 31</b>	<b>(348)</b>	<b>(295)</b>
Of which due within 12 months	(70)	(59)
Of which due after more than 12 months	(278)	(236)
<b>Tax payables, net, at December 31</b>	<b>(348)</b>	<b>(295)</b>
Corporate income taxes paid are specified as follows:		
Income taxes paid in Denmark	527	633
Income taxes paid outside Denmark	325	272
<b>Total income taxes paid</b>	<b>852</b>	<b>905</b>

## Net operating profit after tax

# 2.7 Earnings per share

DKK million	2017	2016
<b>Profit used to calculate earnings per share</b>	1/S <b>3,119</b>	<b>3,050</b>
<b>Average number of shares</b>		
Weighted average number of shares in circulation	295,338,610	300,466,604
Average dilutive effect of outstanding stock options and stock awards	1,863,742	2,653,533
<b>Average number of diluted shares</b>	<b>297,202,352</b>	<b>303,120,137</b>
Earnings per share	DKK 10.56	DKK 10.15
Earnings per share, diluted	DKK 10.49	DKK 10.06



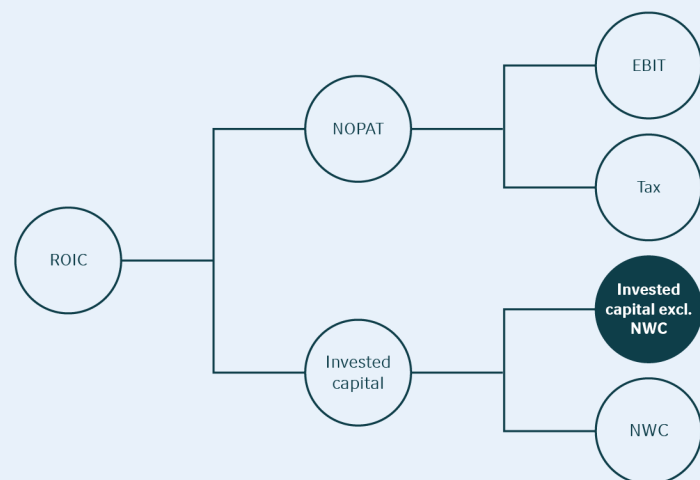
### ACCOUNTING POLICIES

Earnings per share is calculated as net profit attributable to shareholders in Novozymes A/S divided by the average number of shares in circulation.

Diluted earnings per share is calculated as net profit attributable to shareholders in Novozymes A/S divided by the average number of shares in circulation, including the dilutive effect of stock options “in the money.”

## Invested capital

# Invested capital



DKK million	Note	2017	2016
Intangible assets	3.1	2,432	2,737
Property, plant and equipment	3.2	8,926	8,641
Investments in associates	3.4	59	73
Net working capital (see Net working capital section)		2,023	2,088
Financial assets, non-interest-bearing		16	4
Provisions	3.3	(245)	(292)
Other non-current financial liabilities, non-interest-bearing		(9)	(14)
Other financial liabilities, non-interest-bearing		(8)	(111)
Tax, net		(314)	(542)
<b>Invested capital</b>		<b>12,880</b>	<b>12,584</b>
<b>Average invested capital</b>		<b>12,732</b>	<b>12,238</b>

ROIC up from 25.1% in 2016 to

# 25.6%

Increase in average invested capital of DKK million

# 494

Net investments excl. acq. up from DKK 1,188 million in 2016 to DKK million

# 1,665





## Invested capital

# 3.1 Intangible assets and impairment test of goodwill

DKK million	Goodwill	Acquired patents, trademarks, licenses and know-how, etc.	Completed IT development projects	IT development projects in progress	Total
Cost at January 1, 2017	1,159	3,156	420	49	4,784
Currency translation adjustments	(51)	(35)	(1)	-	(87)
Additions during the year	-	7	10	82	99
Disposals during the year	-	(205)	(7)	-	(212)
Transfers to/(from) other items	-	-	70	(70)	-
<b>Cost at December 31, 2017</b>	<b>1,108</b>	<b>2,923</b>	<b>492</b>	<b>61</b>	<b>4,584</b>
Amortization and impairment losses at January 1, 2017		(1,752)	(295)		(2,047)
Currency translation adjustments		14	1		15
Amortization during the year		(229)	(72)		(301)
Impairment losses		(27)	-		(27)
Disposals during the year		201	7		208
<b>Amortization and impairment losses at December 31, 2017</b>		<b>(1,793)</b>	<b>(359)</b>		<b>(2,152)</b>
<b>Carrying amount at December 31, 2017</b>	<b>1,108</b>	<b>1,130</b>	<b>133</b>	<b>61</b>	<b>2,432</b>

### Impairment

In 2017, an impairment loss of DKK 27 million on abandoned patents was recognized and included in Cost of goods sold and Research and development costs at DKK 15 million and DKK 12 million respectively.

### Impairment test of goodwill

Since 2016, Management has identified two cash-generating units (CGUs): Novozymes' main activities and the Albumedix

Group. With the Albumedix divestment in late December 2017, the activity in the Albumedix CGU – now the Biopharma CGU – has been reduced to sales-based royalty agreements.

The market value of Novozymes is significantly greater than equity, thus no further key assumptions are used in determining whether impairment of goodwill exists for Novozymes' main activities (2016: no impairment).

The recoverable amount of the Biopharma CGU has been determined based on a value-in-use calculation. The expected future cash flows are based on a forecasting period of four years, reflecting the term of the royalty agreements. The key assumptions used in testing for impairment are based on Management's expectations of future royalty payments, which are partly based on experience, as well as input from external experts. Future royalty payments are on average expected to be on par with the



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Management assesses the risk of impairment of the Group's intangible assets. This requires judgment in relation to the identification of cash-generating units (CGUs) and the underlying assumptions in the Group's impairment model.

If there is any indication of impairment, value in use is estimated and compared with the carrying amount. The calculation of value in use is based on the discounted cash flow method using estimates of future cash flows from the continuing use. The key parameters are the expected revenue streams and the rate used to discount the cash flows.

realized royalty payments in 2017. A WACC of 10% has been used to calculate the discounted cash flows for the Biopharma CGU.

As the value in use for the Biopharma CGU is greater than its carrying amount, no impairment has been identified (2016: no impairment).

## Invested capital

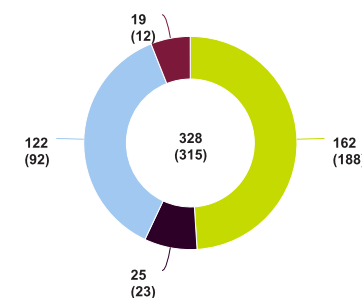
# 3.1 Intangible assets and impairment test of goodwill (continued)

DKK million	Goodwill	Acquired patents, trademarks, licenses and know-how, etc.	Completed IT development projects	IT development projects in progress	Total
Cost at January 1, 2016	1,140	2,912	349	24	4,425
Currency translation adjustments	(3)	2	2	-	1
Additions from business acquisitions	22	216	-	-	238
Additions during the year	-	26	42	72	140
Disposals during the year	-	-	(20)	-	(20)
Transfers to/(from) other items	-	-	47	(47)	-
<b>Cost at December 31, 2016</b>	<b>1,159</b>	<b>3,156</b>	<b>420</b>	<b>49</b>	<b>4,784</b>
Amortization and impairment losses at January 1, 2016		(1,487)	(262)		(1,749)
Currency translation adjustments		(1)	(2)		(3)
Amortization during the year		(224)	(51)		(275)
Impairment losses		(40)	-		(40)
Disposals during the year		-	20		20
<b>Amortization and impairment losses at December 31, 2016</b>		<b>(1,752)</b>	<b>(295)</b>		<b>(2,047)</b>
<b>Carrying amount at December 31, 2016</b>	<b>1,159</b>	<b>1,404</b>	<b>125</b>	<b>49</b>	<b>2,737</b>

Recognition of amortization and impairment losses by function 2017 (2016)

DKK million

■ Cost of goods sold      ■ Sales and distribution  
■ Research and development      ■ Administration



### Impairment

In 2016, an impairment loss of DKK 40 million on licenses was recognized and included in Cost of goods sold. The impairment loss was

the result of an impairment test performed on a specific asset where indication of impairment had been identified due to reduced cash flow projections for the asset in question. The

cash flow used for impairment was based on business plans for the period 2017-2021. A WACC of 11% was used to calculate the discounted cash flows.

## 3.1 Intangible assets and impairment test of goodwill (continued)

### § ACCOUNTING POLICIES

Intangible assets other than goodwill are measured at cost less accumulated amortization and impairment losses. Goodwill and IT development projects in progress are not subject to amortization.

Costs associated with large IT projects for the development of software for internal use are capitalized if they are incurred with a view to developing new and improved systems.

Amortization is based on the straight-line method over the expected useful lives of the finite-lived assets, as follows:

- Completed IT development projects are amortized over the useful life. IT development assets are amortized over a period of 3-5 years
- Acquired patents, trademarks, licenses and know-how are amortized over their useful lives. The useful lives of patents and trademarks are normally identical to the patent period. Licenses are amortized over the agreement period. Recognized patents, trademarks, licenses and know-how are amortized over a period of 7-15 years

Expected useful lives are reassessed regularly.

Research and development costs are expensed as incurred unless the criteria for capitalization are deemed to have been met. Due to significant uncertainty associated with the development of new products, research and development costs are not capitalized.

The Group regularly reviews the carrying amounts of its finite-lived intangible assets to determine whether there is an indication of an impairment loss. An impairment loss is recognized to the extent that the asset's carrying amount exceeds its estimated recoverable amount. Impairment losses are reversed only to the extent of changes in the assumptions and estimates underlying the impairment calculation.

Goodwill is tested for impairment annually or whenever there is an indication that the asset may be impaired.

## Invested capital

# 3.2 Property, plant and equipment

DKK million	Land and buildings	Plant and machinery	Other equipment	Assets under construction and prepayments	Total
Cost at January 1, 2017	5,604	9,957	1,693	856	18,110
Currency translation adjustments	(291)	(527)	(88)	(37)	(943)
Additions during the year	65	294	110	1,124	1,593
Disposals during the year	(8)	(126)	(66)	(10)	(210)
Transfers to/(from) other items	45	210	30	(285)	-
<b>Cost at December 31, 2017</b>	<b>5,415</b>	<b>9,808</b>	<b>1,679</b>	<b>1,648</b>	<b>18,550</b>
Depreciation and impairment losses at January 1, 2017	(2,673)	(5,718)	(1,078)		(9,469)
Currency translation adjustments	116	268	29		413
Depreciation for the year	(165)	(449)	(125)		(739)
Disposals during the year	4	110	57		171
<b>Depreciation and impairment losses at December 31, 2017</b>	<b>(2,718)</b>	<b>(5,789)</b>	<b>(1,117)</b>		<b>(9,624)</b>
<b>Carrying amount at December 31, 2017</b>	<b>2,697</b>	<b>4,019</b>	<b>562</b>	<b>1,648</b>	<b>8,926</b>
Of which assets held under finance leases	59	-	-	-	59

### Capitalized interest and pledges

Interest of DKK 10 million (2016: DKK 4 million) has been capitalized under Additions during the year above and included as Investing activities in the statement of cash flows. Capitalization rate: 2.05% (2016: 1.78%).

Land and buildings with a carrying amount of DKK 377 million (2016: DKK 397 million) have been pledged as security to credit institutions. The mortgage loan expires in 2029.

### Impairment

No impairment losses on property, plant and equipment have been recognized in 2017 (2016: no impairment losses).

## § ACCOUNTING POLICIES

Property, plant and equipment is measured at cost less accumulated depreciation and impairment losses. Borrowing costs in respect of construction of major assets are capitalized.

Depreciation is based on the straight-line method over the expected useful lives of the assets, as follows:

- Buildings: 12-50 years
- Plant and machinery: 5-25 years
- Other equipment: 3-18 years

The assets' residual value and useful life are reviewed on an annual basis, and adjusted if necessary at each reporting date.

The Group regularly reviews the carrying amounts of its property, plant and equipment to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss, if any. If the recoverable amount of an asset is estimated to be lower than its carrying amount, the carrying amount is reduced to the recoverable amount. Impairment losses are reversed only to the extent of changes in the assumptions and estimates underlying the impairment calculation.



## Invested capital

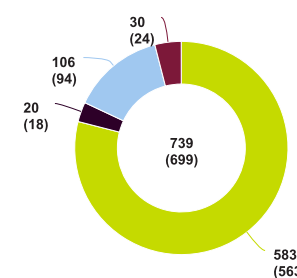
# 3.2 Property, plant and equipment (continued)

DKK million	Land and buildings	Plant and machinery	Other equipment	Assets under construction and prepayments	Total
Cost at January 1, 2016	5,183	9,564	1,598	649	16,994
Currency translation adjustments	31	42	11	11	95
Additions from business acquisitions	-	-	2	-	2
Additions during the year	326	197	82	530	1,135
Disposals during the year	(20)	(61)	(35)	-	(116)
Transfers to/(from) other items	84	215	35	(334)	-
<b>Cost at December 31, 2016</b>	<b>5,604</b>	<b>9,957</b>	<b>1,693</b>	<b>856</b>	<b>18,110</b>
Depreciation and impairment losses at January 1, 2016	(2,518)	(5,327)	(987)	-	(8,832)
Currency translation adjustments	(11)	(9)	(5)	-	(25)
Depreciation for the year	(148)	(426)	(125)	-	(699)
Disposals during the year	4	44	39	-	87
<b>Depreciation and impairment losses at December 31, 2016</b>	<b>(2,673)</b>	<b>(5,718)</b>	<b>(1,078)</b>	<b>-</b>	<b>(9,469)</b>
<b>Carrying amount at December 31, 2016</b>	<b>2,931</b>	<b>4,239</b>	<b>615</b>	<b>856</b>	<b>8,641</b>
Of which assets held under finance leases	59	-	-	-	59

Recognition of depreciation by function 2017 (2016)

■ Cost of goods sold
 ■ Research and development
 ■ Sales and distribution
 ■ Administration

DKK million



## Invested capital

# 3.3 Provisions

DKK million	2017			2016		
	Dismantling and restoration	Legal, contingent consideration and other	Total	Dismantling and restoration	Legal, contingent consideration and other	Total
Provisions at January 1	101	191	292	101	140	241
Currency translation adjustments	(7)	-	(7)	(1)	1	-
Additions during the year	-	21	21	1	72	73
Reversals during the year	(20)	(26)	(46)	-	(16)	(16)
Utilization during the year	-	(15)	(15)	-	(6)	(6)
<b>Provisions at December 31</b>	<b>74</b>	<b>171</b>	<b>245</b>	<b>101</b>	<b>191</b>	<b>292</b>
Recognized in the balance sheet as follows:						
Non-current	B/S 69	90	159	96	135	231
Current	B/S 5	81	86	5	56	61
<b>Provisions at December 31</b>	<b>74</b>	<b>171</b>	<b>245</b>	<b>101</b>	<b>191</b>	<b>292</b>

### Dismantling and restoration

Dismantling and restoration relates to estimated future costs of environmental restoration – Novozymes aims for our production sites to have no negative environmental impact – and restoration of leased premises when terminating the lease and vacating the premises. These liabilities relate to established circumstances, and these costs are expected to be incurred either when concrete measures are implemented or when the sites are vacated. The expected costs and timing are by nature uncertain.

Amounts with regard to restoration of leased premises are considered uncertain, as the final settlements will depend on thorough inspection of the premises and negotiations with the lessor at the time of vacating. The costs are expected to be incurred in a minimum of 1 year to a maximum of 15 years.

### Legal, contingent consideration and other

Novozymes is involved in a number of ongoing legal disputes, and provision is made for the estimated costs of these based on the current evaluation of the outcomes. The cases are expected to be finalized in 2018-2019. In Management's opinion, the outcome of these cases will not give rise to any significant loss beyond the amounts provided for at December 31, 2017.



### ACCOUNTING POLICIES

Provisions are recognized where a legal or constructive obligation has been incurred as a result of past events and it is probable it will lead to an outflow of financial resources. Provisions are measured at the present value of the expected expenditure required to settle the obligation.

No provisions are discounted, as discounting does not have any significant impact on the carrying amounts.

Contingent consideration and other provisions cover a number of obligations, including liability for returned goods, contingent consideration, etc. Other long-term employee benefits are also included, but at only a minor amount, as the main part of Novozymes' pension plans are defined contribution plans, covering approximately 99% of employees. These obligations are mainly expected to be incurred over a long period.

## Invested capital

# 3.4 Joint operations and associates

### Joint operations

In 2012, Novozymes formed a strategic partnership with Beta Renewables S.p.A. The parties have joint control of the partnership. The partnership had no material impact on revenue and earnings in 2017 (2016: no material impact), because biomass projects have not commercialized as expected in Beta Renewables. The contractual partnership expired in 2017, as renegotiations could not be completed due to financial difficulties in the M&G Group, the majority owner of Beta Renewables S.p.A.

Novozymes has interests in joint operations with Novo Nordisk. These are homeowners' associations and related utility facilities in connection with the shared Danish production sites in Kalundborg and Bagsværd. The operations had no impact on revenue and

earnings in 2017 (2016: no impact). Novozymes and Novo Nordisk share control of the arrangements equally.

### Associates

Novozymes holds 23.1% of the shares in Microbiogen Pty Ltd., with which Novozymes collaborates exclusively on the exploration and development of yeast for the ethanol industry.

Novozymes holds 19.35% of the shares in MagnaBioAnalytics LLC.

Novozymes holds 9.95% of the shares in Beta Renewables S.p.A., with which Novozymes formed a jointly controlled operation within biomass solutions up until 2017.

None of the associates is individually material to the Group.

DKK million		2017	2016
<b>Associates</b>			
Share of result	I/S	(14)	(31)
<b>Comprehensive income for the year</b>		<b>(14)</b>	<b>(31)</b>
<b>Investments in associates</b>	B/S	<b>59</b>	<b>73</b>

## § ACCOUNTING POLICIES

### Joint operations

The Group's holdings in joint operations are consolidated by including its interest in the joint operations' assets, liabilities, revenue and costs.

### Associates

Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment in an associate is initially recognized at cost, and the carrying amount is increased or decreased to recognize Novozymes' share of the profit or loss of the associate after the date of acquisition. The Group's investment in associates includes the fair value of the net assets and goodwill identified on acquisition.

The accounting policies of associates have been changed where necessary to ensure consistency with the accounting policies adopted by the Group. Gains and losses resulting from transactions between the Group and its associates are recognized in the Group's financial statements only to the extent of unrelated investors' investments in the associates.

In a step acquisition, the previously held equity interest in the acquiree is remeasured at its fair value on the acquisition date, and the resulting gain or loss is recognized in profit and loss. The estimated total fair value of the equity interest held immediately after the step acquisition is recognized as the cost of the equity interest.

## 3.5 Business acquisitions

No business acquisitions have taken place in 2017.

On September 15, 2016, Novozymes acquired 100% of the voting shares in Organobalance GmbH at a total purchase price of DKK 178 million. Organobalance GmbH owned a large collection of microbial strains and has strong capabilities in microbial screening and assay technology. The company is specialized in developing natural microbial solutions for customers and partners across a number of industries, including food, feed and animal health.

The purchase price allocation was finalized in 2016 and led to recognition of goodwill of DKK 22 million, intangible assets of DKK 216 million and a deferred tax liability of DKK 64 million.

The goodwill was attributable to expected synergies within Novozymes' existing microbial technologies and business areas. The goodwill was not tax deductible. The purchase agreement included a contingent consideration of up to DKK 30 million. In 2016, the cash outflow from the acquisition was DKK 146 million.

The consideration is contingent on achievement of a number of specific project development targets and sales targets in 2016-2018. DKK 12 million has been settled and the remaining part of the contingent consideration is unchanged.

### § ACCOUNTING POLICIES

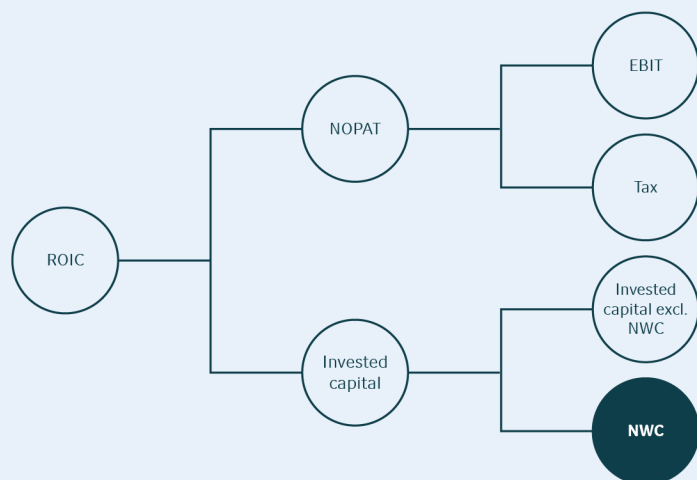
On acquisition of companies, the identifiable assets acquired and the liabilities and contingent liabilities assumed are recognized at the fair values at the acquisition date. The consideration transferred includes the fair value at the acquisition date of any contingent consideration arrangement.

Goodwill may subsequently be adjusted for changes in the fair value of the consideration transferred and/or changes in the fair value of the identifiable net assets acquired until 12 months after the acquisition date, to the extent such changes relate to facts and circumstances present at the acquisition date. Acquired companies are consolidated from the date of acquisition. Acquisition-related costs are expensed as incurred.



## Net working capital

# Net working capital



DKK million	Note	2017	2016
Other receivables, non-current	4.3	35	57
Inventories	4.1	2,586	2,488
Trade receivables	4.2	2,554	2,680
Other receivables	4.3	214	267
Deferred income	4.4	(542)	(788)
Trade payables		(1,341)	(1,194)
Other liabilities	4.5	(1,483)	(1,422)
<b>Net working capital</b>		<b>2,023</b>	<b>2,088</b>
<b>Average net working capital</b>		<b>2,056</b>	<b>1,898</b>

Average net working capital in DKK million

# 2,056

Net working capital as % of sales

# 13.9%

Deferred income related to The BioAg Alliance released as revenue in 2017 in DKK million

# 202



## 4.1 Inventories

DKK million	2017	2016
Raw materials and consumables	308	327
Work in progress	727	671
Finished goods	1,551	1,490
<b>Inventories at December 31</b>	<b>2,586</b>	<b>2,488</b>
	B/S	
Cost of materials, included under Cost of goods sold	3,451	3,254
Write-downs expensed during the year	111	82
Reversal of write-downs during the year*	45	42

\* Part of the reversal of write-downs can be attributed to written-down inventory being reused in production.



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Work in progress and Finished goods are measured at cost including indirect production costs. The indirect production costs capitalized under inventories amounted to DKK 862 million at the end of

2017 (2016: DKK 815 million). The indirect production costs are assessed on an ongoing basis to ensure reliable measurement of employee costs, capacity utilization, cost drivers and other relevant factors. Changes in these parameters may have an impact on the gross margin and the overall valuation of Work in progress and Finished goods.



### ACCOUNTING POLICIES

Inventories are measured at cost determined on a first-in first-out basis or net realizable value where this is lower.

The cost of Work in progress and Finished goods comprises direct production costs such as raw materials and consumables, energy and labor directly attributable to production as well as indirect production costs such as employee costs, maintenance and depreciation of plants, etc.

If the expected sales price less any completion costs and costs to execute sales (net realizable value) of inventories is lower than the carrying amount, the inventories are written down to net realizable value.

Novozymes has entered into a few agreements where Novozymes supplies goods to a customer's premises but retains title to the inventory until the goods are consumed in the customer's production. Such goods are derecognized from inventories in the period that they are consumed in the customer's production.

## Net working capital

# 4.2 Trade receivables

DKK million	2017	2016
Trade receivables	2,735	2,792
Allowances for doubtful trade receivables	(226)	(179)
	<b>2,509</b>	<b>2,613</b>
Amounts owed by related companies	45	67
<b>Trade receivables at December 31</b>	<b>2,554</b>	<b>2,680</b>
Changes in allowances for doubtful trade receivables:		
At January 1	179	179
Allowances during the year	128	66
Write-offs during the year	(13)	(18)
Reversed allowances	(68)	(48)
<b>Allowances at December 31</b>	<b>226</b>	<b>179</b>
Age of trade receivables that are past due but not impaired:		
Up to 30 days	141	131
Between 30 and 90 days	33	36
More than 90 days	21	13
<b>Trade receivables past due but not impaired at December 31</b>	<b>195</b>	<b>180</b>

Novozymes has collateral held as security for trade receivables in selected countries of DKK 64 million (2016: DKK 50 million).



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Allowances for doubtful trade receivables are made by Management when a loss has occurred due to expected inability of customers to make required payments. These allowances are estimated by Management based on an individual assessment of each receivable that includes the period overdue, payment history, changes to payment terms and

the likelihood of receiving payments. This analysis is combined with an overall assessment of the total allowance compared with the outstanding trade receivable balance. The allowance for trade receivables is estimated based on the most recent information about the creditworthiness of the customers. If the financial circumstances of or surrounding the customers change in future periods, an additional allowance could be required.



### ACCOUNTING POLICIES

Trade receivables are measured at amortized cost or net realizable value equivalent to

nominal value less allowances for doubtful receivables, whichever is lower. The cost of allowances for doubtful trade receivables is included in Sales and distribution costs.

## Net working capital

### 4.3 Other receivables

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Deposits	27	21
Prepaid expenses	97	114
Loans	-	5
Other	125	184
<b>Other receivables at December 31</b>	<b>249</b>	<b>324</b>
Recognized in the balance sheet as follows:		
Non-current	B/S 35	57
Current	B/S 214	267
<b>Other receivables at December 31</b>	<b>249</b>	<b>324</b>



## Net working capital

# 4.4 Deferred income

DKK million	Amortization ends (year)	2017	2016
The BioAg Alliance	2023	519	741
Other	Up to 2022	23	47
<b>Deferred income at December 31</b>		<b>542</b>	<b>788</b>
Recognized in the balance sheet as follows:			
Non-current	B/S	337	540
Current	B/S	205	248
<b>Deferred income at December 31</b>		<b>542</b>	<b>788</b>
Expected to be recognized in the income statement:			
Within 1 year		205	248
Between 1 and 5 years		283	430
After 5 years		54	110
<b>Deferred income at December 31</b>		<b>542</b>	<b>788</b>

At December 31, 2017, deferred income amounted to DKK 542 million (2016: DKK 788 million). This relates mainly to payments from Monsanto in connection with the formation

of The BioAg Alliance in 2014. The planned release of deferred income is based on an assessment of the earnings process and the underlying deliverables, which are reassessed

annually. The reassessment in 2017 has not changed the planned release of deferred income.

### ! CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Assessing the earnings process and the underlying deliverables for The BioAg Alliance requires judgment and is based on estimates of the future. These estimates are by nature subject to a high degree of uncertainty, and changes in such estimates may impact the timing of revenue recognition in future periods.

### § ACCOUNTING POLICIES

Deferred income reflects the portion of payments received that relates to future periods and deliverables, and for which the criteria for revenue recognition are not yet met. Deferred income is measured at nominal value.

# 4.5 Other liabilities

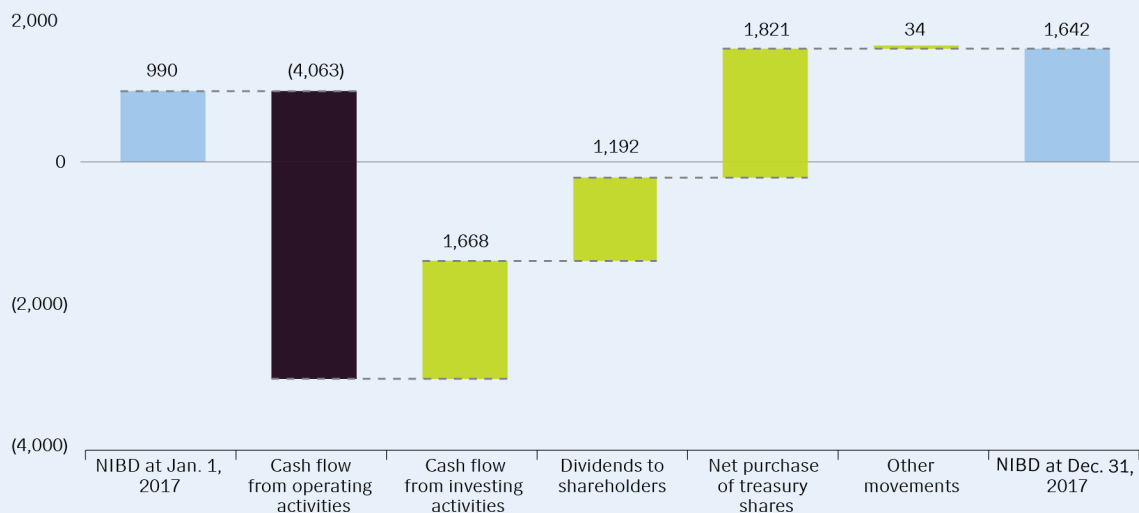
DKK million		2017	2016
Employee costs payable		671	712
Stock-based payment settled in cash		29	24
Other payables		783	686
<b>Other liabilities at December 31</b>	B/S	<b>1,483</b>	<b>1,422</b>

# Capital structure and financing



## Net interest-bearing debt, 2017

DKK million



NIBD/EBITDA at December 31, 2017

**0.3**

Return on equity up from 26.1% to

**27.1%**

**Novozymes bought back 6.8 million B shares under the stock buyback program with a transaction value of DKK million**

**2,000**

## 5.1 Financial risk factors and risk management

Novozymes' international operations mean that our earnings and financial position are exposed to a number of financial risk factors. Financial risks are managed centrally for the entire Group. The Treasury policy is approved by the Board of Directors, and sets the limits for the various financial risks and the derivatives used to hedge the risks. The Treasury Policy is adjusted on an ongoing basis to adapt to the market situation, and contains rules on which derivatives can be used for hedging, which counterparties can be used and the risk profile that is to be applied.

### Currency risk

Currency risk arises due to imbalances between income and costs in each individual currency and because Novozymes has more assets than liabilities in foreign currencies in connection with global operations.

Hedging of currency risk is carried out in the currencies where Novozymes has the largest exposure. The hedging is managed by entering into derivatives such as forward contracts, currency options and swaps. Loans and deposits in foreign currencies are also utilized as hedging. Hedge effectiveness is assessed on a regular basis.

Currency risk related to net investments in foreign subsidiaries is hedged where this is deemed appropriate by taking out loans and entering into swaps. Currently, there are no open transactions used to hedge equity investments.

### Foreign exchange sensitivity – 2017

The sensitivity analysis below shows the impact on net profit and other comprehensive income of a 5% change in the DKK versus the key

currencies to which Novozymes was exposed on December 31, 2017. For other comprehensive income, the analysis shows the impact on currency translation of net investments and does not include the impact of cash flow hedges, as these relate to future commercial transactions.

The sensitivity analysis reflects the transaction and translation risk, and assumes that the exchange rates are changed on December 31, 2017, and that all other variables remain constant. The table below shows the effect of an increase in exchange rates. A decrease in the exchange rate would have an opposite effect.

### Foreign exchange sensitivity – 2018 estimate

Operating profit/EBIT is exposed to currency changes, as the effect of hedges is included

in financial income/costs. Operating profit/EBIT is mainly exposed to the USD and EUR. A movement of 5% in the USD would result in a change in the expected operating profit/EBIT for 2018 of around DKK 110-130 million (2017: DKK 100-120 million). A 5% movement in the EUR would result in a change in expected operating profit/EBIT for 2018 of around DKK 200 million (2017: DKK 150-200 million). Of the expected USD cash flows for 2018, 100% has been hedged by forward contracts at an average rate of DKK 6.18. As a result, the impact on net profit from changes in the USD has been reduced significantly compared with the impact on operating profit/EBIT.

### Foreign exchange analysis

DKK million	Increase in exchange rates	2017		2016	
		Change in net profit	Change in other comprehensive income	Change in net profit	Change in other comprehensive income
CHF	5.0%	(4)	74	-	37
CNY	5.0%	(1)	107	-	108
USD	5.0%	1	212	1	229
Other	5.0%	8	85	(2)	93
<b>Total</b>		<b>4</b>	<b>478</b>	<b>(1)</b>	<b>467</b>

## 5.1 Financial risk factors and risk management (continued)

### Interest rate risk

Interest rate risk arises in relation to interest-bearing assets and liabilities. In accordance with Novozymes' Treasury Policy, a minimum of 30% of loans must be at fixed interest rates. Hedging of the interest risk is managed by entering into fixed-rate loans and interest rate swaps.

An increase of 1 percentage point in the average interest rate on Novozymes' net interest-bearing debt would have a negative effect on net profit of DKK 2 million (2016: positive effect of DKK 4 million). At December 31, 2017, 72% (2016: 80%) of the loan portfolio was at fixed interest rates.

### Credit risk

Credit risk arises especially on cash and cash equivalents, derivatives and trade receivables. The credit risk on trade receivables is countered by thorough, regular analyses based on customer type, country and specific conditions. The credit risk on cash and cash equivalents as well as derivatives is mitigated by the Treasury Policy, which limits exposure solely to counterparties that have an investment-grade credit rating. The credit risk is calculated on the basis of net market values and is governed by the Treasury Policy. Novozymes has entered into netting agreements (ISDA or similar) with all the banks used for trading in financial instruments, which means that Novozymes' credit risk is limited to net assets.

