HALDOR TOPSØE

Making **optimal** performance possible

Annual Report 2018

Topsoe is a world leader in heterogeneous catalysis, committed to helping our customers achieve optimal performance – getting the most out of their processes and products, using the least possible energy and resources.

We provide project development and investments and supply high-performance catalysts, proprietary technologies, process design, engineering, and services for use in the chemical and oil & gas industries, and we are at the forefront of developing sustainable technologies.

Our solutions address pressing global challenges by improving energy efficiency, enhancing food production for the world's growing population, and protecting our environment

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Letter from the Chairman

Consolidation and **strong results**

Haldor Topsoe delivered record results in 2018. Order intake during the year was significantly higher than in 2017. Catalyst revenue improved in 2018 in both of Topsoe's core business areas, chemical industry and refining. Growth in the chemicals area was also driven by revenue from a number of large technology projects that were successfully completed in 2018.

The results achieved in 2018 are very satisfactory.

Investor process

In 2018, the Topsøe family – as sole owners of Haldor Topsoe A/S through Haldor Topsøe Holding A/S – took the very important decision to start a process of searching for a suitable financial partner to buy a significant minority stake in the company with a long-term intention to list the company's shares on the stock exchange. In March 2019, the process was concluded as an agreement was signed with the global investment company Temasek. The family has decided that a major part of the proceeds from this transaction will be used to accelerate growth initiatives – both organically and through acquisitions.

The Board is convinced that long-term majority shareholders combined with active minority shareholders is a strong ownership structure.

Sustainable future

Topsoe is rooted in decades of fundamental and applied research & development. This has made the company one of the world's leading providers of catalyst and technology in its core business areas. Topsoe's comprehensive knowledge of heterogeneous catalysts and complex catalytic processes means that the company can continuously introduce cutting-edge solutions.

Additional capital from an investor will support the company in exploiting its strong R&D platform to achieve accelerated growth in existing as well as new business areas.

Most of the processes and products that Topsoe works with today are based on fossil fuels, and fossil fuels will remain very important for a long time. As long as oil and gas constitute the foundation of the global economy, Topsoe will continue to help customers use fossil resources in the most responsible, environmentally friendly, and efficient manner possible.

In order to make alternative energy resources – such as biomass, wind and solar – an economical and sustainable alternative to fossil fuels, new chemical technologies must be developed. Topsoe's ambition is to leverage its unique competencies to position the company as a leading technology driver in selected strategic areas and gradually transform Topsoe's offerings for a fossil-free future.

Topsoe is already well progressed in the development of several promising sustainable chemical technologies. Topsoe continuously seeks to get the maximum benefit from the company's unmatched technical capabilities and a first-mover advantage in the market for sustainable solutions.

Highlights of the year

Every year, the Board visits one of Topsoe's regional offices. In 2018, we visited the Bahrain office and met customers from the region who expressed their deep appreciation of the long lasting cooperation with Topsoe. We were happy to reaffirm our deep-rooted belief that the customers' needs must always be on the top of the agenda for everybody in Topsoe in order for us to succeed. On the same occasion, it was a great pleasure to meet some of Topsoe's dedicated and passionate employees in the global organization.

Innovation is one of Topsoe's core values and forms the backbone of the company's business. In December, the Board's Innovation Committee awarded the Topsoe Legacy Prize for the first time. The prize celebrates outstanding innovations that have left an unmistakable mark on Topsoe's business, and it reminds us all why innovation is vital for the sustainable development of not only the company but of the world. This time, the award was given to the teams behind BRIM® refining catalysts and the SynCOR™ technology for world-scale production of syngas, methanol, and ammonia.

A positive outlook

2018 has been a year of significant growth and many positive developments. However, the year was also characterized by geopolitical and macroeconomic uncertainty, which seems to continue into 2019. Naturally, this is a concern for a global company like Topsoe, but the Board remains positive in our view on the long-term business opportunities.

On behalf of the Board of Directors, I would like to thank the Executive Committee and all of Topsoe's employees for their excellent work and contribution in the past year.