At December 31, 2017, the Group considered its maximum credit risk to be DKK 3,383 million (2016: DKK 3,857 million), which is the total of the Group's financial assets. At December 31, 2017, the maximum credit risk related to one counterparty was DKK 313 million (2016: DKK 294 million).

### Liquidity risk

In connection with the Group's ongoing financing of operations, including refinancing, efforts are made to ensure adequate and flexible liquidity. This is guaranteed by using committed credit facilities and placing free funds in deposits, government bonds or ultra-liquid mortgage bonds in accordance with the Treasury Policy.

At December 31, 2017, Novozymes' financial resources amounted to DKK 4,307 million (2016: DKK 4,305 million), consisting of net cash and cash equivalents and undrawn committed credit facilities of DKK 3,944 million, which expire in 2019-2022.

With the exception of debt to credit institutions, the maturity dates are primarily within one year.



## 5.2 Financial income and Financial costs

DKK million	2017	2016
Interest income	7	5
Gains on cash flow hedges	12	8
Gains on fair value hedges, net	-	1
Other foreign exchange gains, net	71	-
Fair value adjustments of cash-settled stock options	-	18
<b>Financial income</b>	<b>90</b>	<b>32</b>
Interest costs	(27)	(31)
Losses on fair value hedges, net	(56)	-
Other financial costs	(24)	(24)
Other foreign exchange losses, net	-	(11)
Write-down of financial asset	(120)	-
Fair value adjustments of cash-settled stock options	(20)	-
<b>Financial costs</b>	<b>(247)</b>	<b>(66)</b>
<b>Financial income/costs, net</b>	<b>(157)</b>	<b>(34)</b>

In 2017, the financial asset related to the partnership with Beta Renewables S.p.A. has been fully written down. This relates to a guarantee provided by M&G in 2015, because

2G projects have not commercialized as expected in Beta Renewables S.p.A. The write-down is a consequence of M&G experiencing financial difficulties. This has resulted in

a write-down of DKK 120 million, which is included in Financial costs.

### § ACCOUNTING POLICIES

Financial income and Financial costs comprise interest income and interest costs, realized and unrealized foreign exchange gains and losses, as well as fair value adjustments of cash-settled stock-based incentive programs, which are offset against Other liabilities and fair value adjustments of Other financial assets.

Financial income and Financial costs also include fair value adjustments of derivatives used to hedge assets and liabilities, and income and costs relating to cash flow hedges that are transferred from Other comprehensive income on realization of the hedged item.

## Capital structure and financing

# 5.3 Other financial liabilities

DKK million		2017	2016
Credit institutions		2,274	1,803
Derivatives		17	124
<b>Other financial liabilities at December 31</b>		<b>2,291</b>	<b>1,927</b>
Recognized in the balance sheet as follows:			
Non-current	B/S	1,312	1,727
Current	B/S	979	200
<b>Other financial liabilities at December 31</b>		<b>2,291</b>	<b>1,927</b>

### Liabilities arising from financing activities

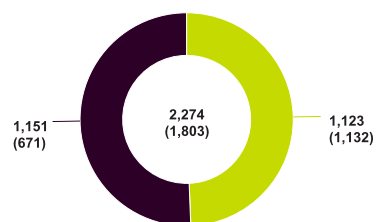
DKK million	2016	Financing cash flows	Foreign exchange movement	Other movements	2017
Long-term borrowing	1,713	-	2	(411)	1,304
Short-term borrowing	83	198	-	420	701
<b>Total liabilities from financing activities at December 31</b>	<b>1,796</b>	<b>198</b>	<b>2</b>	<b>9</b>	<b>2,005</b>

\* Other movements include the effect of reclassification of non-current portion of interest-bearing loans and borrowings.

#### Credit institutions – currency 2017 (2016)

■ EUR  
■ Other

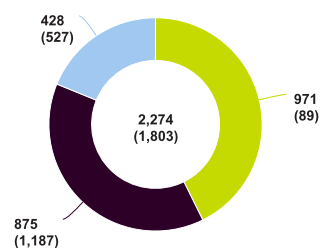
DKK million



#### Credit institutions – time to maturity 2017 (2016)

■ Less than 1 year  
■ Between 1 and 5 years  
■ More than 5 years

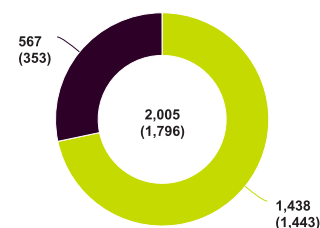
DKK million



#### Loan portfolio – fixed or floating interest rate 2017 (2016)

■ Fixed interest rate  
■ Floating interest rate

DKK million



## 5.4 Derivatives – hedge accounting

### Fair value hedges

The table below shows the derivatives the Group has contracted to hedge currency exposure on financial assets and liabilities that give rise to currency adjustments in the income statement.

DKK million	2017		2016	
	Contract amount based on agreed rates*	Fair value Dec. 31	Contract amount based on agreed rates*	Fair value Dec. 31
<b>Forward exchange contracts</b>				
CAD	(332)	2	(340)	(5)
CHF	(1,453)	(1)	(693)	-
USD	280	1	103	(2)
Other	175	(2)	(170)	(5)
<b>Fair value hedges at December 31</b>	<b>(1,330)</b>	<b>-</b>	<b>(1,100)</b>	<b>(12)</b>

\* Positive contract amounts represent a sale of the respective currency, and negative amounts represent a purchase.

The forward exchange contracts fall due in the period January 2018 to May 2018 (2016: January 2017 to April 2017).

The fair value hedges were 100% effective, as the gain on forward exchange contracts was DKK 56 million (2016: gain of DKK 0.4 million),

compared with a loss on the hedged items of DKK 56 million (2016: loss of DKK 0.4 million).

### § ACCOUNTING POLICIES

Hedge accounting consists of positive and negative fair values of derivatives, which are recognized in the balance sheet under Other financial assets and Other financial liabilities respectively.

Derivatives used for fair value hedges are measured at fair value on the reporting date, and value adjustments are recognized as Financial income or Financial costs.

Derivatives used for cash flow hedges and hedges of net investments in subsidiaries are measured at fair value on the reporting date, and value adjustments are recognized in Other comprehensive income.

Income and costs relating to cash flow hedges and hedges of net investments in subsidiaries are transferred from Other comprehensive income on realization of the hedged item and are recognized as Financial income or Financial costs.

Derivatives are recognized at the transaction date.

## 5.4 Derivatives – hedge accounting (continued)

### Cash flow hedges

The table below shows the derivatives that the Group has contracted to hedge currency and interest rate exposure in future cash flows.

DKK million	2017		2016	
	Contract amount based on agreed rates*	Fair value Dec. 31	Contract amount based on agreed rates*	Fair value Dec. 31
<b>Forward exchange contracts</b>				
USD	1,855	11	1,797	(95)
	<b>1,855</b>	<b>11</b>	<b>1,797</b>	<b>(95)</b>
<b>Currency options</b>				
USD	-	-	198	3
	-	-	<b>198</b>	<b>3</b>
<b>Interest rate swaps</b>				
EUR/EUR - pays fixed rate of 3.58% / earns variable rate of (0.273%) (2016: (0.191%))	112	(9)	111	(13)
DKK/DKK - pays fixed rate of 0.595% / earns variable rate of (0.165%) (2016: 0.025%)	521	(2)	521	(3)
	<b>633</b>	<b>(11)</b>	<b>632</b>	<b>(16)</b>
<b>Cash flow hedges at December 31</b>	<b>2,488</b>	<b>-</b>	<b>2,627</b>	<b>(108)</b>

\* Positive contract amounts represent a sale of the respective currency, and negative amounts represent a purchase.

The forward exchange contracts fall due in the period January 2018 to December 2018 (2016: January 2017 to December 2017), and the swaps fall due in July 2019 and May 2026 (2016: July 2019 and May 2026).

At the end of 2017, the Group had hedged 100% of expected future cash flows in USD for 2018 at an average rate of DKK 6.18 (2016: 100% of expected future cash flows in USD for 2017 at an average rate of DKK 6.65).



## 5.5 Common stock and treasury stock

	2017		2016	
	No.	Nominal value DKK million	No.	Nominal value DKK million
<b>Common stock</b>				
A common stock (shares of DKK 2)	53,743,600	107	53,743,600	107
B common stock (shares of DKK 2)	251,256,400	503	256,256,400	513
<b>Common stock at December 31</b>	<b>305,000,000</b>	<b>610</b>	<b>310,000,000</b>	<b>620</b>
	B/S			
<b>Treasury stock - B stock</b>				
Treasury stock at January 1	12,381,738	25	9,618,693	19
Additions during the year	6,770,271	13	6,767,182	14
Disposals during the year	(2,100,913)	(4)	(1,004,137)	(2)
Cancellation of common stock	(5,000,000)	(10)	(3,000,000)	(6)
<b>Treasury stock at December 31</b>	<b>12,051,096</b>	<b>24</b>	<b>12,381,738</b>	<b>25</b>

No.	2017	2016
<b>Shares of common stock in circulation</b>		
Shares of stock at January 1	297,618,262	303,381,307
Purchase of treasury stock	(6,770,271)	(6,767,182)
Sale of treasury stock	2,100,913	1,004,137
<b>Shares of common stock in circulation at December 31</b>	<b>292,948,904</b>	<b>297,618,262</b>

Each A share gives an entitlement to 20 votes, while each B share gives an entitlement to two votes.

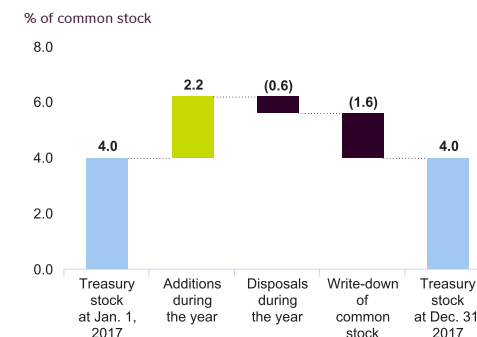
Each year the Board of Directors assesses whether the ownership structure with A and B common stock is optimal. The Board of Directors maintains that this is the best way to

safeguard Novozymes' long-term development to the benefit of the company's shareholders and other stakeholders.

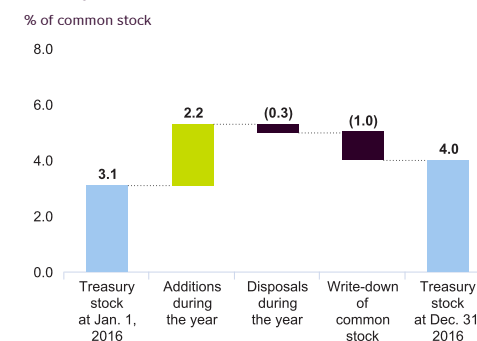
The treasury stock is used to reduce the common stock, and to hedge employees' exercise of granted stock awards and stock options.

In 2017, Novozymes canceled 5 million treasury shares, reducing the common stock to 305 million shares.

Treasury stock 2017



Treasury stock 2016



## Capital structure and financing

# 5.6 Financial assets and liabilities by category

The table below shows the Group's financial assets and financial liabilities at December 31 by category.

DKK million	Note	2017	2016
Trade receivables and other receivables, excl. prepaid expenses	4.2, 4.3	2,706	2,890
Cash and cash equivalents	6.6	632	812
<b>Loans and receivables</b>		<b>3,338</b>	<b>3,702</b>
Other financial assets		29	151
<b>Available-for-sale financial assets</b>		<b>29</b>	<b>151</b>
Derivatives		16	4
<b>Hedge accounting (asset)</b>		<b>16</b>	<b>4</b>
<b>Financial assets</b>		<b>3,383</b>	<b>3,857</b>
Credit institutions	5.3	(2,274)	(1,803)
Trade payables		(1,341)	(1,194)
Other payables	4.5	(783)	(686)
<b>Financial liabilities at amortized cost</b>		<b>(4,398)</b>	<b>(3,683)</b>
Derivatives	5.3	(17)	(124)
<b>Hedge accounting (liability)</b>		<b>(17)</b>	<b>(124)</b>
<b>Financial liabilities</b>		<b>(4,415)</b>	<b>(3,807)</b>

### Measurement and fair value hierarchy

All financial assets and liabilities, except for derivatives, are measured at cost and amortized cost. The carrying amounts for these approximate fair value. Derivatives are measured at fair value based on observable

data (level 2 input) according to the fair value hierarchy. The derivatives are not traded on an active market based on quoted prices, but are individual contracts. The fair value of these assets is determined using valuation techniques that utilize market-based data

such as exchange rates, interest rates, credit risk and volatilities. There are no financial instruments measured at fair value on the basis of quoted prices (level 1 input) or non-observable data (level 3 input).

Other financial notes

# Other financial notes

This section contains other statutory disclosures not related to the previous sections.



Grant date fair value of options  
granted in 2017 in DKK million

**67**

Realized audit fee ratio during  
2017

**1.14**

No. of Danish and foreign  
subsidiaries in the Group

**44**

## Other financial notes

# 6.1 Management remuneration

DKK million	2017			2016		
	Executive Leadership Team	Board of Directors	Total	Executive Leadership Team	Board of Directors	Total
Salaries and other short-term benefits	37	7	44	38	7	45
Defined contribution plans	9	-	9	9	-	9
Expensed stock-based incentive programs	40	-	40	36	-	36
Severance package	34	-	34	62	-	62
<b>Remuneration</b>	<b>120</b>	<b>7</b>	<b>127</b>	<b>145</b>	<b>7</b>	<b>152</b>
Total remuneration for registered members of the Executive Leadership Team *	43			48		

\* Registered as of December 31.

General guidelines for remuneration of the Board of Directors and the Executive Leadership Team of Novozymes A/S, assessed by the Board of Directors according to recommendations of the Nomination and Remuneration Committee, are approved at the Annual Shareholders' Meeting and can be found on Novozymes.com. Detailed information on Management remuneration is available in the Remuneration report found in the Governance section.

### Executive Leadership Team

Remuneration of the Executive Leadership Team comprises a base salary, pension contributions, a cash bonus scheme, stock-based incentive programs and other benefits

(car, telephone, etc.). The variable part of the total remuneration (cash bonus and stock-based incentive programs) is relatively large compared with the base salary, and is dependent on achievement of individual targets and Novozymes' targets for financial, social and environmental performance. The maximum annual cash bonus is equivalent to five months' fixed base salary plus pension contributions. The stock-based incentive programs are described in Note 6.2.

Members of the Executive Leadership Team have contracts of employment containing standard conditions for executive officers of Danish listed companies, including the periods of notice that both parties are required to give

and noncompetition clauses. If an executive officer's contract of employment is terminated by the company without any misconduct on the part of the executive officer, the executive officer has a notice period of 12 months. In addition to the notice period, the executive officer has a right to compensation which amounts to between one and two years' base salary and pension contributions, depending on the position held.

### Board of Directors

Remuneration to the Board of Directors comprises a fixed fee and is not incentive based.

### Changes in the Executive Leadership Team

In December 2017, Novozymes announced the appointment of a new Chief Financial Officer, Prisca Havranek-Kosicek, who will join the Executive Leadership Team on February 1, 2018. Prisca Havranek-Kosicek replaces former CFO Benny D. Loft, who left Novozymes in June 2017. Benny D. Loft's severance package was fully expensed in 2017. The severance package consists of salary and bonuses during the notice period (12 months) as well as termination compensation (24 months), totaling DKK 20.1 million. Furthermore, Benny D. Loft was awarded stock and stock options representing a fair value of DKK 13.7 million.

## Other financial notes

# 6.2 Stock-based payment

Novozymes has established stock-based incentive programs for the Executive Leadership Team, vice presidents and directors, and other employees. The purpose of these programs is to ensure common goals for Management, employees and shareholders. Allocation of programs has been, and remains, dependent on profit, value-creation and, in most cases, sustainability targets being achieved. At the time of granting stock options, there is no difference between exercise price and share price.

In 2017, a three-year incentive program for the Executive Leadership Team was established, covering the period 2017-2019. The program is a combination of stock options and stock, with half of the incentive program allocated in stock options and half in stock. Stock options will be awarded annually in 2017, 2018 and 2019, while the stock will be allocated in 2020. The final grant will depend on accumulated economic profit generated as well as average organic sales growth during the period.

- A total of up to 75% of the program will be allocated if economic profit accumulated for the three years attains DKK 7.5 billion. If economic profit of DKK 5.5 billion is generated over the period, 50% of the stock and stock options allocated to the economic profit pool will be awarded. Between the two points, stock options and stock will be granted proportionally. If the accumulated economic profit is below DKK 5.5 billion, no

stock or stock options will be awarded under the economic profit pool

- A total of up to 25% of the program will be allocated if Novozymes achieves 6% organic sales growth on average during the three years. If average organic sales growth of 3% is achieved, 50% of the stock and stock options allocated to the sales growth pool will be awarded. Between the two points, stock options and stock will be awarded proportionally. If the average sales growth is below 3%, no stock or stock options will be awarded under the sales growth pool

The total fair value of the program at grant date was DKK 162 million, which will be expensed over a six-year period. The value of the stock will be expensed over the three-year qualifying period (2017-2019). The stock options have a vesting period of four years, followed by an exercise period of five years. The fair value of the stock options will be expensed over a four-year period for each of the qualifying years (2017-2019). The recognition of the program expense is based on the expected target achievement, which is reassessed annually.

The program contains a maximum-value clause, allowing the Board of Directors to choose to limit the total allocation of stock and stock options if the intrinsic value of the program exceeds DKK 324 million at the end of the program in January 2020.

Furthermore, three-year programs have been established for vice presidents and directors covering the period 2017-2019 (approximately 180 vice presidents and directors). The total fair value at grant date is DKK 175 million, and the maximum-value clause is approximately DKK 350 million. The grant date fair value will be expensed over a six-year period, based on the expected target achievement, which is reassessed annually. The program for the vice presidents largely follows the same mechanisms as the program for the Executive Leadership Team. The new program for directors is a stock option program with the same targets for sales and economic profit as the incentive program for the Executive Leadership Team. Furthermore, there are awards linked to annual EBIT and sustainability targets.

In previous years, stock option programs were established for all or selected groups of employees, conferring the right to purchase one share per stock option. Allocations are made on the basis of the individual employee's base salary and achievement of a series of business targets – both financial and nonfinancial – set by the Board of Directors for each year. The stock options have a vesting period of four years, followed by an exercise period of five years. In order to exercise the options, the employee must still be employed on the exercise date. This does not apply to persons who have retired, taken a voluntary early retirement pension or been given notice.



## ACCOUNTING POLICIES

The Group has established stock-based incentive programs comprising equity-settled and cash-settled programs.

The fair value of the employee services received in exchange for the grant of stock options and stock awards is measured with reference to the fair value of the stock options and stock awards granted. The fair value is measured using the Black-Scholes option-pricing model.

The fair value of stock-based payment on the grant date is recognized as an employee cost over the period in which the stock options vest. In measuring the fair value, account is taken of the number of employees expected to gain entitlement to the options as well as the number of options the employees are expected to gain. This estimate is adjusted at the end of each period such that only the number of options to which employees are entitled or expected to be entitled is recognized.

The value of equity-settled programs is recognized in Shareholders' equity. The value of cash-settled programs, which are recognized as Other liabilities, is adjusted to fair value at the end of each period, and the subsequent adjustment in fair value is recognized in the income statement under Financial income or Financial costs.



## Other financial notes

# 6.2 Stock-based payment (continued)

### Stock options

The number of outstanding options (excl. stock awards) has developed as follows:

	Number of options				DKK		DKK million
	Executive Leadership Team	Vice presidents and directors	Other employees	Total	Avg. exercise price per option	Grant date fair value per option	Grant date fair value total
Outstanding at January 1, 2017	1,443,244	4,157,065	2,756,676	8,356,985	230		
Change in Management	(249,614)	249,614		-			
Granted*	478,444	990,999	543	1,469,986	250	45	67
Allocation adjustment	-	(54,837)	(155,173)	(210,010)	269		
Exercised**	(136,824)	(1,104,587)	(304,605)	(1,546,016)	121		
Forfeited	-	(135,413)	(99,995)	(235,408)	270		
Expired	-	(6,545)	(35,501)	(42,046)	78		
<b>Outstanding at December 31, 2017</b>	<b>1,535,250</b>	<b>4,096,296</b>	<b>2,161,945</b>	<b>7,793,491</b>	<b>253</b>		
Outstanding at January 1, 2016	1,231,992	3,802,574	2,317,133	7,351,699	200		
Change in Management	(244,290)	244,290		-			
Granted	467,927	745,634	837,438	2,050,999	274	50	103
Exercised	(12,385)	(599,133)	(264,069)	(875,587)	82		
Forfeited	-	(34,140)	(108,816)	(142,956)	278		
Expired	-	(2,160)	(25,010)	(27,170)	99		
<b>Outstanding at December 31, 2016</b>	<b>1,443,244</b>	<b>4,157,065</b>	<b>2,756,676</b>	<b>8,356,985</b>	<b>230</b>		
Number of exercisable options at December 31, 2017				972,760	178		
Number of exercisable options at December 31, 2016				1,200,563	89		

\* The allocation of stock options for 2017-2019 will be adjusted in January 2020 based on the cumulative level of target achievement in the period.

\*\* The weighted average share price for stock options exercised during 2017 was DKK 297 (2016: DKK 287).

	2017			2016		
	Remaining term to maturity of up to five years	Remaining term to maturity of above five years	Total	Remaining term to maturity of up to five years	Remaining term to maturity of above five years	Total
Stock options outstanding	No.	2,892,905	4,900,586	2,461,568	5,895,417	8,356,985
Weighted average term to maturity	Years	5	7	3	7	6
Range of exercise prices	DKK	83-317	249-317	78-209	233-317	78-317
Average exercise price	DKK	215	276	138	268	230

## Other financial notes

# 6.2 Stock-based payment (continued)

During 2017, DKK 107 million arising from stock-based payment has been recognized in the income statement (2016: DKK 144 million), of which DKK 104 million is from equity-settled programs (2016: DKK 136 million) and DKK 3 million from cash-settled programs (2016: DKK 8 million). The amount includes DKK 12 million related to the remaining total costs from outstanding programs, which was recognized in connection with the change of Chief Financial Officer.

Most programs are equity settled, and no liability is recognized for these. If allocations under the programs are made in countries where ownership of foreign stock is not permitted, the value of stock options is settled in cash instead, and a liability of DKK 29 million has been recognized for this in 2017 (2016: DKK 24 million). The intrinsic value of exercisable cash-settled programs in 2017 was DKK 34 million (2016: DKK 16 million).

The fair value of employee services received is measured with reference to the fair value of the equity instruments granted. Fair value at grant date is measured in accordance with the Black-Scholes model, using the average exercise price, the option term and the following significant assumptions:

		2017	2016
Expected future dividends per share	DKK	31.6	28.5
Volatility	%	26.6	25.1
Annual risk-free interest rate	%	0.0	0.1
Weighted average share price at grant date	DKK	250	274

Furthermore, the options are assumed to be exercised two years after the vesting period, on average, or at the option's expiry date if this is within one year. Volatility is estimated using the historical volatility over the last three years. The risk-free interest rate is based on Danish government bonds with a maturity equivalent to the option's term to maturity.

### Stock awards

In 2017, 500,918 stock awards were granted with a fair value of DKK 125 million (2016: DKK 0 million).

The total number of outstanding stock awards at December 31, 2017 was 460,175 (2016: 612,577). The fair value of these at December 31, 2017, was DKK 163 million (2016: DKK 149 million), which will be expensed over the three-year period (2017-2019).

### Warrants

At the beginning of 2016, a four-year incentive program was established for the Albumedix leadership team, covering the period 2016-2019. The program was a warrant program conferring the right to purchase new shares in Albumedix A/S.

The vesting conditions are not expected to be satisfied, and previously recognized expenses have been reversed.

## Other financial notes

# 6.3 Commitments and contingencies

DKK million	2017	2016
Recognized in the income statement in respect of rentals	115	119
Rental commitments expiring within the following periods from the reporting date:		
Less than 1 year	104	107
Between 1 and 2 years	57	85
Between 2 and 3 years	44	59
Between 3 and 4 years	33	42
Between 4 and 5 years	21	28
After 5 years	123	139
<b>Rental commitments at December 31</b>	<b>382</b>	<b>460</b>

Of this, commitments to related parties at December 31, 2017, amounted to DKK 39 million, compared with DKK 31 million at December 31, 2016. The above rental

commitments relate to noncancelable operating leases, primarily for buildings and offices.

DKK million	2017	2016
<b>Other commitments</b>		
Contractual obligations to third parties relating to property, plant and equipment	804	979
<b>Other guarantees</b>		
Other guarantees and commitments to related companies	47	75
Other guarantees and commitments	309	288

Contractual obligations to third parties relating to capital expenditure continue to be

significantly impacted by the construction of Innovation campus, Lyngby in Denmark.

### Pending litigation and arbitration

Novozymes is engaged in certain legal proceedings. In the opinion of the Board of Directors and Executive Leadership Team, settlement or continuation of these proceedings will not have a material effect on the Group's financial position. A liability is recognized under Provisions where the risk of a loss on a legal proceeding is considered more likely than not.

### Contract conditions

Several of the partnership contracts to which Novozymes is a party could be terminated by the opposite party in the event of significant changes concerning ownership or control of Novozymes. Furthermore, a few contracts contain provisions that restrict Novozymes' licenses to use specific forms of technology in such situations.

Novozymes is committed to establishing a biological learning center in conjunction with the innovation campus currently under construction in Lyngby, Denmark. The monetary commitment cannot be estimated reliably at the moment.

Novozymes is committed to increase production capacity in Latin America if a specific customer reaches certain milestones. The amount required to meet this commitment cannot be estimated reliably at the moment.

## Other financial notes

# 6.4 Related party transactions

Novozymes A/S is controlled by Novo Holdings A/S, domiciled in Hellerup, Denmark, which holds 71.2% of the votes in Novozymes A/S. The remaining stock is widely held. The ultimate parent of the Group is the Novo Nordisk Foundation (incorporated in Denmark).

Related parties are considered to be Novo Holdings A/S and the Novo Nordisk Foundation, and the Board of Directors and the Executive Management of these entities together with their immediate families. Other related parties are considered to be the Novo Nordisk Foundation's subsidiaries and associates, such as the Novo Nordisk

Group, the NNIT Group and the Chr. Hansen Group, associates of Novozymes A/S, as well as the Board of Directors and the Executive Leadership Team of Novozymes A/S together with their immediate families. Related parties also include companies where the above persons have control or joint control.

All agreements relating to these transactions are based on market price (arm's length). The majority of the agreements are renegotiated regularly. The Group has had the following transactions with related parties:

### Transactions

DKK million	2017	2016
<b>The Novo Nordisk Group</b>		
Sale of goods and materials	63	74
Sale of services	100	76
Purchase of goods and materials	(71)	(91)
Purchase of services	(74)	(72)
<b>The NNIT Group</b>		
Purchase of services	(34)	(41)
<b>The Chr. Hansen Group</b>		
Sale of goods and materials	39	25

There has not been any transactions with related parties other than the transactions described above, and normal remuneration

of the Board of Directors and Executive Leadership Team, which is presented in Note 6.1.

### Outstanding balances

DKK million	2017	2016
<b>The Novo Nordisk Group</b>		
Receivables	40	64
Payables	(99)	(117)
<b>The NNIT Group</b>		
Payables	(4)	(9)
<b>The Chr. Hansen Group</b>		
Receivables	5	3

## Other financial notes

# 6.5 Fees to statutory auditor

DKK million	2017	2016
Statutory audit	7	8
Other assurance engagements	-	-
Tax assurance services	7	4
Other services	1	1
<b>Fees to statutory auditor</b>	<b>15</b>	<b>13</b>
Audit fee ratio	1.14	0.63

### Audit fee policy

It is Novozymes' policy that the annual fee for nonaudit services provided by the statutory auditor should not exceed the annual fee for statutory audit services measured at Group level. The audit fee ratio can only exceed 1 with the approval of the Audit Committee.

In 2017, approval was given for extra advisory services of DKK 2.0 million related to applications for two major Bilateral Advance Pricing Agreements (BAPA).

No such approvals were given in 2016.

Implementation of the EU audit reform has led to restrictions on the nonaudit services that the auditor elected at the Annual Shareholders' Meeting may perform. The fee for nonaudit services performed for Novozymes by PricewaterhouseCoopers Statsautoriseret Revisionspartnerselskab is DKK 3 million (2016: DKK 2 million) and comprises review of interim financial statements for special purposes, audit of project accounts, tax

advisory services concerning transfer pricing, and other general financial reporting and tax consultancy. None of the nonaudit services performed are prohibited. The EU audit reform will lead to future restrictions on the size of the nonaudit services that the elected auditor may perform while performing the audit.



## Other financial notes

# 6.6 Cash flow

DKK million	Note	2017	2016
<b>Non-cash items</b>			
Accrued interest income and interest costs		20	26
(Gain)/loss on financial assets, etc., net		139	(21)
Depreciation, amortization and impairment losses	3.1, 3.2	1,067	1,014
Realized loss and allowances for doubtful trade receivables		69	15
Financial (gain)/loss on sale of assets		(9)	(7)
Unrealized foreign exchange (gain)/loss		(142)	(20)
Tax	2.6	756	831
Stock-based payment	6.2	107	144
Change in provisions		(22)	22
Loss on divestment of Albumedix	2.5	66	-
Profit/loss in associates		14	31
<b>Non-cash items</b>		<b>2,065</b>	<b>2,035</b>
<b>Business acquisitions, divestments and purchase of financial assets</b>			
Acquisition of Organobalance GmbH	3.5	-	(146)
Divestment of Albumedix		4	-
Other acquisitions and purchase of financial assets		(7)	(15)
<b>Cash flow from acquisitions, net</b>		<b>(3)</b>	<b>(161)</b>
<b>Cash and cash equivalents, net</b>			
Cash and cash equivalents		632	812
Credit institutions - on demand		(269)	(7)
<b>Cash and cash equivalents, net, at December 31</b>		<b>363</b>	<b>805</b>

Undrawn committed credit facilities were DKK 3,944 million at December 31, 2017 (2016: DKK 3,500 million), all of which expires in 2019-2022.



## ACCOUNTING POLICIES

The Consolidated statement of cash flows, which is compiled using the indirect method, shows cash flows from operating, investing and financing activities, and the Group's cash and cash equivalents at the beginning and end of the year.

Cash flow from operating activities comprises net profit adjusted for non-cash items, paid financial items, corporate income tax paid and change in working capital. Cash flow from investing activities comprises payments relating to the acquisition and sale of companies and non-controlling interests, intangible assets, and property, plant and equipment.

Cash flow from financing activities comprises proceeds from borrowings, repayment of principal on interest-bearing debt, payment of dividends, proceeds from stock issues, and the sale of treasury stock and other securities.

Cash and cash equivalents comprises cash at bank and in hand less current bank loans due on demand.

## Other financial notes

# 6.7 Events after the reporting date

No events have occurred after the balance sheet date of importance to the consolidated financial statements.

# 6.8 Group companies

	Activity	Percentage of shares owned		Activity	Percentage of shares owned	
<b>Parent company</b>						
Novozymes A/S, Denmark	■ □ ● ◆ ○					
<b>Subsidiaries</b>						
Novozymes BioAg S.A., Argentina	■ □ ● ◆	100	Novozymes Deutschland GmbH*, Germany	● ○	100	
Novozymes Australia Pty. Ltd.*, Australia	●	100	Organobalance GmbH, Germany	□ ● ◆	100	
Novozymes Belgium BVBA*, Belgium	●	100	Novozymes Hong Kong Ltd., Hong Kong		○	
Novozymes Latin America Ltda.*, Brazil	■ □ ● ◆	100	Novozymes South Asia Pvt. Ltd., India	■ □ ● ◆	100	
Novozymes BioAg Productos Para Agricultura Ltda., Brazil	□ ●	100	Novozymes Italia S.r.l.*, Italy	●	100	
Novozymes BioAg Limited, Canada	■ □ ● ◆ ○	100	Novozymes Japan Ltd.*, Japan	● ◆	100	
Novozymes Canada Limited, Canada	■ □ ●	100	Novozymes Malaysia Sdn. Bhd.*, Malaysia	●	100	
Novozymes (China) Biotechnology Co. Ltd., China	■ □ ●	100	Novozymes Mexicana, S.A. de C.V.*, Mexico	●	100	
Novozymes (China) Investment Co. Ltd., China	● ◆ ○	100	Novozymes Mexico, S.A. de C.V. , Mexico	●	100	
Novozymes (Shenyang) Biologicals Co. Ltd., China	■ □ ●	100	Novozymes Netherlands BVBA*, Netherlands	●	100	
Suzhou Hongda Enzyme Co. Ltd., China	■ □ ●	96	Novozymes RUS LLC*, Russia	●	100	
Novozymes Bioindustrial A/S*, Denmark		○	100	Novozymes Singapore Pte. Ltd.*, Singapore		○
Novozymes Bioindustrial China A/S*, Denmark		○	100	Novozymes South Africa (Pty) Ltd.*, South Africa	●	100
Novozymes Biopharma DK A/S*, Denmark		○	100	Novozymes Korea Limited*, South Korea	●	100
Novozymes BioAg A/S*, Denmark		○	100	Novozymes Spain S.A.*, Spain	●	100
Novozymes France S.A.S.*, France	● ◆	100	Novozymes Sweden AB*, Sweden	●	100	
			Novozymes Switzerland AG, Switzerland	■ ●	100	
			Novozymes Switzerland Holding AG*, Switzerland		○	
			Novozymes Enzim Dis Ticaret Ltd. Sirketi*, Turkey	●	100	
			Novozymes UK Ltd.*, UK	● ◆	100	

Other financial notes

## 6.8 Group companies (continued)

	Activity	Percentage of shares owned		Activity	Percentage of shares owned
Novozymes Biopharma US, Inc., USA	●	100	<b>Joint operations/associates</b>		
Novozymes BioAg, Inc., USA	■ □ ●	100	Houseowners' Association Smørmosen*, Denmark		
Novozymes Biologicals, Inc., USA	■ □ ● ◆	100	Houseowners' Association Hallas Park*, Denmark		
Novozymes Blair, Inc., USA	■ □	100	Microbiogen PTY Ltd.*, Australia		23.10
Novozymes, Inc., USA	◆	100	Beta Renewables S.p.A.*, Italy		9.95
Novozymes North America, Inc., USA	■ □ ● ◆	100	MagnaBioAnalytics LLC, USA		19.35
Novozymes US, Inc.*, USA	○	100			
Pacific Vet Group-USA, Inc., USA	□ ● ◆	100			

■ ISO 14001-certified sites. All major companies are also ISO 9001 certified.

□ Production

● Sales & Marketing

◆ Research & Development

○ Holding companies, etc.

\* Owned directly by Novozymes A/S.

# Environmental data

We measure our performance in areas that have an impact on the environment. One of the most important measures is our estimate of the CO2 emissions avoided as a result of customers' application of Novozymes' products in their products or processes. We also focus on reducing our own CO2 emissions and use of resources, and mitigating the risk of potential harm to the environment.



Estimated tons of CO2 saved  
from customers' application of  
Novozymes' products

**76 million**

CO2 intensity reduction compared  
with 2014 baseline

**11%**

Renewable energy share of total  
energy consumption

**24%**

# 7.1 Climate change

Climate change is material to Novozymes. Increasing demand for low-carbon products and solutions offers many opportunities for Novozymes to grow its business. On the other hand, impacts associated with climate change also pose multiple risks to Novozymes' supply chain and operations, such as regulatory action and physical or reputational damage. Our approach to climate change management is part of our strategy, and outlined in our Sustainability Policy and position paper on climate change. Several departments work closely to drive the climate change agenda, both inside and outside the organization.

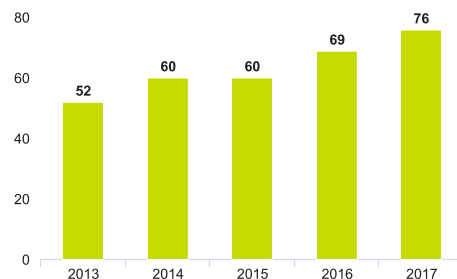
We believe that a transition toward a biobased economy that relies on renewable biological resources can assist the planet in becoming more resource efficient and tackling climate change. Our biosolutions in industries such as bioenergy and agriculture typically offer customers and end users reduced greenhouse gas (GHG) emissions due to lower energy, water, raw material and chemical consumption compared with conventional technologies.

Novozymes has a long-term target that measures the net relative CO<sub>2</sub> impact that our products have on society compared with conventional technologies. This target is expressed as CO<sub>2</sub> emissions avoided over the life cycle of our products and also includes the CO<sub>2</sub> emissions generated across our supply chain and in our production. In 2017,

we met the target for the year by helping customers save an estimated 76 million tons of CO<sub>2</sub> emissions through the application of our products. This is equivalent to taking approximately 32 million cars off the road.

**Estimated annual CO<sub>2</sub> savings**

Million tons of CO<sub>2</sub>



Since 2004, Novozymes has documented the cradle-to-grave environmental impact of its biosolutions by conducting ISO14040-reviewed life cycle assessment (LCA) studies. Read more about our approach to LCA on [Novozymes.com](http://Novozymes.com).

In 2017, we focused our efforts on supporting commercial stakeholders in their efforts to reduce GHG emissions by engaging directly with customers and trade publications. For instance, we developed and deployed a sustainability calculator for our feed enzyme customers in Latin America together with DSM. To engage a wider audience, we also published an article targeting global poultry and feed professionals, which demonstrated how feed enzyme solutions contribute to the UN Sustainable Development Goals. We also regularly engage with our customers in training sessions on how optimal animal nutrition can mitigate climate change impact and support sustainable development.

Novozymes also supports global climate action through transparent climate disclosure, responsible public advocacy and partnerships. To learn more, see [Advocacy and policy engagement](#) in the Sustainability section.



**CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS**

Novozymes uses LCAs to estimate the CO<sub>2</sub> emissions that customers avoid by using Novozymes' products in their processes or products. A calculation methodology to consolidate the LCAs has been defined and consistently applied; however, the individual LCAs depend on assumptions and estimates, which means that the result of the calculation will be an approximation.



## Environmental data

# 7.1 Climate change (continued)

Novozymes' efforts to reduce greenhouse gas (GHG) emissions in its operations are driven by its target to reduce CO<sub>2</sub> intensity. This target is closely linked to the targets to improve

energy efficiency and increase the share of energy sourced from renewable sources in our operations. In 2017, our CO<sub>2</sub> intensity reduction stood at 11%, meeting the target of

9%. We report our performance on the energy targets in Note 7.2 Energy.

Novozymes strives to make its operations less carbon intensive by implementing various energy efficiency projects. In 2017, we executed a portfolio of projects with focus on regions with high carbon footprint, to maximize CO<sub>2</sub> savings. More than half of the energy savings realized in 2017 came from projects undertaken at sites located in regions with a high carbon footprint, such as the US and China. We will share and implement best practices learnt from these projects across all our production sites.

Going forward, Novozymes will continue to focus on reducing its CO<sub>2</sub> intensity by purchasing more energy from renewable sources and reducing consumption of fossil-based energy through efficiency projects.

According to the Scope 2 Guidance in the GHG Protocol, scope 2 CO<sub>2</sub> emissions must be calculated using both the location-based and market-based methods. For Novozymes, the difference between market-based and location-based CO<sub>2</sub> emissions is most significant in Denmark, where we purchase 100% renewable electricity.

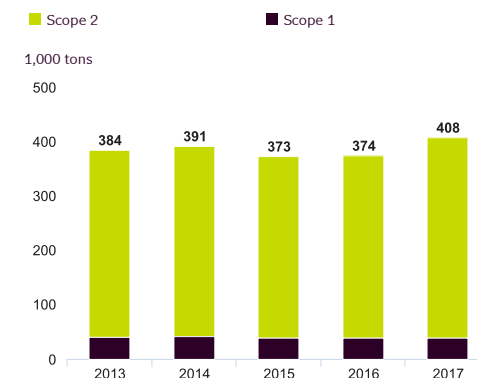
### CO<sub>2</sub>-equivalent emissions

1,000 tons	2017	2016
Natural gas	38	38
Gas oil, light fuel oil and diesel oil	-	-
HCFCs	1	1
<b>Scope 1</b>	<b>39</b>	<b>39</b>
District heat	10	8
Electricity	283	258
Steam	76	69
<b>Scope 2 (market-based)</b>	<b>369</b>	<b>335</b>
Ship	7	5
Truck	17	17
Air freight	15	17
<b>Scope 3</b>	<b>39</b>	<b>39</b>
<b>Emissions, total</b>	<b>447</b>	<b>413</b>

### Market-based vs. location-based scope 2 emissions

1,000 tons	2017	2016
Scope 2 CO <sub>2</sub> emissions (market-based)	369	335
Scope 2 CO <sub>2</sub> emissions (location-based)	442	389

5-year operational emissions (CO<sub>2</sub>-eqv.)



## 7.1 Climate change (continued)

### § ACCOUNTING POLICIES

The estimated reduction in CO<sub>2</sub> emissions resulting from customers' application of Novozymes' products is based on annually updated life cycle assessments (LCAs) of Novozymes' products. The LCAs are prepared and updated by Novozymes and subject to assumptions and estimates.

Reported CO<sub>2</sub> emissions comprise scope 1, scope 2 and emissions from outbound transport of products.

CO<sub>2</sub> from internally generated energy (scope 1) is calculated based on the amount of fuel consumed, using local emission factors.

CO<sub>2</sub> from externally generated energy (scope 2) is reported in accordance with both the market-based and the location-based method, as defined by the Greenhouse Gas (GHG) Protocol. The location-based method uses annually determined local emission factors from power plants or their organizations. If emission factors are not available, annually determined emission factors from Danish authorities and suppliers are used.

Transport-related CO<sub>2</sub> emissions (scope 3) are calculated based on principles described in the GHG Protocol. Reported quantities comprise CO<sub>2</sub> emissions related to transport

from all primary enzyme production sites to the customer where Novozymes pays for the freight. Transport between production sites is also included. Transport of raw materials to a production site is not included. CO<sub>2</sub> emissions generated at external warehouses are not included. Emission data are calculated based on distance and emission factors from the GHG Protocol.

The environmental impact potentials for global warming and ozone layer depletion are calculated on the basis of data published by the US Environmental Protection Agency (EPA) and the Montreal Protocol published by the United Nations Environment Programme (UNEP).

CO<sub>2</sub> intensity is measured as CO<sub>2</sub> emissions (scope 1+2) less emissions from energy offset by green energy produced from Novozymes' waste, divided by gross profit. The intensity reduction is calculated as the relative improvement in intensity compared with the base year (2014).

For sites acquired in 2015 or later, the baseline index is calculated based on the data reported in the first full year of operating as a Novozymes site. Divested sites are removed from the index for the full period. Newly constructed sites are included from the first quarter after qualification.

## Environmental data

# 7.2 Energy

Energy is material to Novozymes' operations, as our production processes are dependent largely on electricity and steam. Across the value chain, our biosolutions enable customers and end users to save energy in certain applications compared with conventional methods.

Novozyymes' approach to managing energy in its own operations focuses on improving energy efficiency at its production sites and increasing the share of renewables in its energy mix. Our performance in these two areas is driven by targets. For more information, see Outlook 2018. Novozymes' Supply Operations

and Sourcing departments are responsible for managing all energy efficiency and renewable energy-sourcing efforts.

In 2017, Novozymes' energy efficiency improved by 4% compared with the 2014 baseline, falling short of the target of 7%. This was because absolute energy consumption increased at a higher rate than gross profit, resulting in reduced performance compared with 2016. The increase in consumption was due to significantly higher capacity utilization at Novozymes' production sites. Throughout the year, several energy efficiency projects were undertaken globally with increased focus at

sites with a higher carbon footprint (e.g. in the US and China). We estimate that these projects resulted in energy savings of around 25,000 GJ.

Energy from renewable sources accounted for 24% of the total energy consumed in 2017. In Denmark, we purchase all our electricity from renewable sources, specifically from the Horns Rev II wind farm. In March 2017, we also began purchasing all our electricity in Brazil from renewable sources.

In 2017, Novozymes signed a new 20-year agreement to transition its supply of steam to renewable sources for its largest production

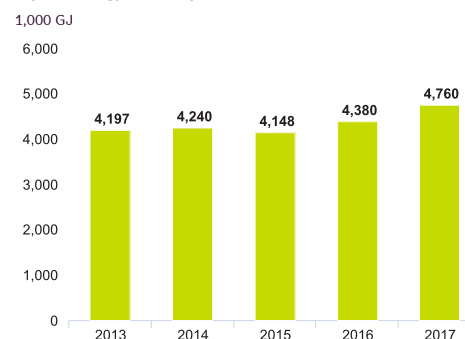
site in Kalundborg, Denmark. In collaboration with Novo Nordisk and the utility companies Kalundborg Forsyning and Ørsted, this agreement will enable Denmark's largest coal-fired power station unit, the Asnæs Power Station, to phase out coal and replace it with wood chips by the end of 2019.

Going forward, Novozymes will continue to focus on finding opportunities to procure renewable energy in each of its operating regions. Furthermore, we will prioritize investment in energy efficiency in geographies where there are limited options to procure renewable energy.

### Energy consumption by primary source

1,000 GJ	2017	2016
Natural gas	696	691
Biogas	69	55
Gas oil, light fuel oil and diesel oil	7	5
<b>Internally generated energy, total</b>	<b>772</b>	<b>751</b>
Electricity – conventional	1,780	1,636
Electricity – renewable	1,080	967
District heat – conventional	181	156
District heat – renewable	2	9
Steam	945	861
<b>Externally purchased energy, total</b>	<b>3,988</b>	<b>3,629</b>
<b>Energy consumption, total</b>	<b>4,760</b>	<b>4,380</b>
Energy production from waste	36	72

### 5-year energy consumption



## 7.2 Energy (continued)

### § ACCOUNTING POLICIES

Net energy consumption includes quantities consumed both in the production process and in other areas, less energy production from Novozymes' waste.

Internally generated energy is measured as fuel consumption converted to energy based on the lower combustion value and weight by volume, except in the US, where legal requirements for reporting of CO<sub>2</sub> state that the higher combustion value is to be applied. Fuel consumption comprises all types of fuels used to produce electricity, heat and steam on site and is converted to energy using factors supplied by utility providers or local authorities. Fuel for transportation is not included.

Externally generated energy is the input to Novozymes of externally generated electricity, heat and steam.

Energy produced from waste or wastewater is renewable and corresponds to the total energy (heat, electricity or steam) produced by an internal or external utility provider. An example is energy produced from biomass waste or biogas.

Reported quantities are based on meter readings, with the exception of steam, which may be subject to calculation.

Energy efficiency is measured by dividing net energy consumption by gross profit. The efficiency improvement is calculated as the relative improvement in efficiency compared with the base year (2014).

The quantities used in the calculation correspond to those reported as net energy consumption, i.e. purchased energy less energy produced from Novozymes' biomass waste.

For sites acquired in 2015 or later, the baseline index is calculated based on the data reported in the first full year of operating as a Novozymes site. Divested sites are removed from the index for the full period. Newly constructed sites are included from the first quarter after qualification.

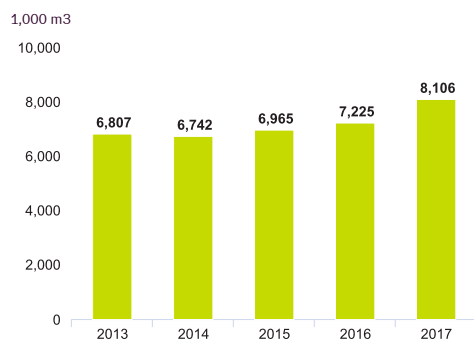
The renewable energy percentage is calculated by dividing consumed renewable energy by total energy consumption. Renewable energy used at Novozymes sites comprises energy that is generated from natural processes and continuously replenished. Sources include solar, wind and hydropower-based electricity and energy from biogas.

## Environmental data

# 7.3 Water

Water is material to Novozymes within its operations, as well as across the value chain, as enzyme production is water intensive and generates substantial amounts of wastewater. Water is also crucial in the production of the agriculture-based raw materials required for enzyme manufacturing.

### 5-year water consumption



Novozymes' solutions can help customers and consumers reduce water consumption compared with conventional methods in certain applications (e.g. textile processing), while the wastewater treatment solutions can improve treatment processes and the quality of treated water.

We strive to mitigate the risks associated with water usage and wastewater disposal by managing water within our operations. We are committed to improving our water efficiency and ensuring compliance with wastewater discharge regulations at all our significant sites. This approach to water management is anchored in our Sustainability Policy, and is reinforced by our target to improve water efficiency in operations. For more information, please refer to Outlook 2018.

Novozymes' Supply Operations and Quality, Environment & Safety departments manage and monitor all water efficiency and wastewater management efforts.

Novozymes continued to emphasize water savings at its various sites in 2017. For example, at our production site in Kalundborg, Denmark, we estimate that we saved around 73,000 m<sup>3</sup> of water through various projects and process optimization. However, despite these efforts, Novozymes' water efficiency in 2017 declined by 2%, compared with the 2014 baseline, falling short of the target of a 4% improvement. This was because absolute water consumption increased at a higher rate than gross profit, resulting in reduced performance compared with 2016. This increase in consumption was due to significantly higher capacity utilization at Novozymes' production sites.

### Water by primary source

1,000 m <sup>3</sup>	2017	2016
Drinking water	5,427	4,984
Industrial water	2,339	1,931
Steam	340	310
<b>Water, total</b>	<b>8,106</b>	<b>7,225</b>



## Environmental data

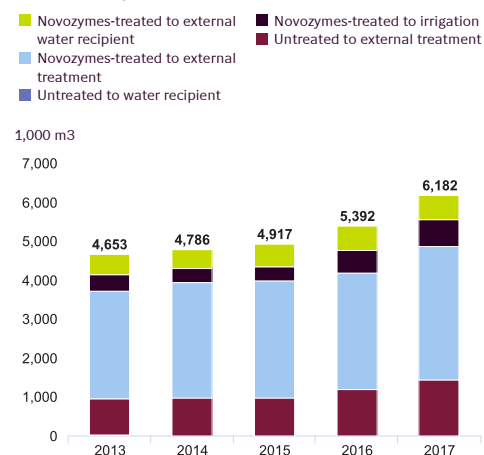
# 7.3 Water (continued)

Wastewater treatment is high on the agenda at our production sites. Currently, most of our wastewater is treated in biological wastewater treatment systems and then discharged either to further municipal treatment facilities or other recipients, or used for irrigation in agriculture.

In 2017, Novozymes invested around DKK 75 million to increase the capacity of the wastewater treatment plant at the Kalundborg site in Denmark. This expansion will also result in an increase in on-site renewable energy production through the generation of biogas.

Looking ahead, we will improve our understanding of site-specific water-related risks. We also aim to identify new opportunities for water savings and wastewater capture and reuse, and share best practices across sites.

### Wastewater by treatment method



### Wastewater treatment

1,000 m³	2017	2016
Wastewater used for irrigation	673	596
Wastewater discharged	5,509	4,796
<b>Wastewater volume, total</b>	<b>6,182</b>	<b>5,392</b>

## § ACCOUNTING POLICIES

Water includes drinking water, industrial water and externally supplied steam. Drinking water is water of drinking-water quality. Industrial water is not of drinking-water quality, but is suitable for certain industrial processes, for example for use in cooling towers. Industrial water can come from lakes or wells.

The reported quantities are stated based on the metered intake of water to Novozymes and include quantities consumed both in the production process and in other areas. The reported quantities of steam are converted to volume of running water and are therefore subject to calculation.

Water efficiency is measured by dividing water consumption by gross profit. The efficiency improvement is calculated as the relative improvement in efficiency compared with the base year (2014). The quantities used in the calculation correspond to those reported as water consumption.

For sites acquired in 2015 or later, the baseline index is calculated based on the data reported in the first full year of operating as a Novozymes site. Divested sites are removed from the index for the full period. Newly constructed sites are included from the first quarter after qualification.

Wastewater is measured as the volume discharged by Novozymes or calculated based on water consumption.

## Environmental data

# 7.4 Waste

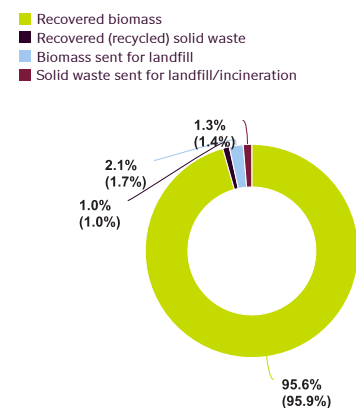
Novozymes is committed to supporting the transition to a circular economy through sustainable consumption and production practices. That is why the responsible management and disposal of waste and by-products is included in the median category in Novozymes' materiality matrix.

Novozymes' waste and by-products consist of three broad categories: biomass, nonhazardous solid waste and hazardous waste. Each production site regularly reports waste and by-products generated in terms of category and disposal method. We have adopted a site-specific management approach, because waste handling is a complex issue that is regulated locally and involves many external service providers.

Biomass, which accounts for the majority of total waste and by-products generated by

Novozymes' production sites, is a by-product rich in nitrogen and phosphorus. 98% of total biomass generated in 2017 was recovered and sold to local farmers as NovoGro®, an organic agricultural fertilizer, or composted.

**Waste and by-products recovered 2017 (2016)**



In 2017, Novozymes signed an agreement with two Danish energy companies, Ørsted and Bigadan, to further utilize the biomass generated at its production site in Kalundborg to produce biogas. Ørsted and Bigadan will construct a new biogas plant, which is expected to be operational in 2018. After being processed at the biogas plant, the biomass will continue to be used as fertilizer on fields. This agreement exemplifies Novozymes' commitment to the circular economy. The plant is expected to process approximately 300,000 tons of biomass to generate 8 million m<sup>3</sup> of biogas annually. The inclusion of biogas in the local natural gas network is expected to result in annual CO<sub>2</sub> savings of around 17,000 tons.

## § ACCOUNTING POLICIES

Biomass is measured or calculated on the basis of volume or weight produced and transported from Novozymes as liquid fertilizer (NovoGro®), converted to a fertilizer product with a higher dry matter content (NovoGro® 30 or compost) or dried and used as fuel for energy production. Biomass from a newly built plant is sent for landfill with energy production (biogas) as a temporary disposal method.

Waste is the registered volume of waste broken down into hazardous and nonhazardous waste, and by disposal method. The amount recycled is the quantity recycled internally or sent to an external service provider for recycling. Biomass is not included in the reported amounts of waste.

### Biomass

1,000 tons	2017	2016
NovoGro®	399	375
NovoGro® 30	171	152
Compost	19	13
Landfill	13	10
<b>Biomass, total</b>	<b>602</b>	<b>550</b>

## Environmental data

# 7.4 Waste (continued)

Nonhazardous solid waste and hazardous waste account for 2% of the total waste and by-products generated and include materials such as paper, food waste, laboratory waste and chemicals. In 2017, the total solid waste sent for landfill or for incineration without

energy recovery was 8,199 tons. The rate of recycling of solid waste was 43% in 2017, compared with 44% in 2016.

Novozymes strives to increase the amount of solid waste diverted from landfill. In

2017, we initiated a pilot project to identify opportunities to increase waste diversion across three of our largest production sites, in Denmark, the US and China. Going forward, we will use the learnings from this pilot to improve waste management practices globally.

### Waste

1,000 tons	2017	2016
<b>Nonhazardous waste</b>		
Incineration	1.7	1.9
Landfill	3.9	4.1
Recycling (external)	4.3	4.3
Recycling (internal)	0.1	0.1
<b>Nonhazardous waste, total</b>	<b>10.0</b>	<b>10.4</b>
<b>Hazardous waste</b>		
Incineration	2.5	1.4
Recycling (external)	0.2	0.2
Recycling (internal)	1.6	1.4
Other	-	0.1
<b>Hazardous waste, total</b>	<b>4.3</b>	<b>3.1</b>
<b>Waste, total</b>	<b>14.3</b>	<b>13.5</b>

## 7.5 Environmental compliance, etc.

Novozymes aims to comply with all environmental regulations and strives to minimize the number of complaints from its neighbors.

In 2017, 24 breaches of regulatory limits were registered worldwide, compared with 37 in 2016. The majority of these relate to wastewater treatment and effluent discharge limits.

Action plans have been agreed on with the relevant environmental authorities to address all pending issues.

We received 12 complaints from neighbors, up from nine complaints in 2016. These were related to air pollution and waste management.



### ACCOUNTING POLICIES

Breaches of environmental regulatory limits is measured as the number of incidents in the reporting year considered not to be in conformity with environmental permits or requirements under environmental law.

Breaches related to annual control

measurements of spills reported in previous years are not included, as they are not indicative of performance during the reporting year.

Neighbor complaints refers to the number of registered environmental complaints, primarily odor and noise related.

## 7.6 Bioethics & biodiversity

Our business is based on bioinnovation. This includes the process of taking samples of fungi, bacteria and enzymes among the available biodiversity in nature for biotechnological research to develop specific applications for our customers. That is why “bioethics & biodiversity” is a material issue for Novozymes’ operations and its relationships with external stakeholders.

Novozymes’ position paper on industrial biotechnology articulates its management approach to supporting safe and sustainable use, and the adoption of robust, science-based regulations for processes and products involving gene technology. We acknowledge the need for engaging with stakeholders to improve the general level of knowledge about the opportunities presented by biology, industrial biotechnology and gene technology, and their role in society.

The position paper on biodiversity articulates how Novozymes endorses, acknowledges and respects the globally recognized principles on the utilization of genetic resources according to the United Nations Convention on Biological Diversity (CBD) and the complementary Nagoya Protocol on Access and Benefits Sharing (ABS). Novozymes has internal procedures to ensure that the company lives up to its commitments.

We acknowledge the importance of biodiversity and healthy ecosystems in ensuring sustainable development and achievement of the UN Sustainable Development Goals (SDGs). Business & Biodiversity is a new focus area that emphasizes private sector engagement and responsibility toward biodiversity-related issues. Going forward, Novozymes will assess and monitor outcomes in this new area and undertake a broader strategic discussion regarding its management and reporting of biodiversity issues.

## 7.7 Product stewardship

Product stewardship is material to Novozymes, as our biological solutions are used as industrial processing aids or ingredients in consumer goods. Our enzyme products and microorganisms are formulated with other ingredients (e.g. as encapsulated granulates) so that they are safe when used and are stable in terms of shelf life.

Novozymes' approach to product stewardship is to mitigate the risk of potential harm to both human health and the environment during the manufacture, handling and use of its products.

Novozymes ensures this by the implementation of its Quality and Product Safety Policy, which is an essential component of Novozymes' Quality Management System. This is supplemented by our approach to and position on related topics such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals), product information and labeling, traceability and animal testing.

Documented processes for product stewardship are enforced globally and externally audited by Bureau Veritas.

Many cross-functional teams contribute to the implementation of this approach, but the primary responsibility rests with the Vice President for Intellectual Property, Regulatory and Product Safety.

In 2017, Novozymes continued its preparations and is on track to meet the 2018 registration deadline to ensure that technical enzymes sold in lower volumes are in compliance with REACH.

Novozymes also continued to promote adherence to enzyme safety standards throughout the industry value chains, to reduce the risk of enzyme allergies among employees and downstream users. Novozymes chairs the Enzyme Safety Working Group, which has a coordinating role within the Association of Manufacturers and Formulators of Enzyme Products (AMFEP) to promote advanced safety procedures related to the use of enzyme products through trade associations.



# Social and governance data

We measure our social performance using a number of indicators in the areas of labor practices & human rights, occupational health & safety, business ethics, customer engagement and community engagement. These indicators enable us to track our progress and respond to risks and opportunities related to both talent attraction and retention, and business development.



Women in senior management

**26%**

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Accidents per million working hours

**1.6**

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Completion of business integrity training for employees

**99%**

## 8.1 Labor practices & human rights

Employee skills are essential for Novozymes' growth and are important to the successful execution of its strategies. It is therefore important for Novozymes to focus on employee development and diversity in all its operations. Novozymes is responsible for ensuring that human rights are respected throughout its value chain.

We follow a common management and reporting structure for labor practices and human rights. Read our position paper on human rights on Novozymes.com to find out more about the mechanisms that are implemented to ensure a respectful and motivating working environment.

### Labor practices

Our People and Organization (P&O) function is responsible for ensuring equal rights for all employees and promoting diversity. Novozymes is committed to the principles of equal employment opportunities, ensuring fair and equitable treatment for everyone. Novozymes does not discriminate in its practices or employment opportunities based on an individual's race, religion, sex or age.

Novozyymes' commitment to ensuring equal opportunities and avoiding discrimination in the workplace extends to all global operations.

In the coming years, we want to increase the number of women in senior management; we have a target to ensure that women hold at least 30% of director positions or higher by 2020. At the end of 2017, 26% of senior management were women, meaning that we met our target for the year of at least 25%. Read our position paper on diversity and equal opportunities for more details.

At Novozymes, we are committed to providing a work environment where all individuals can work together comfortably and productively, free of all forms of harassment and discrimination. Furthermore, Novozymes recognizes and respects the right to form and join associations and to bargain collectively. Our P&O function works to facilitate the fulfillment of these fundamental rights in countries with limited labor legislation.

The rate of employee turnover increased from 10.4% to 11.9%, mainly due to layoffs in January 2017. The rate of absence has been broken down into grouped job categories, based on whether the work carried out is primarily office based, and is therefore not stated for each job category. In 2017, we observed a 2.1% rate of absence, which is above our 2017 target of 2.0%.

### Employee statistics

		2017	2016
Rate of employee turnover – retirement	%	0.8	0.8
Rate of employee turnover – dismissal	%	4.9	2.6
Rate of employee turnover – voluntary	%	6.2	7.0
<b>Rate of employee turnover, total</b>	%	<b>11.9</b>	<b>10.4</b>
<b>Rate of absence</b>			
Senior management, management, professional and administrative	%	1.3	1.4
Skilled workers, laboratory technicians, other technicians and process operators	%	2.9	2.8
All employees	ESG %	2.1	2.0
<b>Other employee statistics</b>			
Average age	Years	41.5	41.2
Average seniority	Years	9.6	9.4
Number of expatriates	No.	23	37
Average spent per employee	DKK	3,159	3,353
Costs as percentage of total employee costs	%	0.5	0.6

## 8.1 Labor practices & human rights (continued)

### Employee development

In 2017, Science Magazine ranked Novozymes the second-best global employer for a third consecutive year. Our employees are motivated by our purpose of finding biological solutions to global challenges.

For many years, we conducted the People's Opinion survey to identify areas that need continuous attention and further improvements. However, in 2017, we found that it was important to evaluate the effectiveness of the surveys conducted in the past to understand the improvement areas and track the organizational mood at Novozymes. Therefore, we changed the methodology and conducted quarterly "Pulse" surveys instead. These covered a subset of questions from the People's Opinion survey and were distributed to different employee groups. The results were then shared with vice presidents and executive vice presidents to facilitate discussions about key areas.

In 2018, we plan to conduct a comprehensive survey with a wide range of questions on various themes related to work, such as satisfaction and motivation, work conditions and development opportunities.

### Human rights

We have observed a noticeable rise in investor and customer scrutiny of how companies respect, protect and remedy human rights in their operations and supply chains. Novozymes revamped its human rights-monitoring approach in 2016 and plans to conduct human rights impact assessments once every two years. The next assessment is due in 2018.

In 2017, we updated our position paper on human and labor rights to provide clear guidance on our processes and procedures. Together with external experts, we also conducted workshops to train relevant stakeholders across the organization and improve their understanding of human rights.

### § ACCOUNTING POLICIES

Absence is stated as time lost due to the employee's illness, including pregnancy-related sick leave, and occupational accidents and diseases. The rate of absence is calculated as the number of registered days of absence as a percentage of the total number of normal working days in one year, less vacation and public holidays.

The rate of employee turnover is calculated as employee turnover divided by the average number of permanent employees. Employee turnover is measured as the number of permanent employees who left the Group during the last four quarters (excluding employees at divested entities transferred to the acquiring company).

Average age and seniority are calculated as the sum of employees' total age/seniority in whole years at the reporting date, divided by the number of employees.

Expatriation refers to Novozymes employees temporarily reassigned within Novozymes from the country of original employment for a period that extends beyond six months.

Training costs is the costs of external training courses and seminars, translated into Danish kroner at average exchange rates. Training costs is also shown as a percentage of total employee costs.

Women in senior management measures the percentage of women in director positions or higher (i.e. senior director, vice president or executive vice president).

## 8.2 Occupational health & safety

Novozymes drives and promotes a strong safety culture within the organization, and views health and safety of employees as a significant part of its business strategy. The aim of the strategy is to ensure that robust safety processes, hardware, standards, tools and training are fully integrated into our way of working. Furthermore, we ensure a focus on Occupational Health and Safety (OH&S) throughout the organization through initiatives driven locally, as part of a global framework.

In 2017, we experienced a decrease in the frequency of occupational accidents to 1.6 lost-time injuries per million working hours, which met our target of 2.0 or below for 2017. After analyzing our 2016 performance, we found that almost half of the accidents were caused by trips and falls. We therefore launched various awareness campaigns such as “Stop and Text,” “Stepping in and out of trucks” and “Mind your steps” to minimize slips, trips and falls.

We have implemented proactive health surveillance programs across the organization to identify and alleviate adverse health reactions from handling enzymes and/or microbes, before they potentially become serious. We also launched a new internal OH&S Key Performance Indicator (KPI) called “Health and Safety focus” in 2017 to provide ongoing measurement of our health and safety culture globally. Data on the health and well-being of employees were collected on a quarterly basis as part of the “Pulse” survey, and we saw promising results in 2017.

### Consequences of occupational accidents

No.		2017	2016
Return to original job		17	23
Return to a different job in the same department		-	1
Out of work or early retirement		-	1
Case pending		1	-
<b>Occupational accidents with absence, total</b>	<b>ESG</b>	<b>18</b>	<b>25</b>
Total days of absence related to accidents registered in the same year		235	309
Injury severity rate		13	12

### § ACCOUNTING POLICIES

Occupational accidents is defined as the reported number of occurrences arising out of or in the course of work that result in fatal or nonfatal injury with at least one day's absence from work apart from the day of injury.