Jeppe Christiansen
Chairman of the Board of Directors

"Capital from an investor will support the company in exploiting its strong R&D platform to achieve accelerated growth."

Letter from the CEO

Excellent results, strong market position

Continuing operations DKK million	2018	2017	Change 2017-2018
Revenue	5,617	5,011	12%
EBITDA	964	852	13%
EBIT	708	595	19%
Profit from continuing operations	**507**	**403**	**25%**
Loss from discontinuing operations	-16	-422	
Net profit	491	-19	
Lost time accident frequency (per one million work hours)	3.1	6.3	
R&D spend (of revenue)	9.0%	9.4%	

2018 was a very good year for Topsoe. EBIT from the continuing business increased by 19%. Catalyst revenue increased by 13%, and technology revenue by 9%.

Significant project deliveries to the Middle East had a positive impact on the results. Results were also positively influenced by our efforts to introduce innovative products and focus on customer needs, which have strengthened our global market leadership in several premium business segments.

The increased revenue and net profit were already reflected in a significant improvement of cash flows from operating activities.

During 2018, the order book has increased. We have been awarded a large number of new licenses in the Chemical Business Unit, and we have seen strong order book growth in the Refinery Business Unit.

The 2018 results are very satisfactory, as they reflect a healthy core business based on our market leadership in both the refinery and chemical business areas.

Global politics

Despite political unrest and trade sanctions, which in many cases have made our customers postpone large technology investments, we see signs of growth in our technology business in the coming years.

In November 2018, we took the business decision to close down our commercial activities in Iran, which - together with the need to secure efficiency gains related to the divestment of our automotive and stationary DeNOx business areas in 2017 - unfortunately made it necessary to lay off about 140 good colleagues.

Sustainable solutions

In 2018, Topsoe developed and commercialized several solutions that show great promise as sustainable alternatives to traditional solutions based on fossil fuels.

We are proud to develop solutions that tackle some of the world's most pressing challenges: reducing CO_2 emissions, improving air quality, and the production of clean fuels and renewable chemicals.

Our sustainable solutions are in all stages of the development pipeline. Two examples of promising new solutions that are being commercialized now are the MOSAIK™ process to produce chemicals from biomass, and GECCO™, a solution for upgrading landfill gas to pipeline-quality gas.

Strategic focus points

Through a significant companywide focus on safety in 2018, we reduced the number of lost time accidents (LTAs) by more than 50% to a level considered best-in-class. Fortunately, the severity of the accidents occurred have generally been low, as almost all accidents have only led to very few days of absence.

We continued our development within digitalization and established a platform for training and execution of machine learning models. Initial proof-of-concept studies are very encouraging and suggest that such advanced analytics tools can substantially improve our service offerings to customers.

We also maintained our high level of investment in research and development of 9% of revenue, and we have invested in production efficiency and boosted capacity for some of our core products.

During the year we introduced several innovative products. One example is SynCOR Methanol™ which is a new and competitive solution for very large methanol plants. Another important new product is the TK-6001 HySwell™ catalyst, which offers refiners top-class activity in hydrocracking and the production of ultra-low sulfur diesel.

Organizational developments
In mid-2018, we reorganized our sales efforts in order to give customers one single point of contact. Also, sales staff were empowered to improve customer experience and bottom line growth.

In August, we took full ownership of Topsoe Project Development, previously a joint venture with a German partner under the name Ferrostaal Topsoe Projects. Topsoe Project Development offers customers highly specialized services within financing and project development. This is an important factor in bringing Topsoe technologies into play in the earliest phases of our customers' projects.

Topsoe Project Development is located in a new Topsoe office in Essen, Germany. We also opened an office in Jakarta, Indonesia, to be closer to our customers in this important market.

In February, Amy Hebert joined Topsoe as Deputy CEO and Executive Vice President, Chemicals. Ms. Hebert has broad experience from top executive positions with global catalyst companies serving the petrochemical and refining industries.