Occupational diseases is defined as the number of diseases contracted as a result of exposure to risk factors arising from work activity and notified as work related in accordance with local legislation.

The consequences of occupational accidents with absence and occupational diseases are measured by recording the work situation once the outcome of the incidents has stabilized, for example whether the employees have returned to their original jobs, and the total number of calendar days of absence.

Frequencies of occupational accidents with absence and occupational diseases are stated per million working hours.

The injury severity rate is calculated by dividing total days of absence related to accidents registered in the same year by the number of occupational accidents.

## 8.2 Occupational health & safety (continued)

### Consequences of occupational diseases

No.		2017	2016
Return to original job		2	2
Return to a different job in the same department		-	3
Transfer to a different job outside Novozymes		-	1
Out of work or early retirement		-	2
<b>Occupational diseases, total</b>	ESG	<b>2</b>	<b>8</b>
Total days of absence related to diseases registered in the same year		-	7

### Types of occupational diseases

No.		2017	2016
Musculoskeletal disorder		-	1
Skin disease		2	4
Enzyme allergy		-	2
Respiratory disease		-	1
<b>Occupational diseases, total</b>	ESG	<b>2</b>	<b>8</b>

As a consequence, we implemented sweeping and comprehensive changes within Occupational Health and Safety in Denmark to ensure greater managerial focus and more extensive employee involvement. This resulted in even closer collaboration to create a safer working environment. We believe that this change will help employees internalize safety behavior.

Health initiatives are implemented across regions and are designed to fit local needs. The regions develop and conduct activities to promote health among employees.

At Novozymes, we believe in extending our OH&S responsibilities beyond Novozymes'

boundary. Therefore, we conduct safety training for contract workers to ensure that they understand their rights and responsibilities.

To meet our long-term target of an occupational accident frequency of 1.0 accident per million working hours or below, it is imperative to improve year on year. Our analysis shows that a significant share of occupational accidents are related to culture and behavior. To address these issues, we plan to focus on behavioral safety in 2018 along with our ongoing focus to reduce trips and falls. We also plan to roll out user-friendly tools globally to equip employees with relevant competencies in these areas.



## 8.3 Business ethics

Business ethics is a key issue for Novozymes. We are committed to conducting business in an ethical, responsible and transparent way. In addition to our own ambition, our investors, customers and employees also expect us to demonstrate a high standard of integrity in our business practices.

We are committed to working against all forms of corruption. Novozymes has adopted six business integrity principles, which include zero tolerance for bribery and facilitation payments, and rules on gifts and hospitality. The principles form the ground rules for engaging with third parties and apply to all employees anywhere in the world. See our position paper on business integrity on [Novozymes.com](http://Novozymes.com) for more details.

Novozymes' management approach to addressing anti-corruption and business integrity aspects is embedded in its corporate values and policies. A dedicated compliance function handles reporting of business integrity-related matters, develops employee training programs and offers guidance

requested by employees on a case-by-case basis. Questions related to business integrity were included in our quarterly "Pulse" survey, to help us identify areas for improvement.

All employees have access to guidance and may anonymously raise concerns about business ethics and corruption, including possible breaches of our integrity principles, through a variety of grievance channels. See more about our reporting channels on [Novozymes.com](http://Novozymes.com).

For Novozymes, engaging with the right partners is a central aspect of being a sustainable business. We have a responsibility to ensure that the business partners and stakeholder associations that represent us are equally committed to engaging responsibly with policymakers and preventing corruption and bribery. In 2017, third-party due diligence and compliance processes to monitor Novozymes' commercial partners were expanded.

### § ACCOUNTING POLICIES

Completion of business integrity training refers to the percentage of selected employees who have undergone business integrity training in the last training period. New entities are included within six months of acquisition. Business integrity training is conducted for employees who can potentially influence third-party interactions or decisions as part of their job role. This comprises employees in professional, managerial or administrative positions.

The reporting criteria for competition law violations are whether it has been established by an authority member of the International Competition Network or by a competent court anywhere in the world that

a company in the Novozymes Group has violated applicable anti-trust regulations.

All allegations of fraud are investigated until it can be determined whether they can be substantiated. The number of fraud cases represents substantiated and unsubstantiated matters reported to the Audit Committee in the reporting year.

Novozymes defines fraud as an offence where an employee or third party either:

- takes or removes the company's property without its consent with the intent of depriving the company of it, or
- intentionally deceives the company by providing false documentation or by suppressing the truth in order to obtain a personal gain.

## Social and governance data

# 8.3 Business ethics (continued)

### Business integrity training for employees

Novozymes conducts annual training to ensure that employees are well equipped to uphold the six business integrity principles and to handle ethical dilemmas that they may encounter in their everyday work. The global e-learning program has been designed and rolled out by Novozymes' Chief Legal Compliance Officer based on input from regions, line of business and questions raised during the year to ensure relevance and applicability.

This annual training reinforces business integrity understanding and secures written acknowledgement from our employees that they will comply with the six principles. It also includes practical examples, mimicking real cases in Novozymes or from the media noted during the year. The training in 2017 focused on facilitation payments and helping employees identify corruption risks related to working with agents or third-party representatives.

In 2017, Novozymes achieved a completion rate of 99%, staying on par with 2016.

### Competition law and anti-trust

There were no violations of competition law in 2017.

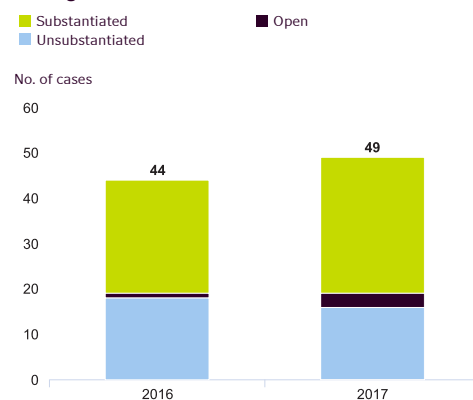
Since 2014, Novozymes' employees with commercial contact have participated in

recurring anti-trust e-learning. This training has a global reach and provides general guidance on anti-trust law. In 2017, the training again focused on anti-cartel guidance, specifically how to interact with competitors in a proper manner.

### Fraud cases

Novozymes works proactively to prevent, detect and respond to fraud, and has continuously increased its internal awareness and proactive initiatives in relation to fraud.

#### Investigated fraud cases

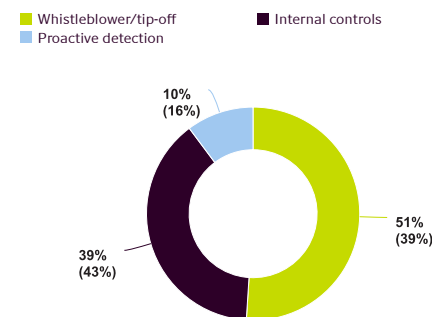


In 2017, the number of fraud cases investigated by Novozymes increased by five. We continue to see an increased threat from external fraud attempts by unknown perpetrators, such as business e-mails containing scams such as invoice fraud and

CxO fraud (i.e. e-mails from senders claiming to be senior executives attempting to convince employees to transfer company funds under the pretext of a legitimate business purpose). The investigated fraud cases in 2017 did not have a material financial impact on Novozymes.

Moving forward, we will continue to raise awareness of fraud and train employees on relevant policies and procedures.

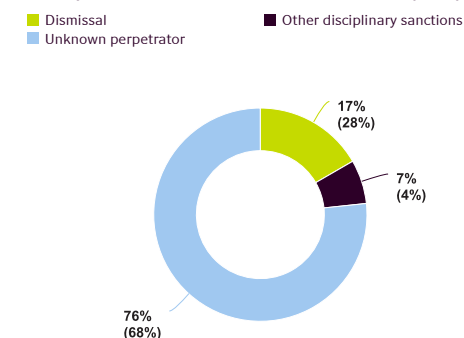
#### Reporting channels 2017 (2016)



As part of the internal control system, all identified fraud cases and concerns raised, either through Novozymes' Whistleblower System or other reporting channels, are reported to the Audit Committee on a quarterly basis.

All allegations of fraud are appropriately investigated and concluded in accordance with internal policies and procedures. Substantiated fraud will lead to proportionate disciplinary sanctions for the parties involved. Reporting to the police is assessed on a case-by-case basis. During 2017, 21 cases were reported to the police.

#### Consequences of substantiated fraud cases 2017 (2016)



## 8.4 Community engagement

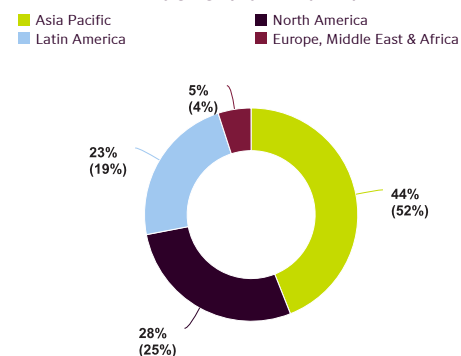
We believe that businesses have a responsibility to engage with the communities in which they operate and invest strategically in programs that create value for society. We focus our community engagement and social investment activities on education, specifically biology, sustainability and the environment. This is because education and an understanding of science are crucial for global sustainable development, and many Novozymes employees are experts in the fields of biology and sustainability.

Novozymes has implemented various educational programs across regions to meet its long-term target of educating 1 million people about the potential of biology.

In 2017, we engaged more than 188,000 learners, with the US and India being major contributors. Both these countries contributed more than 50,000 learners. In the US, each site determines its own outreach activities, while in India, the focus is on educating underprivileged students.

Read more about Educate in the Targets section and in the Sustainability section.

Learners reached by geography 2017 (2016)



### CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Methodologies to count and consolidate learners reached have been defined and are applied, but the reported numbers are still subject to assumptions and estimates, for example when recording the number of participants at a conference, which means that the result of the calculation will be an approximation.



### ACCOUNTING POLICIES

Learners reached comprises the total number of persons Novozymes reaches via its Educate activities. An Educate activity is an activity that engages the learner to a degree sufficient to confirm that awareness has been created.

## 8.5 Customer engagement

Partnerships and customer engagement are material topics for Novozymes. This is because our customers' opinions serve as powerful indicators of how our products and services are performing in the market.

To monitor customer satisfaction and collect feedback on a regular basis, Novozymes sets an annual target for Customer Satisfaction Measurement. See Outlook for 2018 for an overview of all targets.

Novozyymes' Commercial Development function ensures that customer satisfaction is measured annually and that the feedback is collected, analyzed and addressed in the relevant functional areas. Commercial Development also ensures that our account managers

get the necessary support to meet current customer demands as well as to engage with potential new customers.

Novozyymes conducts an annual survey that includes a measurement of the Net Promoter Score (NPS). The NPS is based on customers' answers to a single question: "How likely are you to recommend Novozymes to others?" and ranges from -100 to +100. The response rate of Novozymes' direct customers invited to participate in the survey was approximately 67%.

In 2017, Novozymes achieved an NPS of +39 and met its target to maintain the score above +35. Although this is a decrease from an NPS of +45 in 2016, it is still considered

high. The result shows that Novozymes' employees are well regarded and that our customers appreciate our commercial and technical services. Account managers play an important role in customer satisfaction. Our customers prefer account managers who are proactive and engaged, understand the clients' business and needs, and share critical information in a timely and effective manner. We will incorporate these findings into our engagement strategies for all customers.

Going forward, we will be adjusting our survey methodology so that all customer scores are weighed equally in the aggregated NPS. This ensures that we remain equally responsive to the needs of our smaller customers.



### ACCOUNTING POLICIES

The Net Promoter Score (NPS) is derived from an annual questionnaire measuring how likely the customer is to recommend Novozymes to others. The NPS is calculated as the share of promoters (on a scale of 0-100) less the share of detractors (also on a scale of 0-100). The resulting score is a number between -100 and +100.

## 8.6 Responsible sourcing

A secure supply of raw materials is crucial to our production. Novozymes' supplier management and responsible sourcing approach are the responsibility of the Sourcing department. Read our position paper on responsible purchasing on Novozymes.com for more details.

Agricultural raw materials are a major constituent of our production processes, which is the reason for our continuous, sharp focus on environmental, social and governance (ESG) issues. All our suppliers of directly sourced agricultural raw materials are required to meet our deforestation requirements in terms of not contributing to further deforestation and zero tolerance for land grabbing.

Novozymes assesses all suppliers based on supplier risk profile, spend, type of product and country risk. High-risk suppliers are assessed by the Sourcing teams through the Supplier Performance Management (SPM) system. This consists of an integrated set of assessment criteria covering commercial, quality, environmental and social requirements. Based on these criteria, SPM helps to identify risks and opportunities in our supply chain by highlighting high-risk suppliers and suppliers with strong overall performance.

To sharpen the focus on ESG compliance, we have started monitoring our suppliers' adherence to our Responsible Purchasing standard on a monthly basis.

In 2017, we identified a need to increase our level of transparency across the supply chain. Furthermore, we also experienced increasing regulatory and customer requirements for raw material and supplier transparency throughout the supply chain. Therefore, we are investigating various tools available in the market to assess our supplier base on multiple supply risk levels.



# Statement of the Board of Directors and Executive Leadership Team

The Board of Directors and the Executive Leadership Team have today considered and adopted the Annual Report of Novozymes A/S for the financial year January 1 – December 31, 2017. The Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act, and the Parent Company Financial Statements have been prepared in accordance with the Danish Financial Statements Act. Management's Review has been prepared in accordance with the Danish Financial Statements Act.

Bagsværd, February 7, 2018

In our opinion, the accounting policies used are appropriate, and the Group's internal controls relevant to preparation and presentation of the Annual Report are adequate. The Consolidated Financial Statements and the Parent Company Financial Statements give a true and fair view of the financial position at December 31, 2017 of the Group and the Parent Company and of the results of the Group and Parent Company operations and consolidated cash flows for the financial year January 1 – December 31, 2017.

In our opinion, Management's Review includes a true and fair account of the development in the operations and financial circumstances

of the Group and the Parent Company, of the results for the year, and of the financial position of the Group and the Parent Company as well as a description of the most significant risks and elements of uncertainty facing the Group and the Parent Company.

In our opinion, Novozymes A/S adheres to the AA1000 AccountAbility principles, and environmental, social and governance data are stated in accordance with the accounting policies.

We recommend that the Annual Report be adopted at the Annual Shareholders' Meeting.

## Executive Leadership Team

**Peder Holk Nielsen**  
President & CEO

**Thomas Videbæk**

**Prisca Havranek-Kosicek**

## Board of Directors

**Jørgen Buhl Rasmussen**  
Chairman

**Kim Stratton**

**Lena Bech Holskov**

**Agnete Raaschou-Nielsen**  
Vice Chairman

**Lars Green**

**Anders Hentze Knudsen**

**Kasim Kutay**

**Mathias Uhlén**

**Lars Bo Køppler**

# Independent Auditor's Report

## To the Shareholders of Novozymes A/S

### **Our opinion**

In our opinion, the Consolidated Financial Statements give a true and fair view of the Group's financial position at December 31, 2017 and of the results of the Group's operations and cash flows for the financial year January 1 to December 31, 2017 in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act.

Moreover, in our opinion, the Parent Company Financial Statements give a true and fair view of the Parent Company's financial position at December 31, 2017 and of the results of the Parent Company's operations for the financial year January 1 to December 31, 2017 in accordance with the Danish Financial Statements Act.

In our opinion, the Consolidated environmental data and the Consolidated social and governance data for the financial year January 1 to December 31, 2017 are prepared in accordance with the accounting policies for the Consolidated environmental data and the Consolidated social and governance data.

Our opinions are consistent with our Auditor's Long-form Report to the Audit Committee and the Board of Directors.

### *What we have audited*

The Consolidated Financial Statements of Novozymes A/S for the financial year January 1 to December 31, 2017 comprise the consolidated income statement and statement of comprehensive income, the consolidated balance sheet, the consolidated statement of shareholders' equity, the consolidated statement of cash flow and the notes, including summary of significant accounting policies.

The Parent Company Financial Statements of Novozymes A/S for the financial year January 1 to December 31, 2017 comprise the income statement, the balance sheet, the statement of changes in equity and the notes, including summary of significant accounting policies.

Collectively referred to as the "Financial Statements".

The Consolidated environmental data and Consolidated social and governance data of Novozymes A/S for the financial year January 1 to December 31, 2017 comprise the environmental performance and consolidated data, the social and governance performance and consolidated data and the related notes, including summary of significant accounting policies.

These are collectively referred to as the "Environmental, Social and Governance Data."

### **Basis for opinion**

We conducted our audit in accordance with International Standards on Auditing (ISAs) and the additional requirements applicable in Denmark. Our responsibilities under those standards and requirements are further described in the Auditor's responsibilities for the audit of the Financial Statements section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### *Independence*

We are independent of the Group in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) and the additional requirements applicable in Denmark. We have also fulfilled our other ethical responsibilities in accordance with the IESBA Code.

To the best of our knowledge and belief, prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No 537/2014 were not provided.

### *Appointment*

We were appointed as auditors of Novozymes A/S for the first time after the initial public offering on March 21, 2001. We have been reappointed annually by shareholder resolution for a total period of uninterrupted engagement of 17 years, including the financial year 2017.

## Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the Financial Statements for 2017.

These matters were addressed in the context of our audit of the Financial Statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter

How our audit addressed the key audit matter

### Revenue recognition related to partnerships and collaboration agreements

Novozymes has entered into several partnerships and collaboration agreements.

Some of these partnerships and collaborations include complex mechanisms for sharing profit and expenses. Due to the complexity of the agreements, there are several uncertainties in relation to the interpretation of the agreements.

We focused on this area because the agreements and the related accounting treatment of revenue recognition is complex and because establishing appropriate accruals requires significant judgement and estimation by Management.

Refer to Note 2.2 to the Consolidated Financial Statement.

We tested relevant controls including applicable information systems and Management's review controls implemented, to ensure that revenue and costs from the partnerships and collaboration agreements are recognized appropriately on an ongoing basis.

We obtained Management's calculation for deferred income and profit-sharing accruals under the applicable agreements, and reconciled inputs and key assumptions – for both internal and external sources – and assessed the accuracy of the accruals in previous periods.

We assessed whether the disclosures in relation to revenue were appropriate and met the requirements of accounting standards.

## Statement on Management's Review

Management is responsible for Management's Review, pages 3 - 64.

Our opinion on the Financial Statements does not cover Management's Review, and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read Management's Review and, in doing so, consider whether Management's Review is materially inconsistent with the Financial Statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

Moreover, we considered whether Management's Review includes the disclosures required by the Danish Financial Statements Act.

Based on the work we have performed, in our view, Management's Review is in accordance with the Consolidated Financial Statements and the Parent Company Financial Statements, and the Consolidated environmental data, and the Consolidated social and governance data, has been prepared in accordance with the requirements of the Danish Financial Statements Act. We did not identify any material misstatement in Management's Review.

## Management's Responsibility for the Financial Statements and the Environmental, Social and Governance Data

Management is responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards as adopted by the EU and further requirements in the Danish Financial Statements Act and for the preparation of parent company financial statements that give a true and fair view in accordance with the Danish Financial Statements Act, and for such internal control as Management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Furthermore, Management is responsible for preparing the Consolidated environmental data and the Consolidated social and governance data in accordance with the accounting policies stated in the Environmental, Social and Governance Data, and for such internal control as Management determines is necessary to enable the preparation of Environmental, Social and Governance Data that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, Management is responsible for assessing the Group's and the Parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless Management either intends to liquidate the Group or the Parent Company or to cease operations, or has no realistic alternative but to do so.

#### **Auditor's Responsibilities for the Audit of the Financial Statements and the Environmental, Social and Governance Data**

Our objectives are to obtain reasonable assurance about whether the Financial Statements and the Environmental, Social and Governance Data as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and the additional requirements applicable in Denmark will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements and the Environmental, Social and Governance Data. As part of an audit in accordance with ISAs and the additional requirements applicable in Denmark, we exercise professional judgement and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Parent Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management.
- Conclude on the appropriateness of Management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Parent Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Financial Statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group or the Parent Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the Financial Statements, including the disclosures, and whether the Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the Consolidated Financial Statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

*Hellerup, February 7, 2018*

#### **PricewaterhouseCoopers**

Statsautoriseret Revisionspartnerselskab  
CVR no.: 33771231

**Mogens Nørgaard Mogensen**  
State Authorized Public Accountant  
mne21404

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the Financial Statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

**Rasmus Friis Jørgensen**  
State Authorized Public Accountant  
mne28705

# Independent assurance statement on Novozymes' 2017 sustainability reporting and adherence to the AA1000 AccountAbility Principles

## To the Stakeholders of Novozymes

We have been engaged by Novozymes A/S' Management to provide moderate assurance (review) as to whether Novozymes adheres to the AA1000 AccountAbility Principles.

## Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the description of Novozymes' adherence to the AA1000 AccountAbility principles of Inclusivity, Materiality and Responsiveness is not fairly stated.

This conclusion is to be read in the context of what we say in the remainder of our report.

Regarding the audit of the Consolidated environmental data and Consolidated social and governance data, we refer to the Independent Auditor's Report.

## Management's responsibility

Adherence to the AA1000 AccountAbility Principles of Inclusivity, Materiality and Responsiveness is the responsibility of Management.

## Our responsibility

We are responsible for planning and performing the engagement to obtain moderate assurance (review) of Novozymes' adherence with the AA1000 AccountAbility principles of Inclusivity, Materiality and Responsiveness; forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and reporting our conclusion to the stakeholders of Novozymes A/S.

Our team of experts has competencies with regard to assessing sustainability management systems. In 2017, we have not performed any tasks or services for Novozymes or other clients, which would have conflicted with our independence, nor have we been responsible for the preparation of any part of the Annual Report. Thus, we are independent as defined in the AA1000 Assurance Standard (AA1000AS (2008)) and we consider our team qualified to carry out this independent assurance engagement.

## Scope, standards and criteria used

We have planned and performed our work based on AA1000AS (2008), using the criteria in the standard to perform a Type 1 engagement.

We have worked to obtain a moderate assurance (review) as to Novozymes' adherence to the AA1000 AccountAbility Principles.

## Methodology, approach, limitation and scope of work

Our methodology has included procedures to obtain evidence of Management's commitment to the AA1000 AccountAbility Principles and of the implementation of systems and procedures in support of the principles.

Based on an assessment of materiality and risk, our work has included:

1. Review of processes related to how Novozymes identifies its stakeholders and engages them in relevant business decisions to develop and implement responses to sustainability;
2. Review of the process that Novozymes used to identify and determine relevant

and significant (material) issues to the organization and its stakeholders and whether these issues are included in the sustainability reporting; and

3. Enquiries and interviews with the chairman of the Board of Directors, members of the Executive Leadership Team and employees responsible for key areas of Novozymes' operations regarding Novozymes' commitment and adherence to the AA1000 AccountAbility Principles, and the existence of systems and procedures to support adaptation of the principles in the organisation. Our work focused on Novozymes' sustainability ambition and strategy and its organisational capacity to deliver on this. Moreover, our work focused on Novozymes' readiness to align business priorities with, and leverage, the UN Global Goals, for its business development.



**Observations and recommendations**

According to AA1000AS (2008), we are required to include observations and recommendations for improvements in relation to Novozymes' adherence to the AA1000 AccountAbility Principles.

**Regarding Inclusivity**

Novozymes has maintained its commitment to and focus on sustainability as a core business issue at both Board and Executive level throughout the year. External engagement by senior management on sustainability has continued, in particular on the UN Global Goals, and sustainability continues to be a focus for development of new business projects and partnerships.

Novozymes' revised sustainability plan, developed in 2017, includes actions to further embed consideration of sustainability issues into internal operational activities. We have noted that further work is ongoing to increase internal engagement on sustainability, particularly within core business functions.

**Regarding materiality**

Novozymes continues to actively evaluate and manage current and likely future sustainability issues and their impact on the business, and delivery of the targets are factored into senior management's objectives and remuneration.

We have noted that advanced application of technology and data and analytics is playing an increasing role in Novozymes' operations and will also be important in influencing delivery of sustainability objectives.

**Regarding Responsiveness**

Novozymes management has maintained commitment and active involvement in understanding and responding to external stakeholder priorities. We have noted that the review of Novozymes' sustainability plan involved active input from the Board and the Executive Leadership Team. This has resulted in a revised plan to evolve sustainability activities, particularly focused on embedding sustainability further into internal operational activities in the short term.

We have communicated a number of minor recommendations for improvement to the management of Novozymes.

*Hellerup, February 7, 2018*

**PricewaterhouseCoopers**

Statsautoriseret Revisionspartnerselskab  
CVR no.: 33771231

**Mogens Nørgaard Mogensen**

State Authorized Public Accountant  
mne21404

**Rasmus Friis Jørgensen**

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# Financial statements for Novozymes A/S

## Financial statements

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Balance sheet

Statement of shareholders' equity

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# Income statement, Novozymes A/S

DKK million	Note	2017	2016
Revenue	2.1	8,273	7,648
Cost of goods sold	2.2	(4,062)	(3,637)
<b>Gross profit</b>		<b>4,211</b>	<b>4,011</b>
Sales and distribution costs	2.2	(960)	(998)
Research and development costs	2.2	(1,433)	(1,451)
Administrative costs	2.2	(556)	(574)
Other operating income	2.3	1,516	1,600
<b>Operating profit / EBIT</b>		<b>2,778</b>	<b>2,588</b>
Income from investments in subsidiaries	3.3	963	969
Share of result in associates	3.3	(11)	(31)
Financial income	4.1	79	96
Financial costs	4.1	(191)	(62)
<b>Profit before tax</b>		<b>3,618</b>	<b>3,560</b>
Tax		(597)	(589)
<b>Net profit</b>		<b>3,021</b>	<b>2,971</b>
<b>Proposed appropriation of net profit</b>			
Dividend to shareholders		1,266	1,142
Revaluation reserve according to the equity method		952	938
Retained earnings		803	891
		3,021	2,971
Proposed dividend per share		DKK 4.50	DKK 4.00

# Balance sheet, Novozymes A/S

## Assets

DKK million	Note	Dec. 31, 2017	Dec. 31, 2016
<b>Intangible assets</b>	3.1	<b>1,709</b>	<b>1,056</b>
<b>Property, plant and equipment</b>	3.2	<b>3,798</b>	<b>3,320</b>
Investments in subsidiaries	3.3	7,321	7,924
Investments in associates	3.3	49	60
Other long-term receivables	3.4	2	4
Other financial assets		10	130
Receivables from Group enterprises	3.3	1,411	1,458
<b>Financial fixed assets</b>		<b>8,793</b>	<b>9,576</b>
<b>Fixed assets</b>		<b>14,300</b>	<b>13,952</b>
Raw materials and consumables		134	149
Work in progress		486	382
Finished goods		830	787
<b>Inventories</b>		<b>1,450</b>	<b>1,318</b>
Trade receivables		900	941
Receivables from Group enterprises		1,222	510
Tax receivables		25	92
Other receivables	3.4	90	117
<b>Receivables</b>		<b>2,237</b>	<b>1,660</b>
<b>Cash at bank and in hand</b>		<b>130</b>	<b>429</b>
<b>Current assets</b>		<b>3,817</b>	<b>3,407</b>
<b>Assets</b>		<b>18,117</b>	<b>17,359</b>

## Liabilities and shareholders' equity

DKK million	Note	Dec. 31, 2017	Dec. 31, 2016
Common stock	5.6	610	620
Treasury stock		(4,698)	(4,355)
Revaluation reserve according to the equity method		92	1,073
Reserve for development costs		151	136
Retained earnings		13,250	12,534
Proposed dividend		1,216	1,142
<b>Shareholders' equity</b>		<b>10,621</b>	<b>11,150</b>
Deferred tax	3.5	235	367
Other provisions		8	29
<b>Provisions</b>		<b>243</b>	<b>396</b>
Credit institutions	4.2	1,312	1,727
<b>Non-current liabilities</b>		<b>1,312</b>	<b>1,727</b>
Credit institutions		968	119
Trade payables		670	546
Payables to Group enterprises		3,474	2,684
Other payables		829	737
<b>Current liabilities</b>		<b>5,941</b>	<b>4,086</b>
<b>Liabilities</b>		<b>7,496</b>	<b>6,209</b>
<b>Liabilities and shareholders' equity</b>		<b>18,117</b>	<b>17,359</b>

# Statement of shareholders' equity, Novozymes A/S

DKK million	Common stock	Treasury stock	Revaluation reserve according to the equity method	Reserve for development costs	Retained earnings	Proposed dividend	Total
<b>Shareholders' equity at January 1, 2017</b>	<b>620</b>	<b>(4,355)</b>	<b>1,787</b>	<b>136</b>	<b>12,534</b>	<b>1,142</b>	<b>11,864</b>
Adjustment to opening balance			(714)				(714)
<b>Restated shareholders' equity at January 1, 2017</b>	<b>620</b>	<b>(4,355)</b>	<b>1,073</b>	<b>136</b>	<b>12,534</b>	<b>1,142</b>	<b>11,150</b>
Net profit for the year			952		2,069		3,021
Capitalized development costs				15	(15)		-
Dividend received			(1,159)		1,159		-
Dividend paid						(1,239)	(1,239)
Dividend paid relating to treasury stock						47	47
Proposed dividend, gross					(1,318)	1,318	-
Proposed dividend relating to treasury stock					52	(52)	-
Purchase of treasury stock		(2,000)					(2,000)
Sale of treasury stock		179					179
Write-down of common stock	(10)	1,478			(1,468)		-
Currency translation adjustments of investments in subsidiaries, etc.			(769)		(163)		(932)
Value adjustment of derivatives			-		86		86
Other adjustments			(5)		314		309
<b>Shareholders' equity at December 31, 2017</b>	<b>610</b>	<b>(4,698)</b>	<b>92</b>	<b>151</b>	<b>13,250</b>	<b>1,216</b>	<b>10,621</b>



# 1 Accounting policies

The financial statements of Novozymes A/S have been prepared in accordance with the Danish Financial Statements Act (accounting class D). The accounting policies are unchanged from last year.

The accounting policies are the same as for the consolidated financial statements with the adjustments described below. For a description of the Group's accounting policies, please refer to the consolidated financial statements.

In 2017, an error in the elimination has been identified in the 2016 financial statements, which resulted in the Income from investments in subsidiaries being overstated by DKK 714 million. The error, which has been corrected, did not impact the consolidated statements of income, balance sheet or cash flow.

## Recognition and measurement in general

Income is recognized in the income statement as it is earned. Value adjustments of financial assets and liabilities measured at fair value or amortized cost are also recognized in the income statement.

All costs incurred in generating the year's revenue are also recognized in the income statement, including depreciation, amortization and impairment losses.

Assets are recognized in the balance sheet when it is considered probable that future economic benefits will flow to the company and the value of the asset can be measured on a reliable basis. Liabilities are recognized in the balance sheet when they are considered probable and can be measured on a reliable basis. When first recognized, assets and liabilities are measured at cost. Thereafter assets and liabilities are measured as described below for each item.

The recognition and measurement principles take due account of predictable losses and risks occurring prior to the presentation of financial statements that confirm or refute the conditions prevailing on the reporting date.

## Intangible assets

The accounting policies for intangible fixed assets follow those of the Group with the exception of goodwill, which is amortized over a period of 10-15 years. Goodwill amortized over more than 10 years is based on an individual assessment of the useful lifetime. An amount equal to the total capitalized development costs after tax is recognized under Shareholders' equity in the Reserve for development costs.

## Financial assets

Investments in subsidiaries and investments in associates are recognized initially at cost including transaction costs and measured subsequently using the equity method. The company's share of the equity of subsidiaries, based on the fair value of the identifiable net assets on the acquisition date, minus or plus unrealized intercompany profits or losses, with addition of any residual value of goodwill, is recognized under Investments in subsidiaries and Investments in associates respectively in the balance sheet. If the shareholders' equity of subsidiaries or associates is negative and Novozymes A/S has a legal or constructive obligation to cover the company's negative equity, a provision is recognized.

Net revaluation of investments in subsidiaries and associates is recognized under Shareholders' equity in the Revaluation reserve according to the equity method. The reserve is reduced by payments of dividends to the parent company and adjusted to reflect other changes in the equity of subsidiaries.

The proportionate share of the net profits of subsidiaries less goodwill amortization is recognized under Income from investments in subsidiaries in the income statement. Goodwill is amortized over a period of 10-15 years using the straight-line method.

## Dividend

The dividend proposed for the financial year is shown as a separate item under Shareholders' equity.

## NOTE SECTION 2

### 2.1 Revenue

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Geographical distribution:		
Denmark	205	196
Rest of Europe, Middle East & Africa	4,939	4,660
North America	1,265	1,080
Asia Pacific	1,427	1,370
Latin America	437	342
<b>Revenue</b>	<b>8,273</b>	<b>7,648</b>

### 2.2 Employee costs

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Wages and salaries	1,593	1,639
Pensions - defined contribution plans	175	173
Other social security costs	21	25
Other employee costs	170	187
<b>Employee costs</b>	<b>1,959</b>	<b>2,024</b>
Average number of employees in Novozymes A/S	2,613	2,660

### 2.3 Other operating income

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Royalty income relating to subsidiaries	1,490	1,560
Other	26	40
<b>Other operating income</b>	<b>1,516</b>	<b>1,600</b>

## NOTE SECTION 3

# 3.1 Intangible assets

DKK million	2017				2016	
	Goodwill	Acquired patents, licenses and know-how, etc.	Completed IT development projects	IT development projects in progress	Total	Total
Cost at January 1	388	1,339	410	49	2,186	1,842
Additions during the year	509	262	10	82	863	364
Disposals during the year	-	(43)	(7)	-	(50)	(20)
Transfers to/(from) other items	-	-	70	(70)	-	-
<b>Cost at December 31</b>	<b>897</b>	<b>1,558</b>	<b>483</b>	<b>61</b>	<b>2,999</b>	<b>2,186</b>
Amortization and impairment losses at January 1	(93)	(752)	(285)	-	(1,130)	(1,007)
Amortization for the year	(31)	(80)	(72)	-	(183)	(143)
Impairment losses	-	(27)	-	-	(27)	-
Disposals during the year	-	43	7	-	50	20
<b>Amortization and impairment losses at December 31</b>	<b>(124)</b>	<b>(816)</b>	<b>(350)</b>	<b>-</b>	<b>(1,290)</b>	<b>(1,130)</b>
<b>Carrying amount at December 31</b>	<b>773</b>	<b>742</b>	<b>133</b>	<b>61</b>	<b>1,709</b>	<b>1,056</b>

### Impairment

In 2017, an impairment loss of DKK 27 million on abandoned patents was recognized and included in Cost of goods sold and Research

and development costs with DKK 15 million and DKK 12 million respectively (2016: no impairment losses on intangible assets).

## NOTE SECTION 3

# 3.2 Property, plant and equipment

	2017				2016	
DKK million	Land and buildings	Production equipment and machinery	Other equipment	Property, plant and equipment under construction	Total	Total
Cost at January 1	2,474	4,428	862	508	8,272	7,604
Additions during the year	14	87	39	634	774	672
Disposals during the year	-	(18)	(27)	-	(45)	(4)
Transfers to/(from) other items	2	84	14	(100)	-	-
<b>Cost at December 31</b>	<b>2,490</b>	<b>4,581</b>	<b>888</b>	<b>1,042</b>	<b>9,001</b>	<b>8,272</b>
Depreciation and impairment losses at January 1	(1,217)	(3,098)	(637)	-	(4,952)	(4,720)
Depreciation for the year	(91)	(152)	(51)	-	(294)	(234)
Disposals during the year	-	17	26	-	43	2
<b>Depreciation and impairment losses at December 31</b>	<b>(1,308)</b>	<b>(3,233)</b>	<b>(662)</b>	<b>-</b>	<b>(5,203)</b>	<b>(4,952)</b>
<b>Carrying amount at December 31</b>	<b>1,182</b>	<b>1,348</b>	<b>226</b>	<b>1,042</b>	<b>3,798</b>	<b>3,320</b>

### Capitalized interest

Interest of DKK 6 million (2016: DKK 4 million) has been capitalized under Additions during the year above and under Investing activities in the statement of cash flows. Capitalization rate: 1.62% (2016: 1.78%).

Land and buildings with a carrying amount of DKK 377 million (2016: DKK 397 million) have been pledged as security to credit institutions. The mortgage loan expires in 2029.

## NOTE SECTION 3

# 3.3 Financial fixed assets

DKK million	Investments in subsidiaries	Investments in associates	Receivables from Group companies	Total
Cost at January 1, 2017	6,783	128	1,458	8,369
Additions during the year	367	-	127	494
Disposals during the year	-	-	(174)	(174)
<b>Cost at December 31, 2017</b>	<b>7,150</b>	<b>128</b>	<b>1,411</b>	<b>8,689</b>
Revaluation reserve at January 1, 2017	1,855	(68)		1,787
Adjustment to opening balance	(714)			(714)
<b>Restated revaluation reserve at January 1, 2017</b>	<b>1,141</b>	<b>(68)</b>		<b>1,073</b>
Share of net profit/(loss)	1,719	(11)		1,708
Elimination of profit on internal asset transfers	(756)	-		(756)
Dividends received	(1,159)	-		(1,159)
Currency translation adjustment	(769)	-		(769)
Other adjustments	(5)	-		(5)
<b>Revaluation reserve at December 31, 2017</b>	<b>171</b>	<b>(79)</b>		<b>92</b>
<b>Carrying amount at December 31, 2017</b>	<b>7,321</b>	<b>49</b>	<b>1,411</b>	<b>8,781</b>

Reference is made to Note 6.8 to the consolidated financial statements concerning investments in subsidiaries.

Reference is made to Note 3.4 to the consolidated financial statements concerning joint operations and associates.



## NOTE SECTION 3

### 3.4 Other receivables

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Prepaid expenses	40	63
Derivatives	16	5
Other receivables	36	53
<b>Other receivables at December 31</b>	<b>92</b>	<b>121</b>
Recognized in the balance sheet as follows:		
Non-current	B/S 2	4
Current	B/S 90	117
<b>Other receivables at December 31</b>	<b>92</b>	<b>121</b>

### 3.5 Deferred tax

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Deferred tax at January 1	367	207
Adjustment for previous years	(24)	21
Tax related to the income statement	(9)	57
Tax on shareholders' equity items	(99)	82
<b>Deferred tax at December 31</b>	<b>235</b>	<b>367</b>

## NOTE SECTION 4

### 4.1 Financial income and costs

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Interest income relating to subsidiaries	67	69
Interest costs relating to subsidiaries	(12)	(11)

In 2017, the financial asset related to the partnership with Beta Renewables S.p.A. has been fully written down. This relates to a guarantee provided by M&G, because 2G projects have not commercialized as

expected in Beta Renewables S.p.A. The write-down is a consequence of M&G experiencing financial difficulties. The write-down of DKK 120 million is included in Financial costs.

### 4.2 Credit institutions

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Long-term debt to credit institutions falling due after 5 years	428	527

### 4.3 Proposed appropriation of net profit

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
<b>Proposed appropriation of net profit</b>		
Dividend to shareholders	1,266	1,142
Revaluation reserve according to the equity method	952	938
Retained earnings	803	891
<b>Net profit</b>	<b>3,021</b>	<b>2,971</b>

## NOTE SECTION 5

# 5.1 Contingent liabilities and pending litigation

Rental and leasing commitments related to noncancelable operating lease contracts expire within the following periods from the reporting date:

<b>DKK million</b>	<b>2017</b>	<b>2016</b>
Recognized in the income statement in respect of rentals	56	61
Rental commitments expiring within the following periods from the reporting date:		
Less than 1 year	59	47
Between 1 and 2 years	19	34
Between 2 and 3 years	13	16
Between 3 and 4 years	5	8
Between 4 and 5 years	4	3
More than 5 years	7	9
<b>Contingent liabilities at December 31</b>	<b>107</b>	<b>117</b>
<b>Other contingent liabilities</b>		
Contractual obligations to third parties relating to property, plant and equipment	544	833
Other guarantees and commitments to related companies	2,140	2,203
Other guarantees and commitments to third parties	97	58

### Pending litigation and arbitration

Reference is made to Note 6.3 to the consolidated financial statements concerning pending cases.

## NOTE SECTION 5

# 5.2 Related party transactions

### Transactions

DKK million	2017	2016
<b>The Novo Nordisk Group</b>		
Sales	162	149
Purchases	(131)	(152)
<b>The NNIT Group</b>		
Purchases	(34)	(41)
<b>The Chr. Hansen Group</b>		
Sales	33	22

### Outstanding balances

DKK million	2017	2016
<b>The Novo Nordisk Group</b>		
Receivables	13	23
Payables	(66)	(73)
<b>The NNIT Group</b>		
Payables	(4)	(9)
<b>The Chr. Group</b>		
Receivables	4	3

Reference is made to Note 6.4 to the consolidated financial statements concerning other transactions with related parties.

# 5.3 Fees to statutory auditor

DKK million	2017	2016
Statutory audit	4	4
Other assurance engagements	-	-
Tax advisory services	2	2
Other services	1	-
<b>Fees to statutory auditor</b>	<b>7</b>	<b>6</b>

Reference is made to Note 6.5 to the consolidated financial statements concerning fees to statutory auditor.

## NOTE SECTION 5

### 5.4 Statement of cash flows

Reference is made to the Consolidated statement of cash flows.

### 5.5 Segment information

Reference is made to Note 2.1 to the consolidated financial statements concerning segment information.

### 5.6 Common stock and treasury stock

Reference is made to Note 5.5 to the consolidated financial statements concerning common stock and treasury stock.

### 5.7 Derivatives

Reference is made to Note 5.4 to the consolidated financial statements concerning derivatives as figures and information in Novozymes A/S are identical.



# Glossary

## **Acre**

A common measure of land area; in the US and UK, one acre equals 4,840 square yards, which is 4,047 square meters.

## **Advance pricing agreement (APA)**

Agreement with the tax authorities in one or more countries on the split of taxable income between countries.

## **Amortization**

Accounting term that refers to the process of allocating the cost of an intangible asset over a period.

## **Asia Pacific**

Australia, Bangladesh, Cambodia, Hong Kong, India, Indonesia, Iran, Japan, Kazakhstan, Kyrgyzstan, Laos, Malaysia, Myanmar, Nepal, New Zealand, P.R. China, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, Turkmenistan, Uzbekistan, Vietnam.

## **Audit fee ratio**

Nonaudit services divided by total fees to statutory auditor.

## **Biodiversity**

The variety of all living things: the different plants, animals and microorganisms, the genetic information they contain, and the ecosystems they form.

## **Bioenergy**

Comes in the form of liquid fuels, electricity, heat and steam, and is produced from primary crops or biomass such as sugarcane, grains, agricultural residues, algae and household waste. In liquid form, it is typically used to

replace gasoline and diesel in transportation.

## **Biofuel**

Liquid fuels produced from primary crops or biomass such as sugarcane, grains, agricultural residues, algae and household waste. They are typically used to replace gasoline and diesel in transportation. One of the advantages of biofuels is that they are the only existing liquid alternative to fossil fuels.

## **BioFuture Platform**

A 20-country effort to promote an advanced low-carbon bioeconomy that is sustainable, innovative and scalable.

## **Biomass**

Organic material, predominantly plants or plant residues.

## **Biomass conversion**

A biological method for turning agricultural residues and waste into high-quality fuels, electricity or renewable chemicals.

## **Bushel**

A unit of measure for fruits and grains equivalent to 8 US gallons or about 35 liters. A bushel of corn (shelled) weighs approx. 25.4 kilos.

## **Cash flow**

The difference between the available cash at the beginning and end of an accounting period.

## **Cellulosic ethanol**

Biofuel made from cellulosic materials, which include agricultural residues such as corn cobs, stover and straw; forestry waste such as

sawdust, trimmings and chips; and municipal solid waste.

## **Developed markets**

Markets that have a highly developed economy and advanced technology infrastructure relative to less industrialized markets. North America, Central Western Europe, Australia, New Zealand, Japan and South Korea. Rest of the world is considered as emerging markets.

## **Earnings per share (diluted)**

Net profit (attributable to shareholders in Novozymes A/S) divided by the weighted average number of shares outstanding (diluted).

## **EBIT**

Earnings before interest and tax. See operating profit.

## **EBIT margin**

Earnings before interest and tax as a percentage of revenue.

## **EBITDA**

Earnings before interest, tax, depreciation and amortization.

## **EBITDA margin**

Earnings before interest, tax, depreciation and amortization as a percentage of revenue.

## **Economic profit**

Adjusted operating profit (NOPAT) less (average invested capital x WACC)

## **Effective tax rate**

Income tax expense as a percentage of profit

before tax.

## **Efficiency improvement**

Improvement in water and energy efficiency (and reduction of CO<sub>2</sub> intensity) is measured by the reduction in an index that comprises resource use (or CO<sub>2</sub> emissions) divided by gross profit, compared with the same index for 2014 efficiency levels. Consequently, these indices measure Novozymes' ability to create value while reducing its environmental footprint.

## **EMEA**

Europe, the Middle East and Africa.

## **Emerging markets**

Markets that are progressing toward becoming more advanced, usually by means of rapid growth and industrialization.

## **Enzymes**

Proteins that act as catalysts, helping to convert one substance into another.

## **Equity ratio**

Total shareholders' equity as a percentage of balance sheet total at year-end.

## **Free cash flow**

Cash flow from operating activities minus cash flow from investing activities and changes in net working capital.

## **Global Reporting Initiative (GRI)**

An international, multistakeholder body working on a standardized framework for reporting environmental, social and economic information. See [www.globalreporting.org](http://www.globalreporting.org).

**Gross profit**

A company's total revenue (equivalent to total sales) minus the cost of goods sold.

**Inoculant**

Inoculants are beneficial microorganisms that promote plant health.

**Learners reached**

A learner is a person who has been engaged in a Novozymes Educate activity, for example a workshop or an educational activity that requires active participation from the learner.

**Life cycle assessment (LCA)**

An environmental assessment tool that addresses environmental impacts from all processes in the production of products, from raw material extraction through production and product use to final disposal.

**Materiality**

The materiality assessment process identifies key topics that pose both risks and opportunities for Novozymes' business strategy. It is based on a systematic analysis of internal and external stakeholder perspectives. Material topics merit inclusion in our report, as they reflect our economic, environmental and social impacts or because they might influence stakeholder decisions.

**Microbes**

Microscopic, living, single-celled organisms such as bacteria and fungi.

**Microbial**

Relating to or caused by microorganisms.

**Microorganisms**

Microscopic, living, single-celled organisms such as bacteria and fungi.

**Net interest-bearing debt**

The market value of interest-bearing liabilities (financial liabilities) less the market value of cash at bank and in hand and other easily convertible interest-bearing current assets.

**Net interest-bearing debt-to-EBITDA**

Net interest-bearing debt divided by EBITDA.

**Net working capital**

All current assets less current liabilities used in, or necessary for, the company's operations. The main components are inventories, trade receivables and trade payables.

**Operating profit (EBIT)**

The profitability of the business, before taking into account interest and taxes. To determine operating profit, operating expenses are subtracted from gross profit.

**Organic sales growth**

Sales growth from existing business, excluding sales from businesses acquired in the reporting period, measured in local currency.

**Product stewardship**

The practice of designing and managing products to minimize adverse environmental, health and safety impacts across the product life cycle.

**Renewable energy**

The proportion of the energy used at Novozymes' sites that consists of continuously replenished energy generated from natural processes. Sources include solar, wind and hydro power-based electricity and energy from biogas.

**Return on equity (ROE) ratio**

A profitability ratio that measures a

company's ability to generate profits from its shareholders' investments in the company.

**Return on invested capital (ROIC)**

Adjusted operating profit (NOPAT) after tax as a percentage of average invested capital. EBIT is adjusted for net foreign exchange gains/losses and share of result in associates.

**Revenue**

The amount of money a company earns through the sale of goods and services.

**Starch**

Long chains of sugar molecules. Starch is the main component of cereal grains such as corn, wheat and rice.

**Starch processing**

The conversion of starches from plant sources such as corn into glucose.

**Sustainable Development Goals (SDGs)**

The UN Sustainable Development Goals (SDGs) are an intergovernmental set of 17 aspirational goals with 169 targets. The goals were officially implemented on September 25, 2015, at the United Nations Headquarters in New York, US.

**Sustainability Yearbook**

Prepared by RobecoSAM, the Sustainability Yearbook represents the top 15% of companies in terms of sustainability performance from each industry. Yearbook Members are also classified into three categories – Gold, Silver and Bronze Medal Class.

**Talent utilization**

% of identified talents who have either been promoted or experienced lateral moves within the last 12 months.

**Trehalose**

A type of sugar that cannot easily be fermented to ethanol as opposed to glucose, which is easily fermentable.

**UN Global Compact**

An international UN initiative with the intention of bringing companies together with UN agencies, labor and civil society to support ten principles in the areas of human rights, labor standards, the environment and anticorruption. See [www.unglobalcompact.org](http://www.unglobalcompact.org).

**WACC**

Weighted average cost of capital.

**Wet milling**

A process of milling (as of corn) involving preliminary soaking in water or other liquid.

**Ørsted**

Dong Energy changed its name to Ørsted as of November 6, 2016, after the Danish scientist H.C. Ørsted.

# About the report

**At Novozymes, our reporting ambition is to provide one integrated report that connects the company's business model, strategy, targets and performance through integrated financial and sustainability data.**

A full online version of The Novozymes Report 2017, featuring interactive graphics, is available at [report2017.novozymes.com](http://report2017.novozymes.com).

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## Reporting and audits

The website contains The Novozymes Report 2017 – which, pursuant to section 149 of the Danish Financial Statements Act, is an extract of the company's annual report – and the financial statements of the parent company Novozymes A/S. Together, these form the company's annual report that is filed with the Danish Business Authority.

PwC has audited the consolidated financial statements, the parent company financial statements, and the environmental and social data.

PwC has also been the sustainability assurance provider, basing its assurance on the AA1000 Assurance Standard (2008).

The audit covers financial, environmental and social data. These are marked "Audited by PwC." See also the statements in the report.

PwC has not audited the sections of the report found under the headings The big picture, Our business, Governance and Sustainability. The Sustainability section includes our Communication on Progress with respect to the UN Global Compact principles, our report index based on the Global Reporting Initiative (GRI), as well as detailed sustainability data from our main activities in Argentina, Brazil, Canada, China, Denmark, India, the UK and the US.

The report has been prepared in accordance with International Financial Reporting Standards (IFRS), the Danish Financial Statements Act and the additional requirements of Nasdaq Copenhagen A/S for the presentation of financial statements by listed companies. It has also been inspired by the GRI's G4 Sustainability Reporting Guidelines. See Basis of reporting in the report for more details.

## Forward-looking statements

This annual report contains forward-looking statements, including statements about future events, future financial performance, plans, strategies and expectations. Forward-looking statements are associated with words such as, but not limited to, "believe," "anticipate," "expect," "estimate," "intend," "plan," "project," "could," "may," "might" and other words of similar meaning.

Forward-looking statements are by their very nature associated with risks and uncertainties that may cause actual results to differ materially from expectations, both positively and negatively. The risks and uncertainties may, among other things, include unexpected developments in i) the ability to develop and market new products; ii) the demand for Novozymes' products, market-driven price decreases, industry consolidation, and launches of competing products or disruptive technologies in Novozymes' core areas; iii) the ability to protect and enforce the company's intellectual property rights; iv) significant litigation or breaches of contract; v) the materialization of the company's growth platforms, notably the opportunity for marketing biomass conversion technologies or the development of microbial solutions for broad-acre crops; vi) political conditions, such as acceptance of enzymes produced by genetically modified organisms; vii) global economic and capital market conditions, including, but not limited to, currency exchange rates (USD/DKK and EUR/DKK in particular, but not exclusively), interest rates and inflation; viii) significant price decreases for inputs and materials that compete with Novozymes' biological solutions. The company undertakes no duty to update any forward-looking statements as a result of future developments or new information.



# Sustainability





# Sustainability

## **Commitment**

CEO statement of continued commitment  
Governance and transparency  
Materiality and value chain assessment  
Stakeholder engagement

## **Taking action**

Progress on the Ten Principles  
Core contributions to UN goals  
Strategic social investment

## **Engagement**

Advocacy and policy engagement  
Partnerships and collective action  
Issue-based and sector initiatives  
Region-specific engagement

## **GRI Content Index 2017**

## **Non-financial site data**



# Biology for a better world

**Novozymes believes that solving global challenges can unlock new market value. In 2017, we made good progress against our long-term sustainability targets and decided to explore new and improved ways of guiding and measuring our environmental impact in the future.**



2017 highlighted why companies can no longer afford to ignore sustainability. In the face of devastating storms, choking pollution, distressing human rights abuses, rising inequality and stagnating economic growth, the call to action has never been more urgent. And yet growing polarization in our societies makes it more difficult for leaders to agree and uphold the global consensus on climate change and sustainable development. This volatility could significantly impair business growth.

At the same time, opportunities for companies to develop solutions to these global challenges have never been more varied, and the business case has never been more compelling. In its flagship Better Business Better World report, the Business and Sustainable Development Commission estimates that achieving the UN Sustainable Development Goals (SDGs) “could unlock up to 60 market ‘hot spots’ worth an estimated USD 12 trillion by 2030 in business savings and revenue.”

At Novozymes, we understand this. We were one of the pioneers in integrating the SDGs into our purpose and strategy. Our commitment to the UN Global Compact and its Ten Principles as well as to the 2030 Agenda for Sustainable Development has never been stronger.

## **Finding sustainable solutions together**

In September 2017 at the UN General Assembly in New York, I had the privilege of presenting Novozymes’ Partnering for Impact strategy to the Business and Sustainable Development Commission. I am happy to report that the Commission was impressed by our approach to creating a better world through innovation and partnerships, and is keen to see what we do next.

One of our key focus areas is related to water (SDG 6). Having access to clean water and sanitation is one of the most pressing challenges our society faces, and it is the key to unlocking progress in several other SDGs. Our solutions have the potential to make a real difference, especially in water treatment. Therefore, we introduced water as a new program in our innovation pipeline in 2017. To support our research, we are also working to establish strong partnerships. We launched the HelloScience open innovation platform, which aims to foster and deliver solutions related to the SDGs. UNICEF has joined our platform and issued a specific call for solutions to detect contamination in drinking water.

We will also continue to focus on the global challenge of mitigating climate change by ensuring access to clean and affordable energy

for a growing world (SDGs 7 and 13). In 2017, we worked closely with global and regional partners to support the decarbonization of the transportation sector and the deployment of low-carbon fuels. In Brazil, our work supported the adoption of RenovaBio, a groundbreaking new regulatory framework which sets targets for cutting carbon emissions for fuel distributors, in line with national commitments to the Paris Agreement.

## **Sustainable growth is a balancing act**

Novozymes’ growth comes from delivering biological solutions that provide our customers with significant resource efficiency benefits and typically have a net positive CO<sub>2</sub> impact. In 2017, we helped our customers avoid an estimated 76 million tons of CO<sub>2</sub> emissions through the application of our products.

To sustain our growth in the long term, we must also consider the environmental footprint of our operations. Novozymes is committed to decoupling business performance from its environmental impact. Our three long-term targets measure resource efficiency relative to gross profit. Due to a higher utilization rate than expected, we were unable to meet some of our targets in 2017. We now understand that this way of measuring progress is not optimal, as short term changes in gross profit,

caused by e.g. currency movements and product mix, distort the picture of the actual sustainability performance. Therefore, we have decided to cancel the three targets and explore better ways of measuring our performance in the future. Meanwhile, we will introduce new annual targets for water and energy consumption and CO<sub>2</sub> emissions.

## **Looking ahead**

With good momentum in the business and strong progress on our long-term targets, I am confident that we will continue to prioritize and promote the global sustainable development agenda. In 2018, we will work on refining our approach to sustainable innovation. I strongly believe that our future growth depends on our ability to deliver transformative innovations to support the SDGs, especially in emerging markets, and catalyze partnerships for wider and lasting impact. As we deepen our understanding of the global challenges we face, I am excited to harness the power of biology to create a better world.

A handwritten signature in black ink, appearing to read 'P. Holk Nielsen'.

Peder Holk Nielsen  
President & CEO



## Commitment

# Governance and transparency

**Sustainability is at the core of our business. We are committed to doing business in a responsible and transparent way.**

Novozymes' purpose, strategy and long-term targets integrate sustainability into the very core of its business. Sustainability is a key component of our business strategies and management processes. For a description of how we manage sustainability, please visit Sustainability governance on [Novozymes.com](http://Novozymes.com).

We also believe in sharing our sustainability performance in the most transparent and responsible way. Our sustainability leadership has been acknowledged by various indices and awards. We value such third-party recognition as this gives credibility to our efforts.

### **RobecoSAM Sustainability Yearbook**

Each year, Novozymes participates in RobecoSAM's Corporate Sustainability Assessment (CSA), a comprehensive survey which includes economic, environmental and social factors. The results determine which companies will be included in the Dow Jones Sustainability Index (DJSI) and the Sustainability Yearbook.

In 2017, our score dropped to 81, compared with 90 in 2016. This means that even though we remain a member of the Yearbook and the DJSI, we were unable to meet our annual

target of achieving a Medal Class rating. This decrease was due to our performance relative to our peers and the inclusion of new criteria in the CSA. We are committed to our long-term target of achieving a Gold Medal rating in 2020, and will continue to work toward improving our performance.

### **Recognition of UN-related disclosures**

In 2017, Novozymes was recognized for its exemplary reporting on its contributions to the UN Sustainable Development Goals by FSR – Danish Auditors and Her Royal Highness Crown Princess Mary of Denmark.

In addition, we engaged in a peer-review session of our UN Global Compact Communication on Progress with our peers from the UNGC Nordic Network: A.P. Møller - Mærsk, Novo Nordisk and Ørsted. The group shared best practices and challenges related to SDG reporting and provided valuable feedback on Novozymes' materiality disclosure and business model. Moving forward, Novozymes will continue to work with its peers to improve its reporting practices.

Read more about our sustainability disclosure and recognitions on [Novozymes.com](http://Novozymes.com).



# Materiality and value chain assessment

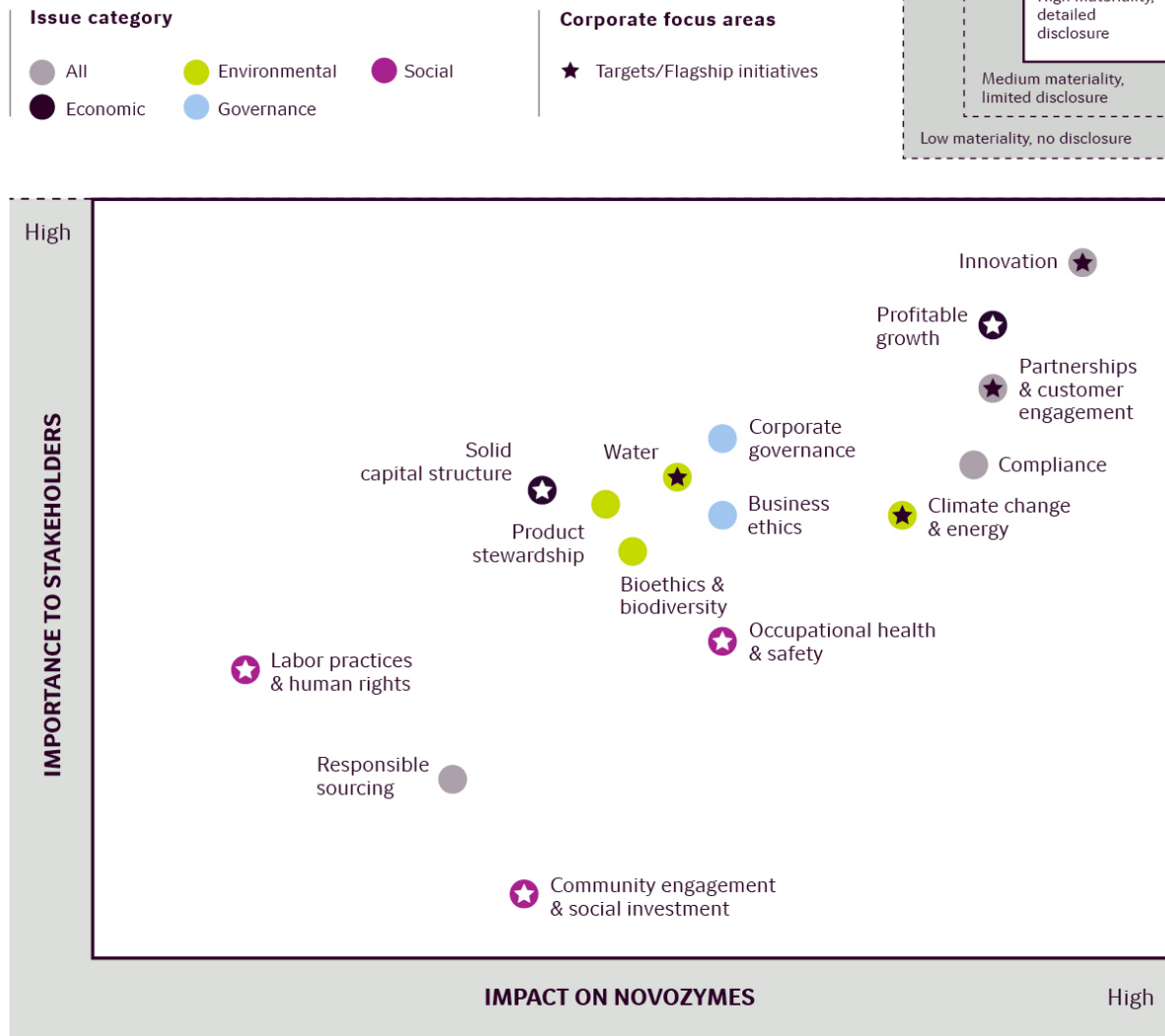
**Our integrated annual report is guided by materiality. Innovation, profitable growth and partnerships and customer engagement are the most material issues for Novozymes.**

Novozymes' annual report is based on the concept of materiality to ensure that the content is significant and relevant to readers.

Our materiality assessment is a systematic and rigorous process that compiles diverse inside-out and outside-in perspectives from external stakeholders, trend analyses and internal engagement with relevant departments. This process results in two outputs: 1) disclosures on key trends and 2) disclosures on material ESG issues.

The key trends are disclosed as a list, while the material themes are illustrated through a materiality matrix. The matrix highlights the 15 most material financial and nonfinancial themes and acts as a guide for determining the topics we include in our annual disclosure. The illustration is a snapshot of the upper-right quadrant of Novozymes's materiality matrix and only represents issues in the high material category. A full list of all material topics can be found in the following pages.

The materiality matrix includes some new issues and other changes compared with 2016. The new issues included as highly material are Solid capital structure and Community engagement & social investment. Two new issues were also added in the medium material category - Animal testing and Data security.





## Materiality in detail

We have consolidated a few issues from 2016, such as “Sales” and “Earnings” into “Profitable growth,” and “Partnerships” and “Customer relationship management” into “Partnerships & customer engagement.” In 2017, three issues became significantly more important than they were in 2016: “Occupational health & safety;” “Water” and “Labor practices & human rights.”

The cadence is as follows. Once every 2-3 years, we conduct a comprehensive assessment. This comprises a review of the assessment methodology, detailed desktop research, and active and extensive stakeholder engagement. In the intermediate period, we conduct an annual materiality refresh, which is based on evidence-based research and analysis of stakeholder opinion through proxy sources.

In 2017, Novozymes conducted a materiality refresh, building on its extensive assessment in 2016. This process comprised the following activities:

### Identification

In 2017, we revisited the UN SDGs, expert reports on global trends for 2017 (e.g. Global Risk Report by the World Economic Forum, State of Green Business by Greenbiz), investor and customer questionnaires, and peer analyses to identify global trends and ESG issues. Novozymes’ enterprise risk management (ERM) process provided significant internal insights.

### Prioritization

We engaged in dialogues with relevant internal stakeholders from Corporate Sustainability, Regional Sustainability representatives from Asia Pacific, Latin America and North America, Global Public Affairs and Risk Management to prioritize trends and ESG issues and understand how they evolved in 2017.

### Validation

We compared the top trends and ESG issues identified with priority themes highlighted by key ESG rating agencies and recalibrated our assessment together with internal stakeholders from Corporate Finance and Investor Relations.

### Disclosure









Novozyymes discloses the top five macro trends that shape and influence its business (see Business model) and the emerging risks posed by these risks (see Risk management). We also disclose our performance against key material issues (see Basis of reporting) in The Novozymes Report 2017. The primary audience for these assessments and disclosures is Novozymes’ investors, customers and employees.

Novozyymes will continue to review global macro trends and material issues on an ongoing basis to proactively understand emerging trends and developments.






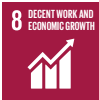
An explanation of all the changes made to the materiality matrix in 2017 can be found in the following pages.