Growth ahead
In March 2019, we concluded the process of identifying a minority investor, preparing the way for an initial public offering (IPO). I look very much forward to the collaboration with our new financial partner, Temasek, and beginning the next phase of this vital project which will give access to the capital market, thus enabling us to invest in acquisitions as well as organic growth.

I want to thank our customers and partners for excellent collaboration in the past year. I would also like to thank the Board of Directors for fruitful collaboration. Finally, I would like to thank Topsoe's employees, who have made an exceptional effort in 2018.

Bjerne S. Clausen
President & Chief Executive Officer

"The 2018 results are very satisfactory, as they reflect a healthy core business."

Topsoe solutions address **global megatrends**

Our catalytic solutions help tackle some of the most pressing challenges of our time within food supplies, energy, and pollution control.

Enhancing food production

Topsoe's catalysts and technologies are used globally in the production of ammonia for fertilizers. Fertilizers increase productivity in agriculture and are absolutely necessary to feed the current world population.

Environmental protection

Topsoe offers a variety of solutions for producing clean fuels and removing sulfur, nitrogen oxides, and hazardous particles from industrial emissions. Clean air is essential for good health and the environment, not least in the large cities of the world.

Energy efficiency

All Topsoe solutions are designed for optimal energy efficiency to save fuel and reduce CO_2 emissions. Topsoe also provides technologies for producing renewable fuels that can replace traditional feedstocks.

Why is catalysis important?

- A catalytic process converts one chemical component into another. For instance, hydrogen and nitrogen can be catalyzed into ammonia for fertilizer.
- Using a catalyst to produce a chemical process speeds up the reaction and allows it to take place under less severe conditions, which consumes much less energy. Production yield increases, and resources are saved.
- Catalytic processes are indispensable in industry today – and will also be vital for the production of sustainable energy and products in the future.
- Without catalysis, we would not have enough gasoline, plastic, polyester, artificial fertilizer, and countless other products to cover our needs.

TK-930 D-wax™ catalyst
Renewable diesel helps reduce consumption of crude oil and benefits the climate by reducing CO_2 emissions. Catalysts are essential in the production of renewable diesel, and Topsoe is a world leader in this field. In 2018, we introduced the TK-930 D-wax™ dewaxing catalyst. Without this type of catalyst, most renewable diesel would be solid at 20°C and useless as motor fuel. TK-930 D-wax™ solves the problem in a more efficient way than standard catalysts. It can also be used for traditional diesel and jet fuel.

Company **snapshot**

Haldor Topsoe is a world leader in high-performance catalysts and proprietary technologies for the chemical and refining industries. Since the company was founded in 1940, it has been active in research, development, manufacturing, marketing, sale and service of catalysts, technology, and catalytic processes.

Topsoe is a market leader in several high value-add segments, including hydroprocessing, hydrocracking, sulfur and NO_x emissions management, and hydrogen (Refinery Business Unit), and ammonia, methanol, sulfuric acid, syngas, and gas-to-liquids (Chemical Business Unit).

Decades of focused fundamental and applied R&D activities have provided Topsoe with the most comprehensive knowledge worldwide of heterogeneous catalysts and catalytic processes for the chemical and refining markets. 9-10% of revenue is consistently reinvested in R&D. As a science-based company, we are able to continuously introduce cutting-edge technological solutions.

In recent years, Topsoe's Sustainable Business Unit has commercialized technologies such as TIGAS™ (gasoline from natural gas), catalytic filters, cold desulfurization, oxo-alcohols, viscose off-gas treatment, and propane and butane hydrogenation. The unit has a very strong pipeline of new business opportunities within landfill-to-gas, landfill-to-power, battery materials, bio-based chemicals and more.

The Topsoe **ambition**

Haldor Topsoe will continue to help its customers use fossil resources in the most responsible, environmentally friendly, and efficient manner possible.

In parallel, we intend to be a driving force in enabling a sustainable chemical and energy industry to secure the future of our planet. New chemical technologies must be developed to make alternative energy resources – such as biomass, wind, and solar – an economical and sustainable alternative to fossil fuels.

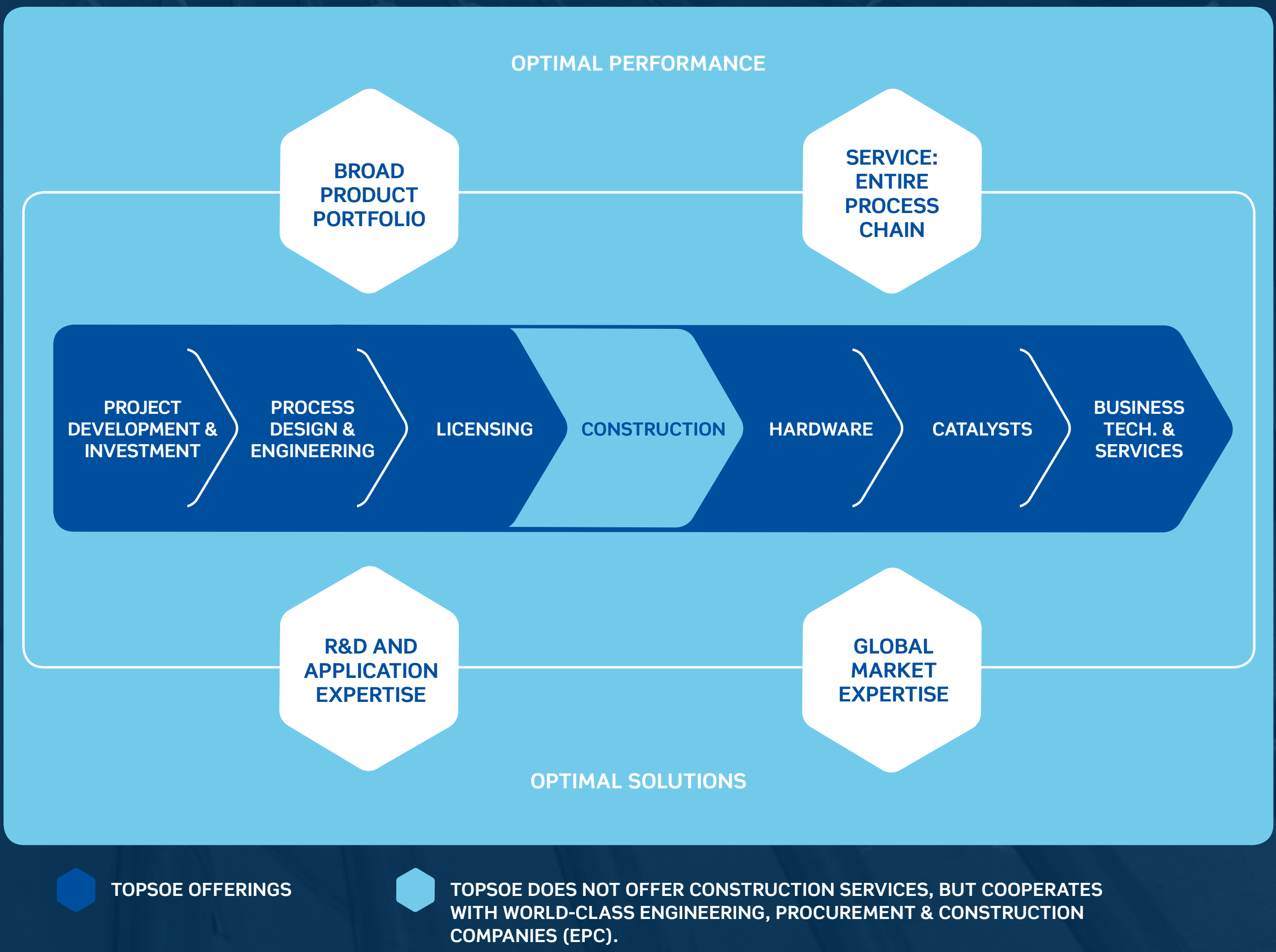
Topsoe's leading and comprehensive catalytic and technical competencies put the company in a unique position to shape this future market and make a positive difference in the world.