## Materiality in detail



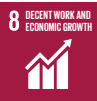

Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Innovation</b>	High	<p>Innovation refers to the process of developing novel products and optimizing processes to meet global challenges.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Novozymes: employees</li> <li>Downstream: customers, end consumers, governments, academia</li> </ul>	<ul style="list-style-type: none"> <li>Moved up the matrix to become the most material issue for Novozymes as innovation is the core of our business</li> </ul>	<ul style="list-style-type: none"> <li>Social and governance performance</li> <li>Product launches in 2017</li> <li>Note 2.4 Research and development costs</li> </ul>	     
<b>Profitable growth</b>	High	<p>Profitable growth refers to organic sales growth that increases the company's operating profit.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Novozymes: employees</li> </ul>	<ul style="list-style-type: none"> <li>Modified issue</li> <li>Two 2016 issues, "Sales" and "Earnings," were combined to reflect the specific aspect of financial performance that is most material for Novozymes</li> </ul>	<ul style="list-style-type: none"> <li>Novozymes in a nutshell</li> <li>2017 in brief</li> <li>Accounts and performance – Sales and earnings</li> <li>Consolidated statements of income</li> </ul>	
<b>Partnerships &amp; customer engagement</b>	High	<p>Partnerships &amp; customer engagement refers to Novozymes' focus on building partnerships with stakeholders from the private sector, governments, civil society, etc. for business growth and sustainable impact. It also includes specific processes to retain existing customers and engage new customers.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Novozymes: employees</li> <li>Downstream: governments, customers, NGOs, academia</li> </ul>	<ul style="list-style-type: none"> <li>Modified issue</li> <li>Two 2016 issues, "Customer relationship management" and "Partnerships," were combined to form this issue as together they are key to delivering impactful solutions</li> <li>Moved up the matrix because the issue is central to Novozymes' strategy</li> </ul>	<ul style="list-style-type: none"> <li>Targets: CATALYZE</li> <li>Strategy</li> <li>Business model</li> <li>Note 8.5 Customer engagement</li> </ul>	

## Materiality in detail

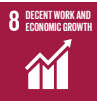



Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Compliance</b>	High	<p>Compliance refers to Novozymes' commitment to comply with relevant financial, governance, environmental and social regulations in all operating regions.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, governments</li> </ul>	<ul style="list-style-type: none"> <li>Moved down the matrix slightly, but this is largely due to the growing relative importance of other issues</li> </ul>	<ul style="list-style-type: none"> <li>Governance</li> <li>Consolidated statements of income</li> <li>Note 7.5 Environmental compliance, etc.</li> </ul>	
<b>Climate change &amp; energy</b>	High	<p>Climate change &amp; energy refers to Novozymes' commitment to climate action and its activities to address climate change risks and opportunities, reduce GHG emissions, invest in energy efficiency and support the production and uptake of renewable energy.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Novozymes: employees</li> <li>Downstream: customers, end consumers, governments, NGOs, academia</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>	<ul style="list-style-type: none"> <li>Note 7.1 Climate change</li> <li>Targets: SAVE</li> <li>Note 7.2 Energy</li> <li>Environmental performance and data</li> </ul>	 
<b>Business ethics</b>	High	<p>Business ethics refers to Novozymes' commitment to doing business in a responsible way, which is essential to attract and retain investors, employees and customers. It includes all measures to work against corruption, anticompetitive practices, fraud and unethical policy advocacy.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Novozymes: employees</li> <li>Downstream: governments, customers, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Modified issue</li> <li>The 2016 issue "Corporate governance &amp; ethics" was divided into two separate issues – "Business ethics" and "Corporate governance" – to reflect growing stakeholder interest in business ethics and transparency</li> </ul>	<ul style="list-style-type: none"> <li>Note 8.3 Business ethics</li> <li>Governance</li> </ul>	
<b>Corporate governance</b>	High	<p>Corporate governance describes the system of policies and processes that determine how Novozymes is directed and overseen by its Executive Leadership Team and Board of Directors.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Novozymes: employees</li> </ul>	<ul style="list-style-type: none"> <li>Modified issue</li> <li>The 2016 issue "Corporate governance &amp; ethics" was divided into two separate issues – "Business ethics" and "Corporate governance" – to reflect growing stakeholder interest in business ethics and transparency</li> <li>Moved up the matrix, because "Corporate governance" as a standalone topic is the most important ESG issue for investors</li> </ul>	<ul style="list-style-type: none"> <li>Note 8.3 Business ethics</li> <li>Governance</li> </ul>	 




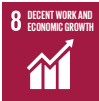


## Materiality in detail

Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Water</b>	High	<p>Water is a key natural resource for Novozymes and needs to be managed locally in all operating regions. Water scarcity has become a global challenge, and innovative activities are needed to optimize water consumption, reduce wastewater discharge and increase water recycling and reuse opportunities.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, end consumers, governments, NGOs, communities</li> </ul>	<ul style="list-style-type: none"> <li>Moved up the matrix to reflect the growing interest from the investor community in business risks and opportunities related to global water crises</li> </ul>	<ul style="list-style-type: none"> <li>Note 7.3 Water</li> <li>Environmental performance and data</li> </ul>	
<b>Product stewardship</b>	High	<p>Product stewardship is the practice of designing and managing products to minimize adverse environmental, health and safety impacts across the product life cycle.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, end consumers, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Renamed from the 2016 issue “Product stewardship and safety”</li> <li>Moved up the matrix due to growing scrutiny from investors and governments regarding hazardous chemicals management</li> </ul>	<ul style="list-style-type: none"> <li>Note 7.7 Product stewardship</li> </ul>	
<b>Solid capital structure</b>	High	<p>Solid capital structure refers to Novozymes’ ability to finance its overall operations and growth using different sources of funds.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> </ul>	<ul style="list-style-type: none"> <li>New issue</li> <li>Position reflects investor interest in assessing Novozymes’ financial fitness</li> </ul>	<ul style="list-style-type: none"> <li>Equity and shareholder return</li> </ul>	
<b>Bioethics &amp; biodiversity</b>	High	<p>Bioethics &amp; biodiversity describes how Novozymes supports the adoption of ethical, science-based regulation for processes and products involving gene technology. It also includes our responsibilities with regard to biodiversity rights, sharing benefits and engaging stakeholders on the role of bioinnovation for society.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, end consumers, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Modified issue</li> <li>Renamed from the 2016 issue “Bioethics &amp; gene technology” and moved up the matrix to reflect growing public interest in biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>Note 7.6 Bioethics &amp; biodiversity</li> </ul>	





## Materiality in detail

Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Occupational health &amp; safety</b>	High	Occupational health & safety describes all of Novozymes' policies and initiatives to ensure a safe, incident-free and healthy work environment.  Relevant stakeholders include: <ul style="list-style-type: none"> <li>Upstream: investors, suppliers, contractors</li> <li>Novozymes: employees</li> <li>Downstream: customers, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Moved up the matrix to reflect its increased impact on Novozymes' business</li> </ul>	<ul style="list-style-type: none"> <li>Note 8.2 Occupational health &amp; safety</li> </ul>	
<b>Community engagement &amp; social investment</b>	High	Community engagement & social investment refers to Novozymes' initiatives to engage with the communities in which it operates and invest in programs that create value for society.  Relevant stakeholders include: <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Novozymes: employees</li> <li>Downstream: communities, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Two 2016 issues, "CSR expectations" and "Local community engagement," were combined to reflect evolving stakeholder expectations</li> <li>Moved up the matrix to become a highly material issue because of its growing importance to Novozymes</li> </ul>	<ul style="list-style-type: none"> <li>Note 8.4 Community engagement</li> <li>Strategic social investment</li> </ul>	
<b>Responsible sourcing</b>	High	Responsible sourcing is the practice of considering social and environmental aspects, in addition to quality and economic aspects, when managing relationships with suppliers to promote sustainable supply chains.  Relevant stakeholders include: <ul style="list-style-type: none"> <li>Upstream: suppliers, investors</li> <li>Downstream: customers, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Moved up the matrix due to increased stakeholder interest, particularly from customers who want greater transparency in their supply chains</li> </ul>	<ul style="list-style-type: none"> <li>Note 8.6 Responsible sourcing</li> </ul>	 

## Materiality in detail

Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Labor practices &amp; human rights</b>	High	<p>Labor practices &amp; human rights refers to the system of policies and processes to promote equal rights, diversity and talent development for all employees, and to ensure decent working conditions and respect for human rights across the value chain.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers, contractors</li> <li>Novozymes: employees</li> <li>Downstream: NGOs, governments</li> </ul>	<ul style="list-style-type: none"> <li>Moved up the matrix due to increased scrutiny by governments and NGOs due to new regulations such as the UK Modern Slavery Act</li> </ul>	<ul style="list-style-type: none"> <li>Note 2.3 Employees</li> <li>Note 8.1 Labor practices &amp; human rights</li> </ul>	 
<b>Waste</b>	Medium	<p>Waste is the output from Novozymes' operations and requires responsible disposal to minimize adverse environmental impacts. This topic includes activities to reduce waste, dispose of it appropriately and optimize opportunities for recovery, recycling and reuse.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers, contractors</li> <li>Downstream: customers, end consumers, governments, NGOs, communities</li> </ul>	<ul style="list-style-type: none"> <li>Moved left of the matrix to medium materiality category due to relatively sharper focus on other environmental issues within Novozymes</li> <li>Remains important given increased interest in waste management and circular economy concepts, particularly in Europe and some emerging markets</li> </ul>	<ul style="list-style-type: none"> <li>Note 7.4 Waste</li> <li>Environmental performance and data</li> </ul>	
<b>Tax</b>	Medium	<p>Tax refers to the responsible and transparent global approach to corporate tax.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors</li> <li>Downstream: governments, communities</li> </ul>	<ul style="list-style-type: none"> <li>Renamed from the 2016 issue "Tax strategy" to simplify disclosure</li> </ul>	<ul style="list-style-type: none"> <li>Note 2.6 Tax</li> </ul>	

## Materiality in detail

Issue	Category	Description and value chain impact	Changes in 2017	Reference	Contributions to the SDGs
<b>Animal welfare</b>	Medium	<p>Animal welfare refers to the policies and practices in place to ensure the well-being and humane treatment of animals. It includes Novozymes' protocols regarding animal testing.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, end consumers, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>New issue</li> <li>Added to the medium materiality category to reflect stakeholder interest and Novozymes' exposure to this topic</li> </ul>	<ul style="list-style-type: none"> <li>Position paper on animal welfare on Novozymes.com</li> </ul>	 
<b>Deforestation &amp; land use</b>	Medium	<p>Deforestation &amp; land use change is a significant contributor to greenhouse gas emissions, and refers to the conversion of carbon-rich environments, such as forests and peatlands, to lower-carbon uses, such as agriculture.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: suppliers, investors</li> <li>Downstream: customers, governments, NGOs</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>	<ul style="list-style-type: none"> <li>Position paper on climate change on Novozymes.com</li> <li>Note 8.6 Responsible sourcing</li> </ul>	
<b>Data security</b>	Medium	<p>Data security refers to Novozymes' system of policies and digital protection measures to prevent unauthorized access to computers, databases, the website and intellectual property.</p> <p>Relevant stakeholders include:</p> <ul style="list-style-type: none"> <li>Upstream: investors, suppliers</li> <li>Downstream: customers, governments</li> </ul>	<ul style="list-style-type: none"> <li>New issue</li> <li>Positioning reflects the increased threat of cybercrime and its impact on Novozymes' business and intellectual property</li> </ul>	<ul style="list-style-type: none"> <li>Risk management</li> </ul>	

# Stakeholder engagement

Meeting stakeholder expectations is a priority for Novozymes. We spoke to some of our key partners to understand their needs.



## CUSTOMERS

### What matters most?

- Innovation
- Partnerships & customer engagement
- Labor practices & human rights
- Occupational health & safety
- Product stewardship

### Engagement approach

See Note 8.5 Customer engagement

### 2017 highlights

- Received Gold recognition from EcoVadis
- Conducted a “customer day” for Kao Corporation in Japan, featuring product demos and a supermarket concept for inspiration about how to attract consumers
- Rolled out a joint marketing campaign with Nopa Nordic and COOP in Denmark to educate consumers about the benefits of enzyme-based Ånglamark laundry detergents
- Hosted Enzyme School, an educational program for animal feed customers of the Novozymes–DSM alliance in Brazil, China and Denmark



## EMPLOYEES

### What matters most?

- Human & labor rights
- Occupational health & safety
- Innovation
- Community engagement & social investments
- Climate change & energy

### Engagement approach

See Note 8.1 Labor practices & human rights

### 2017 highlights

- Launched “SoLean” initiative in Supply Operations to develop competencies for executing Lean tools at all levels
- Rolled out the “Sales Academy” to strengthen our commercial capabilities and customer mindset
- Maintained a strong focus on human capital development, with 94% of employees having updated their individual development plans with specific targets

## In the spotlight

### Detergent concepts for emerging markets

In November 2017, Novozymes inaugurated its Detergent Design Center in Bangalore, India. This will serve as a platform for engaging customers on how our biological solutions can meet their needs in laundry detergents and soap bars.

The center features formulation, full wash, hand washing, stain development, consumer panel lab, and customer and consumer experience zones. Our experts at the center will develop formulation and concept prototypes or demos of detergent solutions catering to emerging market needs. These include consumer-specific performance targets based on themes such as water reduction, mildness to skin, cleanliness, fabric care and improved whiteness and stain removal in the mass market segment. Key themes will be identified through market research, consumer behavior studies, customer visits, dialogues and surveys.

“We’re moving toward a more holistic approach with customers, where we’re a concept and solution developer, and not perceived as a specialty ingredient provider,” says Jannie Michaela Rendtlew Danielsen, Novozymes’ Head of Household Care Technical Services. “Our conversations with customers won’t be about enzymes but about developing a complete detergent concept to meet real needs and help bring that concept to market.”

“By having everything under one roof – technical and marketing – we can invite our customers on the full journey – from market trends and what the consumer truly wants, to concept development. That ultimately helps us in making concept prototypes that resonate with the customer.”





# Going green with NICE in China

**In 2017, Novozymes helped one of its largest customers in China – the NICE Group – join a government program for green manufacturing. We spoke to Hu Zhengyu, Chief Engineer of the NICE Group, to learn more about how we support their sustainability journey.**

Sustainability has become a top priority for China's future development. In 2017, the Chinese Ministry of Industry and Information Technology launched a program to encourage green manufacturing. With Novozymes' expertise in life cycle assessment (LCA), we helped one of our customers – the NICE Group – join this program.

With blockbuster brands such as DIAO, NICE is one of China's largest detergent manufacturers. We spoke to Hu Zhengyu, Chief Engineer of the NICE Group, about sustainability trends in the Chinese detergent market.

## **How is the market for green household care products evolving in China?**

The Chinese detergent market is probably one of the biggest in the world. In the past, almost all products were derived from petroleum-based materials, but we are gradually seeing a change toward greener products. We can no longer sustain our old pattern where we develop the economy at the cost of the environment. The government has started a new green manufacturing program, which calls on all relevant industries to rethink their processes – from product design to packaging.

From a consumer standpoint, it is very straightforward and simple: Consumers link green and renewable with safety and personal health. As a result, more and more companies – not just end-product manufacturers, but also raw material suppliers – plan to supply more green products to the market.

## **Why is sustainability important to NICE?**

From a narrow perspective, we want to grow our business by meeting consumer needs. NICE has always been a pioneer in the market, and we do not want to lag behind in this green transition. From a wider perspective, we have a responsibility toward society and the environment. As we increase production, we must be wiser about our consumption of materials and energy. We cannot consume everything today and leave nothing for the generations after us. That is why we believe we need to act on sustainability, starting today.

## **How does Novozymes support your sustainability journey?**

In the past, NICE and Novozymes have collaborated in many areas, but we had not worked in depth on sustainability issues until now.

In 2017, NICE wanted to join the government's green manufacturing program. One of the requirements is that companies must demonstrate the green credentials of their existing and future products through LCAs. We knew the concept, but we had no experience of conducting a real LCA for a specific product.

Novozymes is a pioneer in this field, and so we reached out for help. It was more complex than we thought. We had several talks and shared a lot of basic product information. It was a tight timeline, but we met the application deadline and were selected for the program. This is just the first step. As we expand our product portfolio, we will need to do similar work for our new formulations.

## **What are your key sustainability challenges going forward?**

LCAs tell us how green our products are and where we can improve. Now, the focus for us, and indeed for the industry, is how to make our products greener. There are three key areas of improvement – raw materials, logistics and packaging. For example, today and for the foreseeable future, we will rely largely on truck transportation, as greener options such as rail or ship are limited in China.



One alternative to reduce the volume of truck transportation is to make our products more concentrated, meaning they will be lighter. But here, we encounter another challenge – public acceptance. In China today, consumers tend not to opt for concentrated products. We are working on communication and developing new product concepts with extra benefits to encourage consumers to buy concentrated products, such as more washes for the same cost. If we can encourage half the market to switch from conventional to concentrated detergents, we will save huge amounts of energy in terms of transportation and packaging. That will be a leap forward for sustainable development.

## Stakeholder engagement



### GOVERNMENTS & INTERNATIONAL ORGANIZATIONS

#### What matters most?

- Compliance
- Business integrity
- Climate change & energy
- Water
- Community engagement & social investments

#### Engagement approach

See Issue-specific engagement

See Region-specific engagement

#### 2017 highlights

- Received 2017 China Top 100 Supplier award from the China Petroleum and Chemical Industry Federation
- Received the Bio Excellence Award from the Government of Karnataka, India, for outstanding contribution in the bioindustrial sector
- Launched HelloScience, an open innovation community and digital platform to solve global problems related to the UN SDGs



### INVESTORS

#### What matters most?

- Innovation
- Profitable growth
- Corporate governance
- Product stewardship
- Climate change & energy

#### Engagement approach

See investor.Novozymes.com

#### 2017 highlights

- Included as a member of Dow Jones Sustainability Indices – World and Europe
- Received an A minus (A-) score in CDP's climate change disclosure and management assessment
- Included in Ethibel Sustainability Excellence Indices – Global and Europe
- Awarded Prime status by Oekom Research, a leading rating agency in sustainable investment
- Included in 2017 Global 100 Most Sustainable Corporations in the World Index by Corporate Knights, a magazine focused on clean capitalism



### OTHERS (community, academia, NGOs)

#### What matters most?

- Innovation
- Partnerships & customer engagement
- Community engagement & social investment
- Climate change & energy
- Bioethics & biodiversity

#### Engagement approach

See Strategic social investment

See Targets

#### 2017 highlights

- Awarded two researchers, Emmanuelle Charpentier and Virginijus Siksnys, the 2017 Novozymes Prize, worth DKK 3 million, for their pioneering research on gene-editing technology
- Focused our community engagement activities on science education and engaged more than 188,000 learners across the globe



### SUPPLIERS

#### What matters most?

- Responsible sourcing
- Compliance
- Labor practices & human rights
- Occupational health & safety
- Climate change & energy

#### Engagement approach

See Note 8.6 Responsible sourcing

#### 2017 highlights

- Signed two strategic, long-term energy agreements with Ørsted, Denmark's largest energy company, for its main production site in Kalundborg, Denmark
- Focused primarily on optimizing internal management processes to streamline supplier engagement going forward

# Investing for positive change

**Lee Qian is an Investment Manager of Baillie Gifford's Positive Change Fund. We asked him about why investors care about sustainability.**

Baillie Gifford, a UK-based independent investment management firm, manages on behalf of its clients the largest investment in Novozymes outside of the Novo Group. In 2017, it launched the Positive Change Fund, which aims to contribute to a more sustainable world for future generations while making attractive long-term returns for investors.

We spoke with Lee Qian, Investment Manager of Baillie Gifford's Positive Change Fund, about the importance of sustainable business to the investment community.

## **Why have you chosen to invest in Novozymes?**

We believe that Novozymes has good long-term growth opportunities ahead, because it provides products that are useful for society. Its business is built on bringing innovative products to market and strong customer engagement. From selling enzymes to laundry detergent manufacturers that enable low-temperature wash and energy savings to partnering with Monsanto to scale the reach of its microbial solutions which can improve agricultural yields, Novozymes takes a proactive approach to solving global sustainability challenges.

## **What was the motivation behind creating the Positive Change Fund?**

The Positive Change Fund aims to contribute toward a sustainable and inclusive future. We believe that businesses and innovations have tremendous potential to improve our society and planet. We further believe that purpose complements profits over the long term. Companies that are solving social and environmental challenges are likely to benefit from growing demand for their products and services, more loyal customers and more motivated employees. By allocating capital toward those companies, our clients can contribute toward a better future at the same time as receiving attractive returns on their investments.

## **How do you analyze positive change?**

We consider three factors when analyzing positive change. The first factor is intent: we look for companies that have a strong vision and clear leadership commitment to solve global sustainability challenges. Secondly, we look at product impact, which assesses how a given company's products solve social or environmental challenges. And finally, we look at business practices, specifically how a company treats its wider stakeholder base, beyond its shareholders.

## **What does this mean for Novozymes?**

Sustainable investing is moving away from the traditional notion of filtering out firms that are perceived to cause harm. The idea for the Positive Change Fund came from a simple question – if we want to invest for the best of society, how can we do that? We believe funds like these are the future of investing. Companies such as Novozymes, which enable their customers to operate more efficiently and reduce their carbon footprint, are well placed to take advantage of this trend.



**“The idea for the Positive Change Fund came from a simple question – if we want to invest for the best of society, how can we do that?”**



# Enabling a low-carbon future

**Novozymes has partnered with one of its energy suppliers, Ørsted, to phase out the use of coal in Denmark.**

Novozymes works closely with partners, including suppliers and customers, to enable the transition to a low-carbon economy. One such partner is Ørsted, Denmark's largest energy company. Formerly known as DONG Energy – short for Danish Oil and Natural Gas – it has undergone a green transformation and is committed to climate action.

In 2017, Novozymes signed a new 20-year agreement for green district heating and steam with Ørsted, Kalundborg Forsyning and Novo Nordisk, which will enable one of Denmark's largest coal-fired power stations to phase out coal and replace it with wood chips.

“I'm very pleased that we now have an agreement regarding Asnæs Power Station,” says Thomas Dalsgaard, Executive Vice President of Bioenergy and Thermal Power at Ørsted. “The future belongs to sustainable energy sources such as wind, solar and biomass. We'll therefore be phasing out all use of coal at our power stations by 2023. Our steam and heat customers in Kalundborg have just as ambitious targets to reduce their carbon emissions as we have, and I'm happy that together we can ensure a greener energy supply to the area.”

This will help to further reduce the carbon footprint of Novozymes' largest production site

in Kalundborg, Denmark. We already source 100% of our electricity from wind power in Denmark, and steam accounts for 80% of our carbon emissions from Kalundborg.

Novozymes also supports Ørsted's low-carbon transition in other ways.

In 2017, Ørsted and Bigadan announced plans to convert residual biomass from Novozymes' and Novo Nordisk's factories to biogas, which will be fed directly into the Danish natural gas grid. Ørsted and Bigadan will construct a new biogas plant, which is expected to be operational in 2018. This project is a great example of the circular economy, as it provides additional opportunities for recycling our residual biomass. After being processed at the biogas plant, the biomass will continue to be used as fertilizer on fields, as it has been for many years.

“This is a really good example of how residual products can be even better utilized. The incorporation of biogas into our natural gas network serves as an excellent supplement to the green power from the wind and sun as well as the green district heating from our power stations. Therefore, this project is an important step toward having an energy system that's green, independent and economically viable,” says Thomas Dalsgaard.

Also in 2017, Novozymes started delivering enzymes for biological sorting of household waste to Ørsted's Renaissance plant in Northwich, UK. “It's important to extract as many resources as possible from waste, and the enzymes are an important part of the process where we convert waste into green energy and recyclable material. This is both good for the environment and useful in terms of reducing the costs of waste management. I'm pleased that together we're also looking at the future prospects for this technology,” concludes Thomas Dalsgaard.



**“The future belongs to sustainable energy sources such as wind, solar and biomass.”**

# Progress on the Ten Principles

**Novozymes discloses its progress on the Ten Principles in the Accounts and performance section. Each note is based on the guidance from the UNGC and the GRI Standards for Sustainability Reporting. The notes include details on materiality & scope, management & reporting, progress in 2017, challenges & dilemmas and next steps.**

Theme	Disclosure	Commitments and memberships
<p><b>Human rights</b></p> <p>Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and</p> <p>Principle 2: make sure that they are not complicit in human rights abuses.</p>	<p>See Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</p>	<ul style="list-style-type: none"> <li>• UN Universal Declaration of Human Rights</li> <li>• UN Guiding Principles on Business and Human Rights</li> <li>• ILO Declaration on Fundamental Principles and Rights at Work</li> <li>• UNGPs Professionals Network</li> <li>• Supplier Ethical Data Exchange (SEDEX)</li> <li>• Ordinary member of Roundtable on Sustainable Palm Oil (RSP0)</li> </ul>
<p><b>Labor rights</b></p> <p>Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;</p> <p>Principle 4: the elimination of all forms of forced and compulsory labour;</p> <p>Principle 5: the effective abolition of child labour; and</p> <p>Principle 6: the elimination of discrimination in respect of employment and occupation.</p>	<p>See Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</p>	<ul style="list-style-type: none"> <li>• UN Universal Declaration of Human Rights</li> <li>• UN Guiding Principles on Business and Human Rights</li> <li>• ILO Declaration on Fundamental Principles and Rights at Work</li> <li>• UNGPs Professionals Network</li> <li>• Supplier Ethical Data Exchange (SEDEX)</li> </ul>
<p><b>Environment</b></p> <p>Principle 7: Businesses should support a precautionary approach to environmental challenges;</p> <p>Principle 8: undertake initiatives to promote greater environmental responsibility; and</p> <p>Principle 9: encourage the development and diffusion of environmentally friendly technologies.</p>	<p>See Notes 7.1 to 7.7 on environmental parameters in The Novozymes Report 2017</p>	<ul style="list-style-type: none"> <li>• UN Caring for Climate</li> <li>• UN Convention on Biological Diversity</li> <li>• Sustainable Energy For All: Sustainable Bioenergy High Impact Opportunity</li> <li>• Below50</li> <li>• World Business Council for Sustainable Development</li> <li>• Danish Footprint Network</li> </ul>
<p><b>Anti-corruption</b></p> <p>Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery</p>	<p>See Note 8.3 Business ethics in The Novozymes Report 2017</p>	<ul style="list-style-type: none"> <li>• UN Convention against Corruption</li> </ul>



## Taking action

# Core contributions to UN goals

**Novozymes has aligned its strategy with the SDGs. The section below highlights our initiatives and actions toward five goals where we have the potential to deliver material impacts.**

Novozymes is committed to enabling a more sustainable society in the coming decades by contributing to the UN Sustainable Development Goals (SDGs).

Novozymes was one of the pioneers in embracing and aligning with the SDGs. Our purpose, “Together we find biological answers for better lives in a growing world,” our strategy “Partnering for Impact” and our long-term targets and commitments demonstrate our focus on achieving the SDGs. Furthermore, we are currently developing a methodology to conduct SDG impact assessments. This assessment methodology tool will enable us to systematically evaluate our innovation opportunities and business solutions in terms of their potential positive contributions to the SDGs.

See “Novozymes and the Global Goals” on [Novozymes.com](http://Novozymes.com) for more details on how we contribute to the broader list of SDGs.

### We support ZERO HUNGER



Novozymes, along with its partners, helps farmers around the world to meet a key challenge outlined in SDG 2 Zero Hunger – to increase agricultural productivity significantly, but also sustainably. Through The BioAg Alliance, Novozymes and Monsanto collaborate to improve crop harvests through products containing naturally occurring microbes.

Furthermore, as part of the alliance with our partner DSM Nutritional Products, we enable the world’s largest poultry and swine farmers to produce more with less in a sustainable and economical way with our animal feed enzyme solutions.

Many of our Food & Beverages solutions to alleviate lactose intolerance and enhance infant nutrition also address specific challenges related to making food more widely accessible.

### We support QUALITY EDUCATION



Novozymes aims to educate 1 million people about the potential of biology by 2020. We believe that raising awareness about biology, biotechnology and the environment will help more people get involved in creating and adopting sustainable solutions in the future.

Since 2015, Novozymes has educated more than 300,000 learners about biology and how it enables a sustainable future, by engaging with regional schools, universities and communities.

In 2017, inspired by Global Biotech Week, Novozymes launched the initiative Teach for Tomorrow, to introduce young minds to the wonders of biotechnology.

### We support CLEAN WATER & SANITATION



Production processes for textiles, pulp & paper and leather can be made more sustainable using biotechnology. Many of Novozymes’ enzymatic solutions help customers save water during application compared with conventional methods.

We also offer solutions for wastewater treatment and sludge reduction for municipal and industrial applications.

In China, Novozymes is working to help solve water challenges in the south-eastern industrialized area as well as in the less-developed north-west with our microbial wastewater treatment solutions.

Clean Water & Sanitation is one of the first challenges that Novozymes and Grundfos, a global leader in advanced pump technologies, will focus on as part of the HelloScience open innovation platform.

## Core contributions to UN goals

### We support CLIMATE ACTION



To help address climate change, Novozymes has set a target of saving 100 million tons of CO<sub>2</sub> in 2020 through the application of its solutions. In 2017, Novozymes' customers avoided an estimated 76 million tons of CO<sub>2</sub> emissions by applying Novozymes' products, equivalent to taking approximately 32 million cars off the road.

Since 2009, Novozymes has also decoupled absolute CO<sub>2</sub> emissions from business growth and has invested significantly in increasing the share of renewable energy in its energy mix. Novozymes has also set an internal carbon price to evaluate its global portfolio of operational eco-efficiency projects and drive decarbonization in its operations.

### We support PARTNERSHIPS FOR THE GOALS



Novozymes' corporate strategy is called Partnering for Impact. We partner with global and regional influencers, policymakers, industry organizations, academia and NGOs to promote the development of sustainable solutions.

Novozymes is active within the UN Sustainable Energy for All (SE4All) initiative to enable the global biofuel sector.

In 2017, Novozymes also launched HelloScience, an open innovation platform enabling people to connect and collaborate on addressing the UN SDGs.

## Taking action

# Strategic social investment

**Novozymes invests in a wide variety of educational programs to help young people around the world understand the potential of biology and sustainability.**

SDG 4 describes how education is crucial for global sustainable development. We believe that by helping young people understand the potential of biology, sustainability and the environment, we can prepare the next generation to create the sustainable solutions of the future.

To better reach people around the world, the EDUCATE target is anchored in all the regions where Novozymes operates. Our employees have a wealth of knowledge about science and sustainability, and regularly engage with schools, universities and communities through various outreach programs.

Each region measures the number of learners it has reached through its educational initiatives. In total, we aim to reach 1 million people by 2020. We focus on programs for children with limited resources and access to scientific activities.

We are always looking for new and exciting ways to share our enthusiasm for enzymes and microorganisms with the world.

In 2017, to coincide with Biotech Week, we launched Teach for Tomorrow as a new global initiative to help us do exactly that. We encouraged employees to go to local schools and give elementary students a basic introduction to the potential of biology and biotechnology. With this initiative, we educated more than 3,000 learners across the globe.

In total, we educated more than 188,000 learners in 2017 through our different initiatives. Here are some of the highlights from our EDUCATE projects across different regions:

### China

In 2017, we continued to scale up our three core projects to develop knowledge of biology. The Biology Catalyzes the Beauty of Life project provides diversified vocational development opportunities for teachers and improves biology education through a teach-the-teacher approach in schools which serve disadvantaged migrant communities. It is run in partnership with Panorama PR & Resources Co. Ltd. In 2017, we covered 14 migrant schools and educated around 10,000 students.





# Encouraging China's little biologists

**Chu Fan is the Course Designer of the Little Biologists, one of our EDUCATE initiatives in China. We asked her how Novozymes has supported the initiative.**

Shanghai Ditworld is an NGO running one of our EDUCATE initiatives, the Little Biologists. The project is aimed at 5 to 10-year-olds. It teaches them about science, protecting the environment and promoting the UN SDGs. In 2017, this project covered 18 schools and educated around 7,000 students.

We spoke with Chu Fan, Course Designer, to learn more about the project.

## **How does this initiative differ from conventional teaching?**

The course is designed to focus on children's development and teach them about aspects of biology. The course teaches biology to students by demonstrating its application in the real world. The course is taught in several elementary schools and communities in Shanghai. The teaching program cultivates an interest in science and biology among students. The program promotes the UN SDGs by showing the link between biotechnology and global or local challenges. We encourage students to explore solutions to solve these challenges.

The course is taught by volunteers with different educational and career backgrounds. Their passion to teach encourages students to explore the potential of biology. We train the volunteers. Novozymes' employees help us to develop the teaching materials and provide guidance on training.

## **Have you seen any changes in the students since implementing this project?**

Since the implementation of the course, we have observed that more students are interested in learning biology and want to become biologists.



**"In 2017, this project covered 18 schools and educated around 7,000 students."**

## Strategic social investment

### China (continued)

Together with the NGO Enactus, we run the Biology Education Innovation (BEI) initiative. Through this program, we provide educational, financial and on-site teaching support to 45 project teams teaching biology to elementary and high school students.

Furthermore, as part of the global Teach for Tomorrow program, Novozymes China launched an initiative called Parents' Class, encouraging employees to teach biology in their child's school.

### Denmark

Our outreach activities aim to create interest in natural science. We sponsor and engage in a number of learning activities, such as the Young Scientist Competition, Geek Days, Guys' Science Day and Girls' Science Day. Each year, Novozymes welcomes around 600 high school students to its facilities in Bagsvaerd to teach them about enzymes.

### India

Novozyymes partners with the Agastya International Foundation, an Indian education trust and nonprofit organization based in Bangalore, and sponsors its Let's investigate lab at the Bio Discovery Center. This rural center provides a platform for children from nearby villages to experiment and build their understanding and knowledge of biology. Approximately 9,000 students visit the center each year.

As part of our partnership with the Center for Environment Education (CEE), we began sponsoring the Hand Wash & Personal Hygiene initiative, which focuses on improving personal

hygiene knowledge among students across five states in the south of the country. Furthermore, we continue to support the Handprint for Change initiative. This project aims to provide students with practical experience to integrate science and social science concepts and enhance their understanding of sustainable development.

In 2017, we also partnered with the Kalinga Institute of Social Sciences, a residential institute for tribal people based in Bhubaneswar, Odisha state. We support the institute by contributing toward its biology lab infrastructure. Our contribution is to help 10,000 students from marginalized and disadvantaged tribal communities.

### Latin America

Novozyymes' educational initiatives in this region rely on a digital and interactive format and center around apps that educate young readers about biology, biotechnology and sustainability through exciting tales connected to a specific SDG. We continued to disseminate knowledge through the two educational apps for smartphone and tablet that we launched last year. In 2017, we launched a new app on SDG 6 Clean Water & Sanitation.

The apps were used by StoryMax (a startup specialized in developing digital books), by Professor Benita Prieto (an expert in digital literature and education) and by SESI-Pr (a renowned educational institution in Paraná state, Brazil). SESI-Pr has tie-ups with more than 55 schools all over the state, providing access for more than 11,000 students.

StoryMax received an award in the People's Choice Digital Fiction category for one of its mobile applications, Fritt-Flacc by Jules Verne, in the Opening Up Digital Fiction Writing Competition in the UK. The objective of this competition is to recognize and discover popular digital fiction.

### North America

Our sites in this region engage in a diverse range of educational outreach activities. For example, Novozymes' site in Salem, Virginia, US, created the iNspire team, which visits classrooms in the local school system to talk about biology, biotechnology and science careers. Other sites also work with educational organizations in their communities to engage students.

In North Carolina, US, Novozymes partnered with the University of North Carolina's Morehead Science Center to support the SciMatch program, which brings scientists from universities into elementary and high school classrooms across the state.

Our site in Saskatoon, Canada, has partnered with the NGO Agriculture in the Classroom Saskatchewan to develop elementary soil kits that allow students to learn about the relationship between the soil, soil microbes and food supply through hands-on activities.



# Advocacy and policy engagement

**Novozymes supports policies that enable a low-carbon and sustainable future by engaging responsibly with policymakers around the world.**

As a leading bioinnovator, Novozymes seeks to engage in dialogue with the wider stakeholder landscape about the role of biology and biotechnology in addressing key global challenges. Our stakeholders include peers, industry partners, academia, civil society, influencers and policymakers. Novozymes is dedicated to ensuring transparency in its outreach. We engage in the areas of sustainability, bioinnovation, biotechnology, renewable energy, agriculture, science education and bioeconomy.

Novozymes presents information and its positions to policymakers and other interested parties in accordance with national and international laws and codes of conduct established by industry associations and other institutions. We have a public affairs presence in Copenhagen, Brussels, Washington D.C., New Delhi and Beijing.

Our employees are registered in dedicated lobbyist registers, as legally required in the US, and in the Transparency Register in Brussels. No registers exist in the other locations.

Novozymes is committed to communicating in a respectful way. We publish a comprehensive list of our global memberships on [Novozymes.com](https://www.novozymes.com).

## **Spend on advocacy and policy influence**

In 2017, Novozymes was a member of several global and local industry associations and other stakeholder organizations. We also engaged with the media, governments, NGOs and international organizations. The total amount spent on these activities was approximately DKK 10.8 million. This figure excludes employee costs, travel, rental, media-monitoring expenses and other related expenditure. Novozymes does not make direct contributions to political parties.

## **Engaging with policymakers**

Our advocacy supports our business interests, the UN SDGs and the Paris Climate Change Agreement (Paris Agreement). In 2017, we connected with influencers and policymakers through a range of global engagements.



## Engagement

### Supporting a low-carbon economic growth agenda through the G20

Novozymes is a member of International Chamber of Commerce (ICC), the G20 CEO Advisory Group and the Business 20 (B20). During the German 2017 chairmanship, Novozymes' President and CEO, Peder Holk Nielsen, was cochairman of the taskforce on energy, climate and resource efficiency. The taskforce produced a policy paper giving recommendations to the G20 about how to decouple economic growth from climate change impact. The policy paper was handed to German chancellor Angela Merkel ahead of the G20 meeting in Hamburg.

### Preparing for the EU Renewable Energy Directive post-2020

In preparation for the EU Renewable Energy Directive post-2020, Novozymes is advocating for the use of sustainable, low-carbon fuels in the transportation sector in Europe. We are partnering with ePURE – the European Renewable Ethanol Association – to ensure that sustainable conventional ethanol plays a role in the EU energy mix post-2020. We also support the progressive deployment of advanced biofuels by gradually ramping up blending obligations.

Together with Scania and Shell, Novozymes set up the Biofuels for Europe website, which translates the latest academic research on key issues related to biofuels into an easy-to-understand and science-based source of information to help EU policymakers make informed decisions.

### Promoting advanced biofuels through the BioRefining Alliance

Novozymes is a founding member of the Danish BioRefining Alliance. The alliance works to promote the use of advanced biofuels as a sustainable part of Denmark's future energy mix. Its objective is to foster political support to make Denmark a leader in tomorrow's bioeconomy. The alliance is also active in the EU Renewable Directive process, supporting 2G biorefining.

In 2017, the primary focus areas were to secure continued political support for establishing a 2G production plant in Denmark and consult with relevant political authorities on the bioeconomy.

### Working strategically with the Danish government globally

As Denmark strives for sustainability leadership, the Danish government is an important partner for Novozymes in encouraging other governments and the global community to move toward policies that enable a market for green technologies.

Novozymes works with the Danish Trade Council, a governmental export and investment promotion organization under the auspices of the Danish Ministry of Foreign Affairs, to develop opportunities in key markets. Furthermore, we also work with the Danish Ministry of Foreign Affairs on international export programs in markets relevant for our business. As a result, in 2017, Novozymes took part in trade delegations to India, Japan and Indonesia.

### Protecting the biofuel sector through Fuels America

In the US, a key focus area for our advocacy is to promote the domestic biofuel sector. Novozymes is a founding member of Fuels America, a coalition of organizations committed to protecting the US Renewable Fuel Standard (RFS).

In 2017, Fuels America sought to defend existing blending limits for conventional biofuels through targeted outreach to policymakers and the White House, following a proposal to revamp the RFS extensively from the US Environmental Protection Agency. Fuels America also launched an extensive public media campaign to highlight how the country's domestic biofuel production is good for the economy, energy security and the environment.

### Securing RenovaBio in Brazil

Novozymes is a founding member of the Brazilian Association of Industrial Biotechnology (ABBI). It seeks to promote innovation and the sustainable development of the industrial biotechnology sector in the country. Through our engagement with ABBI, we worked in the development of new biotech public policies as well as sustainability programs that promote biotechnology in the country.

In 2017, Emerson George De Vasconcelos, Regional President of Novozymes Latin America, was elected as the president of the board of directors of ABBI. We also contributed, through ABBI, to the preparation of the bill to set up RenovaBio, a policy that will support the Brazilian government in cutting carbon emissions. This policy is one step

toward achieving the country's commitment to the Paris Agreement and promoting biofuels production and usage in the country. This bill was approved by both legislative houses and signed into law in December 2017.

# Partnerships and collective action

**Novozymes strives to catalyze partnerships that drive action on the SDGs and enable the creation of a sustainable bioeconomy.**

Novozymes works closely with various stakeholders from the private sector, governments, civil society and academia to support the global sustainable development agenda. Here are the highlights from 2017:

### **HelloScience**

In 2017, Novozymes launched the new online open innovation platform HelloScience. With an open and collaborative approach, the objective is to foster and deliver innovative solutions to some of the world's greatest challenges related to the UN SDGs. HelloScience invites researchers, start-ups, NGOs, associations and companies to contribute knowledge, expertise, impactful solutions or just great ideas. The first theme for the platform is water scarcity, and includes a call from UNICEF about detecting contamination in drinking water.

A range of contributors have shown great interest in this open platform and, toward the end of 2017, the global leader in advanced pump technologies, Grundfos, offered its expertise and joined HelloScience. Novozymes and Grundfos will combine biology and pump technology, and kick off an open innovation collaboration for clean water.

### **Biobased Industries Joint Undertaking (BBI JU)**

Novozymes is a founding member of BBI JU, a public-private partnership that was set up by the European Union and the Biobased Industries Consortium (BIC). Its aim is to develop a sustainable bioeconomy in Europe. BBI JU wants to break Europe's dependence on fossil fuels by converting biomass and waste into greener everyday products, and by creating new markets for biobased products such as food, feed, chemicals, materials and fuels.

Since 2014, Novozymes has benefited from its BBI JU membership by expanding its research and innovation competencies, reinforcing existing partnerships and connecting with new actors. So far, Novozymes has taken part in four projects. One example is the UR BIOFIN project, which was launched in Spain in 2017. This demo project, led by Imecal, aims to create economic, environmental and technical value by converting the organic fraction of municipal solid waste into by-products such as bioethanol, biochemicals, bioplastics and additives.

### **International Chamber of Commerce (ICC)**

ICC is the world's leading business organization, and is the only one with official UN Observer Status at the United Nations in

New York. We are involved in a number of its global commissions, such as environment and energy and its national committees.

In 2017, Novozymes worked with ICC on the UN SDGs and the Global Business Alliance for the 2030 Agenda. Through our engagement with ICC, we were able to participate in a number of UN events, such as the UN Forum on Science, Technology and Innovation and the High-Level Political Forum on Sustainable Development. In addition, Novozymes was involved in ICC's activities relating to the UN General Assembly in September, including the Private Sector Forum, cohosted by the UN Global Compact.

### **United States Council for International Business (USCIB)**

In 2017, Novozymes also continued its collaboration with ICC's US affiliate, the United States Council for International Business (USCIB). Novozymes' President and CEO, Peder Holk Nielsen, is on the Board of Trustees, where he serves as a sustainability champion. He was heavily involved in USCIB's program of activities for the UN General Assembly in September. The focus was on the theme "Business Makes It Happen" in terms of helping to ensure successful implementation of the UN SDGs. We also supported USCIB's outreach relating to public-private

partnerships during Global Partnerships Week in Washington D.C. in spring 2017 and at the UN General Assembly in September 2017.

### **World Business Council for Sustainable Development (WBCSD)**

WBCSD is a global organization comprising more than 200 leading businesses working together to drive transition and acceleration of sustainable development. In 2017, Novozymes continued its engagement and involvement with various WBCSD workstreams, most notably below50 and Sustainable Lifestyles.

### **below50**

Novozymes is a founding member of below50, a global campaign to reduce emissions in the transportation sector by increasing the demand for sustainable fuels. In 2017, below50 established three regional hubs in Australia, Brazil and the US, in collaboration with key stakeholders in each region to facilitate targeted market implementation. below50 also continued to raise awareness of the benefits of low-carbon fuels globally, and hosted technology roadshows and investment dialogues in Australia, Brazil, China and India in 2017. At COP23 in Bonn, Germany, representatives from Novozymes spoke about the importance of global campaigns such as below50.



# Fueling a sustainable transportation future

**Novozymes has supported below50 since its formation in 2016. Gerard Ostheimer, Cofounder of below50, talks about the role of biofuels in a sustainable future.**

below50 is a global campaign to grow the global market for the world's most sustainable fuels and help achieve a carbon-neutral transportation sector. Sustainable fuels are defined as fuels that produce at least 50% less CO<sub>2</sub> emissions than conventional fossil fuels.

below50 brings together organizations from across the value chain to identify customized local solutions. It was established after the Paris Climate Agreement through a collaboration between the UN Sustainable Energy for All initiative, the World Business Council for Sustainable Development and the Roundtable on Sustainable Biofuels. Novozymes is a founding member and part of the below50 leadership group.

We sat down with Dr. Gerard Ostheimer, Cofounder and Senior Advisor of below50 and Global Lead for Bioenergy at Sustainable Energy for All, to learn more about the relevance of biofuels and the future of sustainable transportation.

## **What are the future challenges in the global transportation sector?**

There are different challenges across the sector. When it comes to personal mobility, there is a widespread belief that renewable electricity will solve everything. Of course, we

encourage the adoption of electric vehicles, but we also need to recognize that in certain geographies and with certain technologies, ethanol remains and will remain the most sustainable option. When it comes to heavy transportation, that is freight, maritime and aviation, electrification is not a viable option. These sectors have a crushing need for low-carbon fuels such as ethanol, biodiesel and bio jet fuel.

## **What is below50's role in tackling these challenges?**

Since COP21, there has been growing recognition that the world will not reach its climate goals without reducing emissions from sectors which are energy intensive and difficult to decarbonize, such as aviation, maritime and freight. below50's mission is to decarbonize the transportation sector through the use of sustainable fuels.

We are closely connected with the UNFCCC community. In 2017, at COP23 in Bonn, Germany, everybody wanted to talk about decarbonizing transport. We are currently seeing a great deal of interest from national governments, including those of Australia, Brazil, and from local communities, such as Queensland in Australia, California in the US, and British Columbia in Canada. However,

we believe the biggest potential lies in the growing number of corporate commitments to reduce emissions. Our role is to bring together organizations from across the value chain and convert the global strategy of reducing emissions into local customized solutions for transportation.

## **How does below50 work, and how does Novozymes support it?**

below50 is all about leveraging global interest and translating it into action. That action is not going to happen in a conference room in Bonn, but in local communities across the globe. That is why we are establishing regional hubs that serve as a link between the buyers and producers of sustainable fuel. Through these regional hubs, we can identify local companies that are interested in reducing their transport emissions and educate them about the possible solutions. We also work with local governments to facilitate the creation of favorable policies that promote production, investment and demand.

Novozymes has been a key ally from the very start. It supports below50's mission through its thought leadership and by sponsoring the creation of regional hubs.



**"When it comes to heavy transportation, that is freight, maritime and aviation, electrification is not a viable option. These sectors have a crushing need for low-carbon fuels such as ethanol, biodiesel and biojet fuel."**

# Issue-based and sector initiatives

**Novozymes supports the UN Sustainable Energy for All initiative and the UN Global Compact's work on the SDGs and climate change.**

Novozymes promotes key issue-based and sectoral initiatives affiliated with several UN agencies. Here are the highlights of our engagement in 2017:

## **UN Global Compact Action Platforms**

The UN Global Compact has developed a new portfolio of action platforms to support and align businesses to achieve the UN SDGs. As a leading member of the UN Global Compact, Novozymes engages in several of these action platforms.

## **Blueprint for the SDG Leadership Action Platform**

This action platform provides guidance for SDG leadership, given that the successful achievement of the SDGs requires action and engagement from all businesses, regardless of size or location.

Throughout 2017, Novozymes was active within the platform as part of its ongoing commitment to the UN Global Compact. Novozymes' employees contributed to a series of working meetings and calls as well as physical discussions held on the margins of the UN General Assembly. The objective was to help outline a value- and principle- based approach to encourage the uptake of the SDGs by all types of businesses.

## **Reporting on the SDG Action Platform**

The action platform aims to collect and establish best practices on SDG reporting from various businesses. Novozymes has been a frontrunner in using the SDGs strategically in setting its long-term vision and purpose. In 2017, Novozymes participated in the platform with a series of meetings to share its experiences and provide insights into and guidance on the fast-evolving landscape of sustainability reporting.





## Engagement

### Caring for Climate

Novozymes supports the Paris Agreement and has publicly articulated its position on climate change on [Novozymes.com](http://Novozymes.com). We also endorse the three UN Global Compact Business Leadership Criteria for Carbon Pricing:

1. Set an internal price for carbon high enough to materially affect investment decisions to drive down greenhouse gas emissions.
2. Publicly advocate the importance of carbon pricing through policy mechanisms that take into account country-specific economies and policy contexts.
3. Communicate on progress over time on the above two criteria in public corporate reports.

Novozymes has adopted an internal carbon pricing model whereby a shadow price is applied to its direct and indirect carbon emissions when assessing its global portfolio of operational eco-efficiency projects. This tool helps us quantify the climate benefits of one efficiency project over another and prioritize investments in regions where our operational carbon footprint is greater (i.e. Asia Pacific and the Americas).

We also continue to publicly advocate for carbon pricing and other low-carbon development mechanisms globally. In terms of disclosure, Novozymes is committed to reporting its progress through various channels, including its integrated annual report and CDP disclosure. In 2017, we achieved leadership level A minus (A-) in the CDP Climate Change Program for our climate change mitigation efforts.

### SE4All (Sustainable Energy For All)

The UN Sustainable Energy for All (SE4All) initiative aims to double the share of renewable energy in the global energy mix by 2030, in support of the UN SDGs. In 2017, Novozymes sponsored the secretariat of the SE4All High Impact Opportunity on Bioenergy.

Back in 2015, SE4All launched the Sustainable Bioenergy Accelerator, which is a partnership between the UN Food and Agriculture Organization (FAO), the Roundtable on Sustainable Biomaterials (RSB) and other international organizations working to accelerate the development and deployment of bioenergy solutions for power and fuel. Novozymes supports the work of the Accelerator.

In 2017, three Accelerator members and international technical agencies – the International Renewable Energy Agency (IRENA), the UN FAO and the International Energy Agency (IEA Bioenergy) – jointly wrote and published a briefing paper.

The paper underscores the importance of bioenergy in achieving the UN SDGs related to climate, food, sustainable land use and sustainable energy.

In March, Everest Energy (an Accelerator partner) established SusInc in Nairobi, Kenya. SusInc is a project accelerator making financing in renewable energy smarter and faster. The objective is to create bankable projects and foster investor engagement in East Africa.

## Engagement

# Region-specific engagement

**Novozymes participates in the UN Global Compact's local networks and engages in targeted activities to promote sustainability in all its operating regions.**

Novozymes' regional subsidiaries in Brazil, China, India, the Nordic region and the US are active members of the UN Global Compact's local networks. Furthermore, regional subsidiaries engage in relevant local working groups and arrangements to further the UN SDGs. Here is an overview of activities in 2017:

### **Brazil**

In 2017, Novozymes supported the adoption of RenovaBio through ABBI (see Advocacy and policy engagement). To reinforce our contributions to the biofuel segment, we cofounded and became a member of the board of the National Union of Corn Ethanol (UNEM).

In 2017, Pedro Luiz Fernandes, Vice President of Corporate Affairs and Sustainability of Novozymes Latin America, was elected to the board of directors of the Brazilian Association of Industry and Commerce of Food Ingredients and Additives (ABIAM).

The Enzymes Working Team is also led by Novozymes Latin America and helps in the dialogue with the Brazilian health authorities. The association focuses on Brazilian legislation and the Mercosur regulatory framework on food ingredients and additives.

### **China**

In 2017, Novozymes retained its board membership of the UN Global Compact Network China. As part of the network, we are responsible for reviewing annual working plans and for supporting the implementation of local initiatives. In 2017, we raised awareness about the importance of the SDGs by sharing knowledge within the network, and encouraged MiniJ, one of our new customers, to commit to the UN Global Compact's Ten Principles and engage in local promotion of the SDGs.



## Engagement

In October 2017, we attended the 72<sup>nd</sup> United Nations Day in Beijing. The event was also attended by government agencies, international organizations and private sector organizations. The objective of the event was to inspire and mobilize stakeholders to act on the SDGs.

### Denmark

In 2017, we engaged with our peers from the UNGC Nordic Network to seek stakeholder feedback on our annual reporting. The group shared feedback on companies' business models, SDG communications, materiality assessments and so on. Going forward, Novozymes will continue to engage in peer reviews of the COP to gain further insights into better reporting practices.

### India

Novozymes continued its role as convener of the Sustainability Alliance Partners platform, which promotes the environmental principles of the UN Global Compact. The group supports the conceptualization of various approaches to take the sustainability agenda forward in India.

In 2017, we participated in Making Global Goals Local Business – India, an event organized by the UN Global Compact. Claus Stig Pedersen, Novozymes' Head of Corporate Sustainability, was the keynote speaker at the Blueprint for SDG leadership session.

We also participated in the Business and Climate Summit, one of the leading annual forums for businesses, investors and policymakers to build the partnerships needed to accelerate the low-carbon transition.

In 2017, Novozymes was part of the Confederation of Indian Industry (CII) Climate Change Council. The council engages with the government to understand the role of industry in meeting India's Nationally Determined Contribution (NDC) related to the Paris Agreement. Novozymes also cochairs the CII Bioenergy committee in India. The committee looks at biofuel policies and plays a thought leadership role in terms of the overall issue of biomass collection and aggregation.

As part of our engagement with CII, we participated in the 12th Sustainability Summit, organized by the CII and the ITC Centre of Excellence for Sustainable Development. The summit focused on topics such as climate change action, clean energy and sustainable living with good health and nutrition.

### North America

In 2017, Novozymes continued to support the UN's efforts to promote the SDGs in the private sector, and we elevated the discussion at numerous prominent events throughout the year. Claus Stig Pedersen, Novozymes' Head of Corporate Sustainability, talked about how companies can align their strategies and innovation pipelines with the SDGs to create a positive impact at Sustainable Brands 2017 Detroit and the LAUNCH Circular Innovation Summit. Arlan Peters, Head of Sustainability for North America, also spoke about aligning corporate strategies with the SDGs at the CERES Conference 2017 and GreenBiz 2017.

# GRI Content Index 2017

## **Approach to the GRI**

### **GRI 102: General Disclosures**

Organizational profile  
Strategy, ethics and integrity  
Governance  
Stakeholder engagement  
Reporting practice

### **Topic-Specific Disclosures**

200: Economic  
300: Environmental  
400: Social

# Approach to the GRI

Since 2002, Novozymes has relied on the GRI framework to guide its integrated reporting. We have followed the developments in the GRI Standards (previously known as GRI Guidelines) over the years and use them as a yardstick to measure our sustainability performance.

## Reporting specifications

Novozymes refers to GRI Standard 101: Foundation 2016 to inspire its materiality assessment process. Our top material issues have been identified through a robust assessment process, and mapped with relevant GRI Categories and Disclosures.

We refer to GRI 102: General Standard Disclosures 2016 to provide information on organizational profile, strategy, ethics and integrity, governance, stakeholder engagement and reporting practices. This information is reported throughout The Novozymes Report 2017 under relevant report sections.

The GRI 103: Management Approach 2016 guides our reporting on the management approach to material issues. Our disclosure on material issues is contained in the Accounts & performance section of The Novozymes Report 2017. The disclosure on management approach includes information on four aspects:

1. Explanation of material topic and its boundary.
2. Significance of material topic to Novozymes.
3. Management approach, which describes how we manage the issue(s). This may include our strategy, policies, positions, commitments and targets, as well as any specific programs and initiatives in the area.
4. Monitoring and performance, which describes how we evaluate our management approach and our performance in the area.

Furthermore, we have reported topic-specific disclosures for each of the material issues identified under Economic, Environmental and Social categories by referring to the GRI 200 Economic Standard, GRI 300 Environmental Standard and GRI 400 Social Standard respectively.

## Legend for reporting symbols

- ✓ Full disclosure
- (✓) Partial disclosure
- Novozymes does not report on this indicator
- NA This indicator is not applicable to Novozymes

The GRI Index provided here serves as a guide to where we can find more detailed information on general and topic-specific information reported throughout The Novozymes Report 2017.



## Approach to the GRI

The material issues have been mapped against their relevant GRI Categories and Disclosures to link Novozymes' material issues to the nomenclature used by GRI.

Material Issues	Importance	GRI Category (ies)	Disclosure
Innovation	High	Economic	GRI 201: Economic Performance; GRI 203: Significant Indirect Economic Impact
Profitable growth	High	Economic	GRI 201: Economic Performance
Partnerships & customer engagement	High	Economic and Social	GRI 201: Economic Performance; GRI 416: Customer Health and Safety
Compliance	High	Economic and Social	GRI 307: Environmental Compliance; GRI 419: Socioeconomic Compliance
Climate change & energy	High	Environmental	GRI 305: Emissions; GRI 302: Energy
Business ethics	High	General disclosure and Economic	GRI 102-16 to 102-17: Ethics and Integrity; GRI 205: Anti-Corruption; GRI 206: Anti-Competitive Behavior
Corporate governance	High	General disclosure and Economic	GRI 102-18 to 102-39: Governance; GRI 405: Diversity and Equal Opportunity
Water	High	Environmental	GRI 303: Water
Product stewardship	High	Social	GRI 416: Customer Health and Safety; GRI 417: Marketing and Labeling
Solid capital structure	High	Economic	GRI 201: Economic Performance
Bioethics & biodiversity	High	Environmental	-
Occupational health & safety	High	Social	GRI 403: Occupational Health & Safety
Community engagement & social investment	High	Economic and Social	GRI 413: Local Communities; GRI 203: Significant Indirect Economic Impact
Responsible sourcing	High	Environmental and Social	GRI 308: Supplier Environmental Assessment; GRI 414: Supplier Social Assessment
Labor practices & human rights	High	Social	GRI 401: Employment; GRI 402: Labor Management Relations; GRI 404: Training and Education; GRI 405: Diversity and Equal Opportunity; GRI 407: Freedom of Association and Collective Bargaining; GRI 408: Child Labor; GRI 409: Forced or Compulsory Labor; GRI 414: Supplier Social Assessment; GRI 412: Human Rights Assessment
Waste	Medium	Environmental	GRI 306: Effluents and Waste
Data security	Medium	Economic and Social	GRI 102-29 to 30: Governance
Tax	Medium	Economic	GRI 201: Economic Performance
Animal welfare	Medium	Environmental	GRI 307: Environmental Compliance
Deforestation & land use change	Medium	Environmental	-

# Organizational profile

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-1	Name of the organization	<ul style="list-style-type: none"> <li>About the report in The Novozymes Report 2017</li> </ul>	✓
102-2	Activities, brands, products and/or services	<ul style="list-style-type: none"> <li>Novozymes in a nutshell in The Novozymes Report 2017</li> <li>2017 in brief in The Novozymes Report 2017</li> <li>Business model in The Novozymes Report 2017</li> </ul>	✓
102-3	Location of organization's headquarters	<ul style="list-style-type: none"> <li>Contact us on Novozymes.com</li> <li>Note 6.8 Group companies in The Novozymes Report 2017</li> </ul>	✓
102-4	Locations of operations	<ul style="list-style-type: none"> <li>Contact us on Novozymes.com</li> <li>Note 6.8 Group companies in The Novozymes Report 2017</li> <li>Site data in The Novozymes Report 2017</li> </ul>	✓
102-5	Nature of ownership and legal form	<ul style="list-style-type: none"> <li>The Novozymes stock in The Novozymes Report 2017</li> <li>Corporate governance on Novozymes.com</li> </ul>	✓
102-6	Markets served	<ul style="list-style-type: none"> <li>Novozymes in a nutshell in The Novozymes Report 2017</li> <li>2017 in brief in The Novozymes Report 2017</li> </ul>	✓
102-7	Scale of the organization	<ul style="list-style-type: none"> <li>Note 2.1 Segments in The Novozymes Report 2017</li> <li>Note 2.2 Revenue</li> <li>Note 2.3 Employees</li> <li>Note 6.8 Group companies in The Novozymes Report 2017</li> <li>Site data in The Novozymes Report 2017</li> </ul>	✓

# Organizational profile (continued)

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-8	Employee information	<ul style="list-style-type: none"> <li>Novozymes does not disclose proprietary information on total workforce by employment contract</li> <li>Novozymes reports externally on site data, including number of employees, gender distribution, employee turnover, age, seniority and rate of absence</li> <li>Note 2.3 Employees in The Novozymes Report 2017</li> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> <li>Site data in The Novozymes Report 2017</li> </ul>	(✓)
102-9	Describe the organization's supply chain	<ul style="list-style-type: none"> <li>Novozymes does not report this indicator publicly as this is proprietary information</li> </ul>	-
102-10	Significant changes during the reporting period regarding size, structure, ownership or supply chain	<ul style="list-style-type: none"> <li>2017 in brief in The Novozymes Report 2017</li> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-11	Precautionary principle or approach	<ul style="list-style-type: none"> <li>CEO statement of continued commitment: Biology for a better world in Novozymes' UNGC Communication on Progress 2017</li> <li>Note 7.7 Product stewardship in The Novozymes Report 2017</li> </ul>	✓
102-12	External initiatives	<ul style="list-style-type: none"> <li>Progress on the Ten Principles in Novozymes' UNGC Communication on Progress 2017</li> </ul>	✓
102-13	Memberships of associations	<ul style="list-style-type: none"> <li>Advocacy and policy engagements in Novozymes' UNGC Communication on Progress 2017</li> <li>Better together on Novozymes.com</li> </ul>	(✓)

# Strategy, ethics and integrity

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-14	Statement from senior decision-maker	<ul style="list-style-type: none"> <li>Letter from the CEO: Innovation for greater impact in The Novozymes Report 2017</li> <li>CEO statement for continued commitment: Biology for a better world in Novozymes' UNGC Communication on Progress 2017</li> </ul>	✓
102-15	Key impacts, risks and opportunities	<ul style="list-style-type: none"> <li>Risk management in The Novozymes Report 2017</li> <li>Business Model in The Novozymes Report 2017</li> <li>Notes 7.1 to 8.6 in The Novozymes Report 2017</li> </ul>	✓
102-16	Values, principles, standards and norms of behavior	<ul style="list-style-type: none"> <li>About us on Novozymes.com</li> <li>Position paper on Business integrity on Novozymes.com</li> <li>Note 8.3 Business ethics in The Novozymes Report 2017</li> </ul>	✓
102-17	Mechanisms for advice and concerns about ethics	<ul style="list-style-type: none"> <li>Position paper on Business integrity on Novozymes.com</li> <li>Progress on the Ten Principles in Novozymes' UNGC Communication on Progress 2017</li> <li>Contact us: Novozymes' Whistleblower System on Novozymes.com</li> <li>Note 8.3 Business ethics in The Novozymes Report 2017</li> </ul>	✓

# Governance

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-18	Governance structure	<ul style="list-style-type: none"> <li>Corporate governance in The Novozymes Report 2017</li> <li>Board of Directors: Composition and responsibilities in The Novozymes Report 2017</li> <li>Management and Ownership on Novozymes.com</li> </ul>	✓
102-19	Delegating authority	<ul style="list-style-type: none"> <li>The target-setting process at Novozymes ensures top-down approach for delegating authority for economic, environmental and social topics</li> <li>Sustainability governance on Novozymes.com</li> <li>Rules of procedure for the Board of Directors on Novozymes.com</li> </ul>	✓
102-20	Executive-level responsibility for economic, environmental and social topics	<ul style="list-style-type: none"> <li>Sustainability governance on Novozymes.com</li> <li>Corporate governance in The Novozymes Report 2017</li> </ul>	✓
102-21	Consulting stakeholders on economic, environmental and social topics	<ul style="list-style-type: none"> <li>Sustainability governance on Novozymes.com</li> <li>Stakeholder engagement in Novozymes' UNGC Communication on Progress 2017</li> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-22	Composition of the highest governance body and its committees	<ul style="list-style-type: none"> <li>Corporate governance in The Novozymes Report 2017</li> <li>Board of Directors: Composition and responsibilities in The Novozymes Report 2017</li> <li>Executive Leadership Team in The Novozymes Report 2017</li> </ul>	✓
102-23	Chair of the highest governing body	<ul style="list-style-type: none"> <li>Board of Directors and Executive Leadership Team in The Novozymes Report 2017</li> <li>Management and Ownership on Novozymes.com</li> </ul>	✓
102-24	Nominating and selecting the highest governance body	<ul style="list-style-type: none"> <li>Rules of procedure for the Board of Directors on Novozymes.com</li> <li>Board of Directors in The Novozymes Report 2017</li> </ul>	✓
102-25	Conflicts of interest	<ul style="list-style-type: none"> <li>Management and Ownership on Novozymes.com</li> </ul>	(✓)
102-26	Role of highest governance body in setting purpose, values and strategy	<ul style="list-style-type: none"> <li>Note 8.3 Business ethics in The Novozymes Report 2017</li> <li>Corporate governance on Novozymes.com</li> </ul>	✓



# Governance (continued)

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-27	Collective knowledge of highest governance body	<ul style="list-style-type: none"> <li>Sustainability governance on Novozymes.com</li> <li>Charter of the Audit Committee on Novozymes.com</li> </ul>	✓
102-28	Evaluating the highest governance body's performance	<ul style="list-style-type: none"> <li>Corporate governance in The Novozymes Report 2017</li> <li>Charter of the Audit Committee on Novozymes.com</li> </ul>	✓
102-29	Identifying and managing economic, environmental and social topics and their impacts, risks and opportunities	<ul style="list-style-type: none"> <li>Risk management in The Novozymes Report 2017</li> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-30	Effectiveness of risk management processes	<ul style="list-style-type: none"> <li>Risk management in The Novozymes Report 2017</li> <li>Sustainability governance on Novozymes.com</li> </ul>	✓
102-31	Review of economic, environmental and social topics	<ul style="list-style-type: none"> <li>It is reviewed quarterly</li> <li>Progress on the Ten Principles in Novozymes' UNGC Communication on Progress 2017</li> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-32	Highest governance body's role in sustainability reporting	<ul style="list-style-type: none"> <li>The Board of Directors and the Executive Leadership Team review and approve our integrated annual report</li> <li>Charter of the Audit Committee on Novozymes.com</li> </ul>	✓
102-33	Communicating critical concerns	<ul style="list-style-type: none"> <li>Risk management in The Novozymes Report 2017</li> <li>Corporate governance in The Novozymes Report 2017</li> <li>Note 8.3 Business ethics in The Novozymes Report 2017</li> </ul>	✓
102-34	Nature and total number of critical concerns	<ul style="list-style-type: none"> <li>Note 8.3 Business ethics in The Novozymes Report 2017</li> </ul>	(✓)