Making **optimal** performance possible

Our customers are under constant pressure to get more from less and even the smallest performance improvements are important. In Topsoe, we respond to customer challenges, using our exceptional insight into catalysis and technology to deliver unique, integrated solutions that secure optimal performance for our customers across the value chain.

Business model

Topsoe has a solutions-focused business model covering the full value chain, based on unique chemical engineering competences.



Highlights

January

Topsoe chosen as technology licensor for the world's largest methanol facility
IGP Methanol LLC awarded Haldor Topsoe a contract for engineering of a methanol plant that will produce 1.8 million tons per year. The plant is part of a planned complex with a total production capacity of 7.2 million tons per year in Plaquemines Parish, Louisiana, in the U.S. Topsoe's SynCOR Methanol™ technology will be a core element of the project.

https://blog.topsoe.com/topsoe-chosen-as-technology-licensor-of-the-worlds-largest-methanol-facility

February

Haldor Topsoe and JITRI founded joint R&D company to accelerate development of innovative technologies for the Chinese market
The joint company focuses on applied research and fast commercialization of new technologies, e.g. more cost-effective NCA batteries for electric cars. The company will also function as a test facility for Topsoe's Chinese customers within hydroprocessing and emissions management.

https://blog.topsoe.com/haldor-topsoe-and-jitri-found-joint-rd-company-to-accelerate-development-of-innovative-technologies-for-chinese-market

February

Successful start-up of the world's largest wet gas sulfuric acid (WSA) plant
The WSA plant treats 131,000 tons of acid gas per year from a neighboring world-scale refinery in Huizhou, China. The patented WSA process converts more than 99.9% of the sulfur in the off-gases into commercial grade sulfuric acid.

https://blog.topsoe.com/successful-start-up-of-worlds-largest-wet-gas-sulfuric-acid-wsa-plant

July

Sinopec chose Topsoe CATOX catalyst for Asia's largest styrene-butadiene rubber emissions control project
Sinopec Qilu Petrochemical Corporation chose Topsoe's CATOX catalyst for cost-efficient control of volatile organic compounds (VOC) in emissions from their rubber plant in Zibo, China.

https://blog.topsoe.com/sinopec-chooses-topsoe-catox-catalyst-for-asias-largest-styrene-butadiene-rubber-emissions-control-project

August

New orders cemented Topsoe's leading position in ammonia in India
TechnipFMC awarded Topsoe a contract for license and engineering of two 2,200 tons-per-day ammonia plants. The plants are part of the Indian government's revival plans for the domestic fertilizer sector. Three out of the four current fertilizer plant revival projects are based on Topsoe's ammonia technology.

https://blog.topsoe.com/new-orders-cement-topsoes-leading-position-in-ammonia-in-india

September

New catalyst helps sulfuric acid producers comply with emission standards without compromising on performance
A much higher catalytic activity of the new LEAP5™ catalyst offers sulfuric acid plant operators a significantly more effective way to achieve compliance with emissions standards without compromising on performance.

https://blog.topsoe.com/comply-with-emission-standards-without-compromising-on-performance

September

UCC Shchekinoazot launched methanol and ammonia co-production plant licensed by Haldor Topsoe
United Chemical Company Shchekinoazot inaugurated a methanol and ammonia co-production plant in the Tula region of Russia. The new plant can produce 450,000 tons of methanol and 135,000 tons of ammonia per year and is based on Topsoe's IMAP™ technology.

https://blog.topsoe.com/ucc-shchekinoazot-launches-methanol-and-ammonia-co-production-plant-licensed-by-haldor-topsoe

December

NOVATEK Group selected Topsoe hydrogen technology for their first refinery
LLC NOVATEK – Ust-Luga chose the Haldor Topsoe Convection Reformer (HTCR) for hydrogen production at their refinery in Ust-Luga, Russia, because of its minimal water consumption and small footprint. It also played a role that the modularized unit could be delivered fast.

https://blog.topsoe.com/novatek-group-selects-topsoe-hydrogen-technology-for-their-first-refinery

Topsoe around **the globe**

Customers all over the world are serviced by our regional offices. Topsoe's global organization also encompasses production plants and engineering activities.