# Governance (continued)

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-35	Remuneration policies	<ul style="list-style-type: none"> <li>Guidelines for the compensation of the Board of Directors and Executive Leadership Team on Novozymes.com</li> <li>Remuneration report in The Novozymes Report 2017</li> </ul>	✓
102-36	Process for determining remuneration	<ul style="list-style-type: none"> <li>Guidelines for the compensation of the Board of Directors and Executive Leadership Team on Novozymes.com</li> </ul>	✓
102-37	Stakeholders' involvement in remuneration	<ul style="list-style-type: none"> <li>Shareholders' meetings on Novozymes.com</li> <li>Guidelines for the compensation of the Board of Directors and Executive Leadership Team on Novozymes.com</li> </ul>	✓
102-38	Annual total compensation ratio	<ul style="list-style-type: none"> <li>Novozymes reports on this indicator at a global level only</li> <li>Remuneration report in The Novozymes Report 2017</li> </ul>	(✓)
102-39	Percentage increase in annual total compensation ratio	<ul style="list-style-type: none"> <li>Novozymes does not report on this indicator</li> </ul>	-

# Stakeholder engagement

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-40	List of stakeholder groups	<ul style="list-style-type: none"> <li>Better together on Novozymes.com</li> <li>Stakeholder engagement in Novozymes' UNGC Communication on Progress 2017</li> </ul>	✓
102-41	Collective bargaining agreements	<ul style="list-style-type: none"> <li>Novozymes does not report publicly on this information</li> <li>Novozymes supports employees' rights to join associations and bargain collectively, but we do not register employees' memberships of unions, since this is illegal in several of the countries in which we operate</li> </ul>	-
102-42	Identifying and selecting stakeholders	<ul style="list-style-type: none"> <li>Stakeholder engagement occurs across various functions and departments at Novozymes. We do not publicly disclose our basis for identifying and selecting stakeholders to engage with</li> <li>Communication Policy in Positions &amp; Policies on Novozymes.com</li> <li>Stakeholder engagement in Novozymes' UNGC Communication on Progress 2017</li> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	(✓)
102-43	Approach to stakeholder engagement	<ul style="list-style-type: none"> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017 for information specific to stakeholder engagement in the materiality assessment process</li> <li>With the exception of stakeholder engagement in the materiality assessment process, we do not report frequency of engagement by type and stakeholder group as this is a continuous process</li> <li>Partnerships and collective action in Novozymes' UNGC Communication on Progress 2017</li> <li>Stakeholder engagement in Novozymes' UNGC Communication on Progress 2017</li> <li>Communication Policy in Positions &amp; Policies on Novozymes.com</li> <li>Advocacy and policy engagement in Novozymes' UNGC Communication on Progress 2017</li> </ul>	(✓)
102-44	Key topics and concerns raised	<ul style="list-style-type: none"> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> <li>Business model in The Novozymes Report 2017</li> </ul>	(✓)

# Reporting practice

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-45	Entities included in the consolidated financial statements	<ul style="list-style-type: none"> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> <li>Note 6.8 Group companies in The Novozymes Report 2017</li> </ul>	✓
102-46	Defining report content and topic boundaries	<ul style="list-style-type: none"> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-47	List of material topics	<ul style="list-style-type: none"> <li>Materiality in Note 1 Basis of reporting in The Novozymes Report 2017</li> <li>Materiality and value chain assessment in Novozymes' UNGC Communication on Progress 2017</li> <li>Mapping material issues with GRI Categories and Disclosures in Novozymes' Reporting on the GRI</li> </ul>	✓
102-48	Restatements of information	<ul style="list-style-type: none"> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-49	Changes in reporting	<ul style="list-style-type: none"> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> <li>Materiality and value chain assessment in Novozymes' UNGC Communication on Progress 2017</li> </ul>	✓
102-50	Reporting period	<ul style="list-style-type: none"> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> <li>About the report in The Novozymes Report 2017</li> </ul>	✓
102-51	Date of most recent report	<ul style="list-style-type: none"> <li>February 7, 2018</li> </ul>	✓
102-52	Reporting cycle	<ul style="list-style-type: none"> <li>Novozymes' reporting cycle is annual</li> <li>Note 1 Basis of reporting in The Novozymes Report 2017</li> </ul>	✓
102-53	Contact point for questions regarding the report	<ul style="list-style-type: none"> <li>About the report in The Novozymes Report 2017</li> </ul>	✓

# Reporting practice (continued)

GRI DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
102-54	Claims of reporting in accordance with the GRI standards	<ul style="list-style-type: none"> <li>Approach to the GRI in Novozymes' Reporting on the GRI</li> </ul>	✓
102-55	GRI content index	<ul style="list-style-type: none"> <li>Novozymes' Reporting on the GRI</li> </ul>	✓
102-56	External assurance	<ul style="list-style-type: none"> <li>Independent assurance statement on Novozymes' 2017 sustainability reporting and adherence to the AA1000 Accountability principles in The Novozymes Report 2017</li> <li>Independent auditor's report in The Novozymes Report 2017</li> </ul>	✓



## Topic-Specific Disclosures

# Economic

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 201: Economic Performance</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>• Strategy in The Novozymes Report 2017</li> <li>• Letter from the Board of Directors: Setting the direction for growth in The Novozymes Report 2017</li> <li>• Letter from the CEO: Innovation for greater impact in The Novozymes Report 2017</li> </ul>	✓
201-1	Direct economic value generated and distributed	<ul style="list-style-type: none"> <li>• Novozymes does not disclose proprietary information on donations and community investments</li> <li>• Sales and earnings in The Novozymes Report 2017</li> <li>• Note 2.3 Employees in The Novozymes Report 2017</li> <li>• Note 3.1 Intangible assets and impairment test of goodwill in The Novozymes Report 2017</li> <li>• The big picture in The Novozymes Report 2017</li> <li>• Business model in The Novozymes Report 2017</li> </ul>	(✓)
201-2	Financial implications and other risks and opportunities due to climate change	<ul style="list-style-type: none"> <li>• Novozymes' disclosure on risks and opportunities related to climate change can be found in our response to the CDP Investor questionnaire on <a href="http://www.cdp.net">www.cdp.net</a></li> </ul>	✓
<b>GRI 203: Indirect Economic Impacts</b>			
203-2	Significant indirect economic impacts	<ul style="list-style-type: none"> <li>• Targets in The Novozymes Report 2017</li> <li>• The big picture in The Novozymes Report 2017</li> <li>• Business model in The Novozymes Report 2017</li> <li>• Strategic social investment in Novozymes' UNGC Communication on Progress 2017</li> </ul>	✓

Topic-Specific Disclosures

# Economic (continued)

GRI STANDARD/DISCLOSURE	REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 205: Anti-corruption</b>		
103	Management approach disclosures	• Note 8.3 Business ethics in The Novozymes Report 2017
205-1	Operations assessed for risks related to corruption	• Note 8.3 Business ethics in The Novozymes Report 2017 • Position paper on Business integrity in Positions & Policies on Novozymes.com
205-2	Communication and training about anti-corruption policies and procedures	• Note 8.3 Business ethics in The Novozymes Report 2017 • Position paper on Business integrity in Positions & Policies on Novozymes.com
<b>GRI 206: Anti-competitive Behavior</b>		
103	Management approach disclosures	• Note 8.3 Business ethics in The Novozymes Report 2017
206-1	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	• Note 8.3 Business ethics in The Novozymes Report 2017

## Topic-Specific Disclosures

# Environmental

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 302: Energy</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.2 Energy in The Novozymes Report 2017</li> </ul>	✓
302-1	Energy consumption within the organization	<ul style="list-style-type: none"> <li>Note 7.2 Energy in The Novozymes Report 2017</li> </ul>	✓
302-3	Energy intensity	<ul style="list-style-type: none"> <li>Our organization-specific metric for energy intensity is called energy efficiency. We report on relative annual improvement in energy efficiency, compared with the base year (2014). Energy efficiency is measured as a ratio of net energy consumption and gross profit</li> <li>Note 7.2 Energy in The Novozymes Report 2017</li> </ul>	✓
302-4	Reduction in energy consumption	<ul style="list-style-type: none"> <li>We report reduction in energy consumption in terms of improvement in energy efficiency achieved (compared with 2014 baseline) as this is more relevant to us</li> <li>Environmental data in The Novozymes Report 2017</li> <li>Note 7.2 Energy in The Novozymes Report 2017</li> </ul>	(✓)
<b>GRI 303: Water</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.3 Water in The Novozymes Report 2017</li> </ul>	✓
303-1	Water withdrawal by source	<ul style="list-style-type: none"> <li>Novozymes reports water withdrawal by type (such as drinking water, industrial water and steam), but does not disclose withdrawal by source</li> <li>Note 7.3 Water in The Novozymes Report 2017</li> </ul>	(✓)
303-3	Water recycled and reused	<ul style="list-style-type: none"> <li>Note 7.3 Water in The Novozymes Report 2017</li> </ul>	(✓)

## Topic-Specific Disclosures

# Environmental (continued)

GRI STANDARD/DISCLOSURE	REFERENCES AND COMMENTS	REPORTING EXTENT	
<b>GRI 305: Emissions</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> </ul>	✓
305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> <li>Our disclosure on emissions adheres to Novozymes' accounting policies and follows an operational control approach</li> <li>Novozyymes' disclosure on biogenic emissions can be found in our response to the CDP Investor questionnaire on <a href="http://www.cdp.net">www.cdp.net</a></li> </ul>	✓
305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> <li>Our disclosure on emissions adheres to Novozymes' accounting policies and follows an operational control approach</li> </ul>	✓
305-3	Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> </ul>	(✓)
305-4	GHG emissions intensity	<ul style="list-style-type: none"> <li>Our organization-specific metric for GHG emission intensity is called CO2 intensity. We report on relative annual improvement in CO2 intensity, compared with the base year (2014)</li> <li>Environmental performance in The Novozymes Report 2017</li> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> </ul>	✓
305-5	Reduction in GHG emissions	<ul style="list-style-type: none"> <li>Note 7.1 Climate change in The Novozymes Report 2017</li> <li>Environmental performance in The Novozymes Report 2017</li> </ul>	✓
<b>GRI 306: Effluents and Waste</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.3 Water in The Novozymes Report 2017</li> <li>Note 7.4 Waste in The Novozymes Report 2017</li> </ul>	✓
306-1	Total water discharge by quality and destination	<ul style="list-style-type: none"> <li>Novozyymes does not report on the quality of the water or the treatment methods, because different sites apply different treatment methods and measures based on local requirements</li> <li>Note 7.3 Water in The Novozymes Report 2017</li> </ul>	(✓)

## Topic-Specific Disclosures

# Environmental (continued)

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
306-2	Waste by type and disposal method	<ul style="list-style-type: none"> <li>Environmental performance in The Novozymes Report 2017</li> <li>Note 7.4 Waste in The Novozymes Report 2017</li> <li>The waste disposal method is site specific and determined in line with local requirements</li> </ul>	✓
306-3	Significant spills	<ul style="list-style-type: none"> <li>There were no significant spills in 2017</li> </ul>	✓
<b>GRI 307: Environmental Compliance</b>			
307-1	Non-compliance with environmental laws and regulations	<ul style="list-style-type: none"> <li>Novozymes did not receive any significant fines or nonmonetary sanctions related to noncompliance with environmental laws and regulations in 2017</li> <li>Environmental performance in The Novozymes Report 2017</li> <li>Note 7.5 Environmental compliance, etc. in The Novozymes Report 2017</li> </ul>	✓
<b>GRI 308: Supplier Environmental Assessment</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.6 Responsible sourcing in The Novozymes Report 2017</li> </ul>	✓
308-1	New suppliers that were screened using environmental criteria	<ul style="list-style-type: none"> <li>Note 8.6 Responsible sourcing in The Novozymes Report 2017</li> </ul>	(✓)



## Topic-Specific Disclosures

# Social

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 401: Employment</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	✓
401-1	New employee hires and employee turnover	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights and Note 2.3 Employees in The Novozymes Report 2017</li> <li>Social and governance performance in The Novozymes Report 2017</li> <li>Site data in The Novozymes Report 2017</li> </ul>	(✓)
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	<ul style="list-style-type: none"> <li>Employee benefits, including life insurance, healthcare, disability/invalidity coverage, maternity/paternity leave, retirement provision and others are provided to full-time employees of Novozymes as a minimum, as required by law. Temporary and part-time employees (including interns) are entitled to a number of employee benefits, as per the national regulations and industry standards of the regions in which we operate</li> </ul>	✓
<b>GRI 403: Occupational Health and Safety</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.2 Occupational health &amp; safety in The Novozymes Report 2017</li> </ul>	✓
403-2	Type and rates of injuries, occupational diseases, lost days and absenteeism, and total number of work-related fatalities	<ul style="list-style-type: none"> <li>Note 8.2 Occupational health &amp; safety in The Novozymes Report 2017</li> <li>Site data in The Novozymes Report 2017</li> </ul>	(✓)
<b>GRI 404: Training and Education</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	✓
404-2	Programs for upgrading employee skills and transition assistance programs	<ul style="list-style-type: none"> <li>Targets: ENABLE in The Novozymes Report 2017</li> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	(✓)

Topic-Specific Disclosures

# Social (continued)

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 405: Diversity and Equal Opportunity</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	✓
405-1	Diversity of governance bodies and employees	<ul style="list-style-type: none"> <li>Novozyymes reports on percentage of women by job category, but not on minority groups because registration of ethnic origin is illegal in many of the regions in which we operate</li> <li>Competency profile of the Board of Directors on Novozymes.com</li> <li>Note 2.3 Employees in The Novozymes Report 2017</li> <li>Target: ENABLE in The Novozymes Report 2017</li> <li>Corporate governance in The Novozymes Report 2017</li> </ul>	(✓)
<b>GRI 407: Freedom of Association and Collective Bargaining</b>			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	<ul style="list-style-type: none"> <li>Novozyymes recognizes the right to organize and negotiate. This has led to various arrangements in countries where this right is not recognized in local legislation. Novozymes supports employees' rights to join associations and bargain collectively, but we do not register employees' memberships of unions, since this is illegal in several of the countries in which we operate.</li> <li>Position paper on Human rights and labor standards on Novozymes.com</li> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	(✓)
<b>GRI 408: Child Labor</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	✓
408-1	Operations and suppliers identified at significant risk for incidents of child labor	<ul style="list-style-type: none"> <li>Position paper on Human rights and labor standards on Novozymes.com</li> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	(✓)

Topic-Specific Disclosures

# Social (continued)

GRI STANDARD/DISCLOSURE		REFERENCES AND COMMENTS	REPORTING EXTENT
<b>GRI 409: Forced and Compulsory Labor</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	✓
409-1	Operations and suppliers identified at significant risk for incidents of forced or compulsory labor	<ul style="list-style-type: none"> <li>Position paper on Human rights and labor standards on Novozymes.com</li> <li>Note 8.1 Labor practices &amp; human rights in The Novozymes Report 2017</li> </ul>	(✓)
<b>GRI 413: Local Communities</b>			
413-1	Operations with local community engagement, impact assessments and development programs	<ul style="list-style-type: none"> <li>Novozymes does not report quantitatively on this indicator. However, we have programs implemented with local communities in regions of significant operations</li> <li>Note 8.4 Community engagement in The Novozymes Report 2017</li> <li>ESG integration on Novozymes.com</li> <li>Strategic social investment in Novozymes' UNGC Communication on Progress 2017</li> </ul>	(✓)
<b>GRI 414: Supplier Social Assessment</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 8.6 Responsible sourcing in The Novozymes Report 2017</li> </ul>	✓
414-1	New suppliers that were screened using social criteria	<ul style="list-style-type: none"> <li>Note 8.6 Responsible sourcing in The Novozymes Report 2017</li> <li>Position paper on responsible sourcing on Novozymes.com</li> </ul>	(✓)

# Social (continued)

GRI STANDARD/DISCLOSURE	REFERENCES AND COMMENTS	REPORTING EXTENT	
<b>GRI 416: Customer Health and Safety</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.7 Product stewardship in The Novozymes Report 2017</li> </ul>	✓
416-1	Assessment of health and safety impacts of products and services	<ul style="list-style-type: none"> <li>100% of our significant product and service categories are assessed for health and safety impacts</li> <li>Novozymes' Quality and Product Safety Policy on Novozymes.com</li> <li>Enzyme and safety on Novozymes.com</li> <li>ESG integration on Novozymes.com</li> <li>Safety material on Novozymes TV</li> </ul>	✓
<b>GRI 417: Marketing and Labeling</b>			
103	Management approach disclosures	<ul style="list-style-type: none"> <li>Note 7.7 Product stewardship in The Novozymes Report 2017</li> </ul>	✓
417-1	Requirements for product and service information and labeling	<ul style="list-style-type: none"> <li>100% of our significant product and service categories are covered by and assessed for compliance with labeling and regulatory requirements</li> <li>Regulatory compliance on Novozymes.com</li> </ul>	✓

# Non-financial site data

## **Novozymes' sites**

Site Araucária, Brazil  
Site Bagsvaerd, Denmark  
Site Beijing, China  
Site Blair, USA  
Site Franklinton, USA  
Site Fuglebakken, Denmark  
Site Hongda, China  
Site Hosur, India  
Site Kalundborg, Denmark  
Site Milwaukee, USA  
Site Nottingham, UK  
Site Ottawa, Canada  
Site Pilar, Argentina  
Site Salem, USA  
Site Saskatoon, Canada  
Site Shenyang, China  
Site Tianjin, China



# Site Araucária, Brazil

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	144	138
Energy	1,000 GJ	126	128
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	82	88
<b>Biomass</b>			
Biomass volume	1,000 tons	33	30
<b>Waste</b>			
Waste	1,000 tons	1	1
Percentage of total waste recycled	%	97.9	99.1
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	3	4
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	3	2
Neighbor complaints	no.	-	-

## Site Araucária, Brazil (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	244	235
Women	%	34.4	37.0
Men	%	65.6	63.0
Rate of employee turnover	%	11.9	9.3
Average age	years	37.9	37.8
Average seniority	years	8.4	8.6
Rate of absence	%	0.8	0.7
<b>Training costs</b>			
Average spent per employee	DKK	3,111	4,288

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	2	2
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	4.8	4.6
Frequency of occupational diseases	per million working hours	-	-

# Site Bagsvaerd, Denmark

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	119	124
Energy	1,000 GJ	261	261
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	112	113
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	3	2
Percentage of total waste recycled	%	20.3	27.7
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	7	7
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	1	3
Neighbor complaints	no.	1	-

## Site Bagsvaerd, Denmark (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	1,809	1,828
Women	%	50.4	50.3
Men	%	49.6	49.7
Rate of employee turnover	%	10.7	12.0
Average age	years	43.8	43.8
Average seniority	years	11.0	11.0
Rate of absence	%	2.9	2.6
<b>Training costs</b>			
Average spent per employee	DKK	4,211	4,412

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	3	9
Occupational diseases	no.	-	1
Frequency of occupational accidents	per million working hours	1.1	3.1
Frequency of occupational diseases	per million working hours	-	0.3

# Site Beijing, China

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	19	19
Energy	1,000 GJ	19	18
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	14	14
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	-	-
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	3	3
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	1	-
Neighbor complaints	no.	-	-

## Site Beijing, China (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	275	316
Women	%	60.4	57.6
Men	%	39.6	42.4
Rate of employee turnover	%	25.0	12.5
Average age	years	36.3	35.5
Average seniority	years	6.8	6.2
Rate of absence	%	0.9	0.6
<b>Training costs</b>			
Average spent per employee	DKK	1,698	3,211

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	1	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	2.0	-
Frequency of occupational diseases	per million working hours	-	-



# Site Blair, USA

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	825	716
Energy	1,000 GJ	467	425
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	611	526
<b>Biomass</b>			
Biomass volume	1,000 tons	13	10
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	18.4	20.7
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	60	61
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Blair, USA (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	125	120
Women	%	17.6	21.7
Men	%	82.4	78.3
Rate of employee turnover	%	26.8	15.5
Average age	years	37.6	38.1
Average seniority	years	3.1	3.3
Rate of absence	%	2.6	2.4
<b>Training costs</b>			
Average spent per employee	DKK	2,420	2,795

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

# Site Franklinton, USA

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	1,618	1,568
Energy	1,000 GJ	853	818
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	1,156	1,127
<b>Biomass</b>			
Biomass volume	1,000 tons	366	345
<b>Waste</b>			
Waste	1,000 tons	2	2
Percentage of total waste recycled	%	29.8	31.3
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	60	58
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	2	1
Neighbor complaints	no.	1	1

## Site Franklinton, USA (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	711	719
Women	%	33.3	32.5
Men	%	66.7	67.5
Rate of employee turnover	%	12.6	10.3
Average age	years	41.9	42.2
Average seniority	years	8.5	8.5
Rate of absence	%	1.8	1.8
<b>Training costs</b>			
Average spent per employee	DKK	4,320	4,250

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	1	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	0.8	-
Frequency of occupational diseases	per million working hours	-	-

# Site Fuglebakken, Denmark

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	428	421
Energy	1,000 GJ	353	337
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	293	279
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	67.5	67.4
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	7	8
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	7	8
Neighbor complaints	no.	7	2

# Site Fuglebakken, Denmark (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	187	202
Women	%	17.6	16.3
Men	%	82.4	83.7
Rate of employee turnover	%	2.7	7.8
Average age	years	47.3	46.9
Average seniority	years	14.8	14.0
Rate of absence	%	4.0	3.8
<b>Training costs</b>			
Average spent per employee	DKK	3,809	3,499

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	1	2
Occupational diseases	no.	1	2
Frequency of occupational accidents	per million working hours	3.2	6.1
Frequency of occupational diseases	per million working hours	3.2	6.1



# Site Hongda, China

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	849	739
Energy	1,000 GJ	622	501
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	524	498
<b>Biomass</b>			
Biomass volume	1,000 tons	18	19
<b>Waste</b>			
Waste	1,000 tons	1	1
Percentage of total waste recycled	%	41.3	41.9
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	116	97
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	1	-
Neighbor complaints	no.	-	2

## Site Hongda, China (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	268	257
Women	%	16.4	16.3
Men	%	83.6	83.7
Rate of employee turnover	%	11.0	6.6
Average age	years	39.9	39.4
Average seniority	years	10.8	10.7
Rate of absence	%	1.2	0.7
<b>Training costs</b>			
Average spent per employee	DKK	211	711

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

# Site Hosur, India

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	56	25
Energy	1,000 GJ	23	12
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	38	18
<b>Biomass</b>			
Biomass volume	1,000 tons	3	1
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	21.3	17.9
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	4	2
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Hosur, India (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	574	563
Women	%	26.1	25.9
Men	%	73.9	74.1
Rate of employee turnover	%	17.8	14.6
Average age	years	34.6	34
Average seniority	years	4.7	4.9
Rate of absence	%	1.7	1.6
<b>Training costs</b>			
Average spent per employee	DKK	1,089	1,297

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	1
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	0.9
Frequency of occupational diseases	per million working hours	-	-

# Site Kalundborg, Denmark

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	2,459	2,246
Energy	1,000 GJ	1,209	1,149
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	2,120	1,919
<b>Biomass</b>			
Biomass volume	1,000 tons	138	122
<b>Waste</b>			
Waste	1,000 tons	4	4
Percentage of total waste recycled	%	63.0	64.0
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	38	36
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	2	8
Neighbor complaints	no.	1	3

## Site Kalundborg, Denmark (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	635	630
Women	%	24.7	24.4
Men	%	75.3	75.6
Rate of employee turnover	%	5.3	7.8
Average age	years	45.3	44.9
Average seniority	years	12.6	12.2
Rate of absence	%	3.9	3.4
<b>Training costs</b>			
Average spent per employee	DKK	2,430	1,939

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	8	6
Occupational diseases	no.	1	2
Frequency of occupational accidents	per million working hours	7.9	6.1
Frequency of occupational diseases	per million working hours	1.0	2.0



# Site Milwaukee, USA

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	29	37
Energy	1,000 GJ	18	17
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	2	1
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	14.4	7.3
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	2	2
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Milwaukee, USA (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	59	59
Women	%	32.2	33.9
Men	%	67.8	66.1
Rate of employee turnover	%	10.3	17.7
Average age	years	43.1	44.1
Average seniority	years	9.0	9.9
Rate of absence	%	2.2	1.7
<b>Training costs</b>			
Average spent per employee	DKK	1,404	2,607

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	1
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	9.1
Frequency of occupational diseases	per million working hours	-	-

# Site Nottingham, UK

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	40	31
Energy	1,000 GJ	17	16
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	40	31
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	37.5	26.6
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	2	1
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Nottingham, UK (continued)

		2017*	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	n.a.	88
Women	%	n.a.	37.5
Men	%	n.a.	62.5
Rate of employee turnover	%	1.0	2.4
Average age	years	n.a.	46.9
Average seniority	years	n.a.	12.1
Rate of absence	%	2.4	2.0
<b>Training costs</b>			
Average spent per employee	DKK	7,162	8,359

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

\* In December 2017, Novozymes divested Albumedix, its stand-alone pharma entity which was separated from Novozymes in 2016. As a consequence, numbers pertaining to status as of December 31, 2017 are not available.

# Site Ottawa, Canada

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	140	94
Energy	1,000 GJ	90	78
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	155	86
<b>Biomass</b>			
Biomass volume	1,000 tons	11	7
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	17.8	7.1
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	3	2
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	2	10
Neighbor complaints	no.	-	-

## Site Ottawa, Canada (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	56	49
Women	%	21.4	24.5
Men	%	78.6	75.5
Rate of employee turnover	%	7.2	10.3
Average age	years	42.5	42.5
Average seniority	years	8.7	10.0
Rate of absence	%	1.3	1.4
<b>Training costs</b>			
Average spent per employee	DKK	2,393	1,739

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	1	-
Occupational diseases	no.	-	3
Frequency of occupational accidents	per million working hours	10.3	-
Frequency of occupational diseases	per million working hours	-	33.4



# Site Pilar, Argentina

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	30	34
Energy	1,000 GJ	9	12
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	32	36
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	31.0	70.0
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	1	1
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Pilar, Argentina (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	70	76
Women	%	28.6	25.0
Men	%	71.4	75.0
Rate of employee turnover	%	11.7	2.6
Average age	years	38.1	39.0
Average seniority	years	5.0	4.1
Rate of absence	%	2.0	1.8
<b>Training costs</b>			
Average spent per employee	DKK	2,227	1,462

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

# Site Salem, USA

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	59	58
Energy	1,000 GJ	84	86
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	55	55
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	20.6	16.8
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	7	7
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	4
Neighbor complaints	no.	-	1

## Site Salem, USA (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	123	134
Women	%	28.5	28.4
Men	%	71.5	71.6
Rate of employee turnover	%	14.4	16.4
Average age	years	43.6	43.6
Average seniority	years	9.9	9.8
Rate of absence	%	1.9	1.5
<b>Training costs</b>			
Average spent per employee	DKK	2,757	2,013

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

# Site Saskatoon, Canada

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	74	33
Energy	1,000 GJ	16	20
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	71	29
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	1
Percentage of total waste recycled	%	0.2	-
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	2	2
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Saskatoon, Canada (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	84	85
Women	%	40.5	42.4
Men	%	59.5	57.6
Rate of employee turnover	%	7.2	7.3
Average age	years	42.4	41.6
Average seniority	years	8.1	7.3
Rate of absence	%	1.4	1.9
<b>Training costs</b>			
Average spent per employee	DKK	732	5,634

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-



# Site Shenyang, China

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	2	3
Energy	1,000 GJ	3	3
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	2	2
<b>Biomass</b>			
Biomass volume	1,000 tons	-	-
<b>Waste</b>			
Waste	1,000 tons	-	-
Percentage of total waste recycled	%	25.3	51.9
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	1	1
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	-	-
Neighbor complaints	no.	-	-

## Site Shenyang, China (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	30	34
Women	%	20.0	14.7
Men	%	80.0	85.3
Rate of employee turnover	%	25.7	5.6
Average age	years	35.3	34.9
Average seniority	years	7.9	6.9
Rate of absence	%	0.1	0.3
<b>Training costs</b>			
Average spent per employee	DKK	323	160

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	-
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	-
Frequency of occupational diseases	per million working hours	-	-

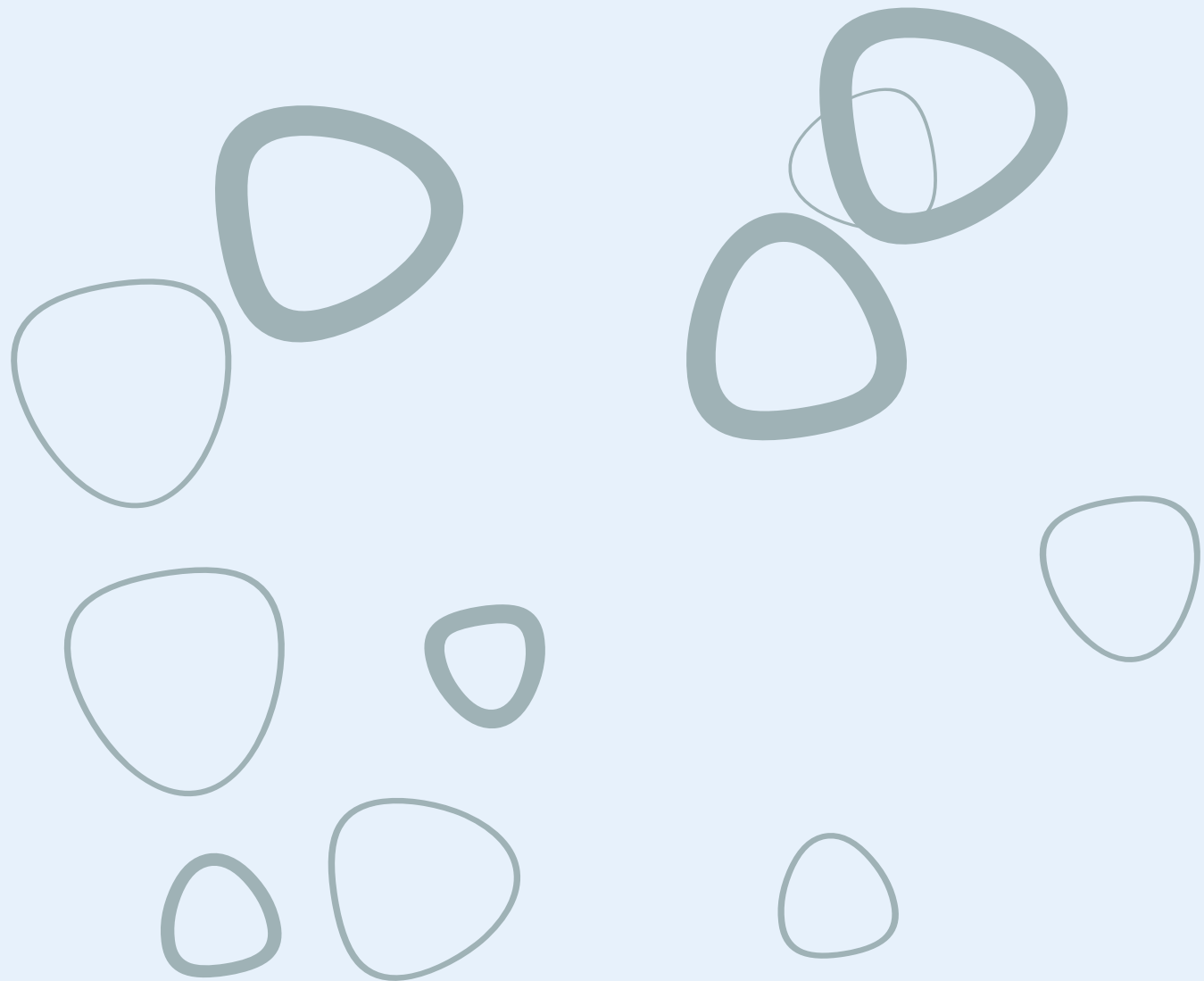
# Site Tianjin, China

		2017	2016
<b>ENVIRONMENT</b>			
<b>Consumption of resources</b>			
Water	1,000 m <sup>3</sup>	1,215	939
Energy	1,000 GJ	591	500
<b>Wastewater</b>			
Volume	1,000 m <sup>3</sup>	876	569
<b>Biomass</b>			
Biomass volume	1,000 tons	20	17
<b>Waste</b>			
Waste	1,000 tons	2	2
Percentage of total waste recycled	%	45.5	46.1
<b>Environmental impact of emissions</b>			
Global warming	1,000 tons CO <sub>2</sub> -eqv.	94	82
<b>Environmental compliance</b>			
Breaches of regulatory limits	no.	5	1
Neighbor complaints	no.	2	-

## Site Tianjin, China (continued)

		2017	2016
<b>SOCIAL</b>			
<b>Employee statistics</b>			
Employees, total	no.	520	513
Women	%	36.0	36.1
Men	%	64.0	63.9
Rate of employee turnover	%	8.4	4.2
Average age	years	36.7	36.1
Average seniority	years	9.8	9.2
Rate of absence	%	0.7	0.9
<b>Training costs</b>			
Average spent per employee	DKK	994	1,113

		2017	2016
<b>HEALTH AND SAFETY</b>			
<b>Occupational accidents and diseases</b>			
Accidents with absence	no.	-	2
Occupational diseases	no.	-	-
Frequency of occupational accidents	per million working hours	-	2.1
Frequency of occupational diseases	per million working hours	-	-



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