HQ Headquarters

Production plants

Regional offices

Engineering

North America

Customers in the refining, chemical and petrochemical industries in North America show great interest in Topsoe's catalysts and technologies, making this our largest market. The shale gas boom has spurred significant interest in solutions that convert shale gas into high-value products. Our portfolio of hydroprocessing technologies such as hydrocracking and renewable fuels technologies are also in high demand.

We employ 75 people at our main office in Houston, US, and at our offices in Los Angeles, US, and Edmonton, Canada. At our production plant in Bayport near Houston, 120 employees produce around 15,000 tons of high-performance catalysts annually in the four production units.

Latin America

In 2018, customers in Colombia, Brazil, Chile, Peru and Argentina chose Topsoe's hydrotreating, hydrocracking and VK catalysts, cementing our high market share in the region. Topsoe was awarded the license and basic engineering for two grassroots hydrotreating projects in Argentina, a contract for hardware supply in Peru, and a contract for catalysts for six naphtha post-treatment units in Brazil.

Topsoe's engagement in Latin America continues to grow. Nine of the eleven hydrocrackers in Latin America use our catalysts, and customers continue to show great interest in our catalyst and technology solutions.

We employ 26 people at our offices in Buenos Aires, Rio de Janeiro and Mexico City.

Europe

HQ

Denmark is home to Topsoe's headquarters, where over 1,000 employees work in research & development, engineering, global sales, and support functions. The research conducted here has resulted in e.g. the LEAP5™ catalyst and the MOSAIK™ bio-based chemicals solution.

Topsoe's largest production facility is located in Frederikssund, Denmark. Here, more than 570 highly skilled operators and other employees manufacture a large variety of catalysts to very high quality standards.

In 2019, Topsoe opened an office in Essen, Germany. The 12 specialists employed here support Topsoe's customers in project development, structuring, and financing.

Russia and nearby countries

Russia and neighboring countries need solutions to capitalize on their rich oil and gas resources in an efficient way. This has led to a strong position for Topsoe's offerings, especially within gas monetization and in the refinery and fertilizer industries. Our catalyst and technology business has grown fast in recent years and represents a significant share of Topsoe's overall revenue.

Our Moscow office is the base for 65 employees who service Russia, Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Turkmenistan, Ukraine, and Uzbekistan. Topsoe has enjoyed close collaboration with the Russian industrial and scientific community for decades.

Middle East

Customers in the petrochemical and refining industries of the region focus on downstream integration. This requires Topsoe catalysts, technologies, and services that support core processes within methanol, ammonia, hydroprocessing, and hydrogen production. As fuel specifications and environmental regulations become more stringent, our hydroprocessing and environmental solutions see increasing demand. Topsoe also offers technology upgrades to improve energy efficiency and production yield.

In 2018, we opened an office in Khobar, Saudi Arabia, to strengthen our presence in this market.

13 people are employed at our offices in the Middle East, the majority at our office in Manama, Bahrain.

India

Indian ammonia plants use Topsoe catalysts to make the majority of all ammonia produced in the country. Their preference for Topsoe technology has also made us the largest supplier of hardware for the ammonia industry. In 2017-18, we have been selected as licensors for two fertilizer revival projects (Sindari and Barauni) and have invested in the Ramagundam ammonia plant – a flagship revival project.

We are also active in the Indian refinery market, especially within hydroprocessing, and Topsoe supports India's drive for cleaner fuels.

Our New Delhi regional office is the workplace for more than 200 people, including our engineering unit, IT competence center, and finance service center.

Southeast Asia

Southeast Asia has several emerging markets and is rich in natural resources that can be monetized using Topsoe technologies. More stringent environmental regulations will increase the demand for Topsoe's solutions, and we experience increasing demand for technology and catalysts for refinery and environmental solutions. Within ammonia and methanol there is an interest in revamping existing units for energy optimization and diversification purposes.

In 2018, we opened an office in Jakarta, Indonesia. Topsoe's office in Kuala Lumpur, Malaysia, supports our customers in the ASEAN countries as well as Bangladesh, Australia and New Zealand. 20 people are employed in the two offices.

China

The growth of independent refineries in China is very much driven by the country's increasing energy consumption and demand for oil products and downstream chemicals. This brings business opportunities for Topsoe's refinery catalysts and technologies, e.g. for hydrotreating and hydrocracking. Topsoe's sulfur management technologies still maintain a high market share due to higher emission standards. The stricter environmental legislation and the adjustment of the energy structure opens the market for Topsoe's chemical and sustainable technologies such as methanol catalyst, tar hydrotreating, and emission control filters.

Topsoe has 70 employees in China at our regional office in Beijing.

Accomplishments and **results**

Five-year summary

Below is a summary of the Group's financial highlights for the five most recent years.

Income statement [1]

DKK million	**2018**	**2017**	**2016**	**2015** [3]	**2014** [3]
Revenue	5,617	5,011	5,150	5,785	5,685
Gross profit	2,620	2,391	2,608	2,483	2,542
EBITDA	964	852	1,071	795	929
Depreciation and amortization	-256	-257	-260	-293	-366
EBIT	708	595	811	502	563
Net financial expenses etc.	-16	-66	-24	-40	14
Profit from continuing operations	507	403	545	322	440
Loss from discontinuing operations	-16	-422	-53	-	-
Net profit	491	-19	492	322	440

Balance sheet

DKK million	**2018**	**2017**	**2016**	**2015** [3]	**2014** [3]
Balance sheet total	5,664	6,189	7,161	7,194	6,455
Equity	1,286	1,664	2,238	2,003	1,831
Net working capital	447	668	610	451	540
Net interest bearing debt	756	855	1,191	1,152	1,016

Cash flow

DKK million	**2018**	**2017**	**2016**	**2015** [3]	**2014** [3]
Cash flows from operating activities	1,189	137	748	750	754
- Of which continuing operations	1,205	421	785	-	-
Cash flows from investing activities	-220	690	-386	-638	-585
- Of which investments in property, plant and equipment	-251	-211	-393	-589	-600
Cash flows from financing activities	-1,194	-586	-530	-99	-222
Change in cash and cash equivalents for the year	-230	201	-162	32	-14

Employees

Number	**2018**	**2017**	**2016**	**2015** [3]	**2014** [3]
Average number of employees	2,246	2,527	2,543	2,688	2,694

Ratios

%	**2018**	**2017**	**2016**	**2015** [3]	**2014** [3]
Gross margin [2]	46.6	47.7	50.6	42.9	44.7
EBITDA margin [2]	17.2	17.0	20.8	13.7	16.3
EBIT margin [2]	12.6	11.9	15.7	8.7	9.9
Return on invested capital (ROIC) [2]	26.2	22.4	33.8	16.0	20.1
Equity ratio	22.7	26.9	31.3	27.8	28.4
Return on equity	33.3	-1.0	23.2	16.8	25.3

The ratios have been prepared in accordance with the Recommendations & Financial Ratios produced by the Danish Finance Society and CFA Society Denmark.

[1] Income statements for 2016, 2017 and 2018 consist of continuing operations with discontinuing operations in a separate line

[2] Ratios for 2016, 2017 and 2018 apply to the continuing operations.

[3] Figures for 2014-2015 have not been restated with the sale of the emissions control business in 2017. Figures for 2014-2015 are therefore not comparable to figures for 2016-2018, where the divested business is presented as discontinuing operations.

Profit from continuing operations amounted to DKK 507 million in 2018 (2017: DKK 403 million). The increase in profit was mainly due to a significant growth in catalyst revenue in 2018 and a generally improved EBIT margin. Catalyst revenue for the Chemical Business Unit and the Refinery Business Unit increased by 21% and 15%, respectively. Technology revenue was positively affected by the successful close-down of many projects in Iran before the reinstatement of US sanctions on November 4, 2018, including a significant one-time effect of restarted Iranian contracts that impacted revenue and EBIT by DKK 91 million.

2018 was impacted by the finalization of the divestment of the emissions control business areas concluded on November 30, 2017. The losses relating to the discontinuing activities within the emissions control business areas amounted to DKK 16 million - mainly related to adjustment of net assets sold (2017: DKK 422 million).

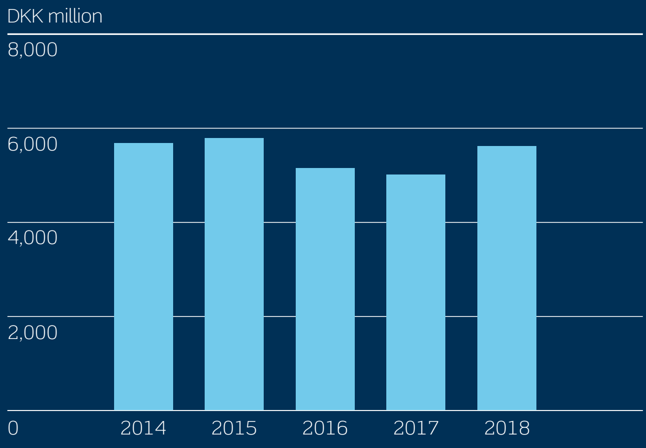
Net profit (after loss on discontinuing operations) increased significantly and showed a profit of DKK 491 million for 2018 (2017: DKK -19 million).

EBIT from continuing operations increased in 2018 by 19% to DKK 708 million corresponding to an EBIT margin of 12.6% (2017: 11.9%).

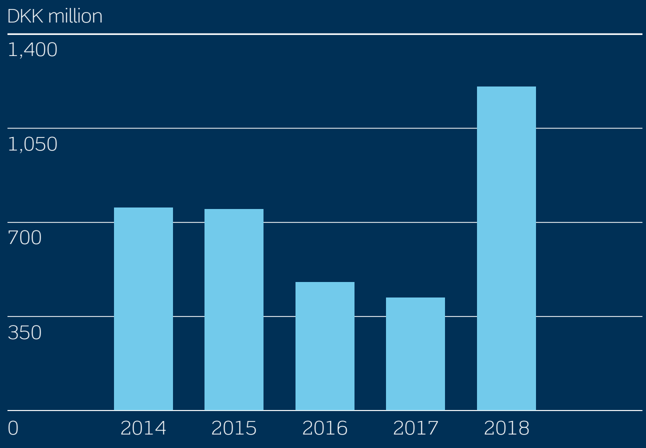
The increased revenue and net profit were already reflected in a significant improvement of cash flows from operating activities.

R&D expenses were maintained at a high level with a R&D-to-revenue-ratio of 9.0% (2017: 9.4%).

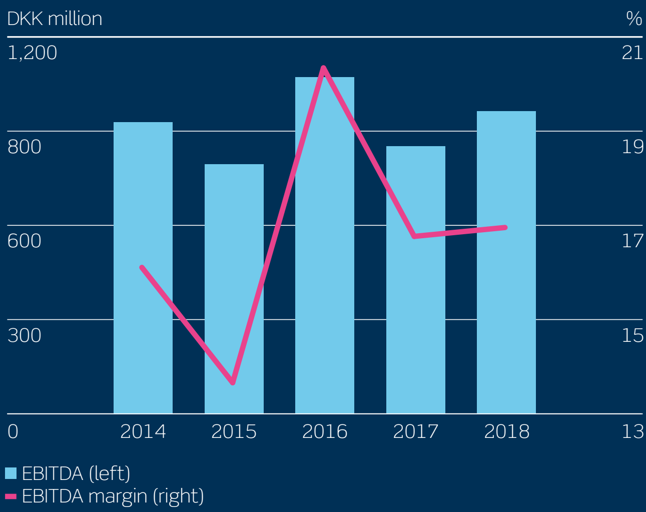
Revenue [1)]



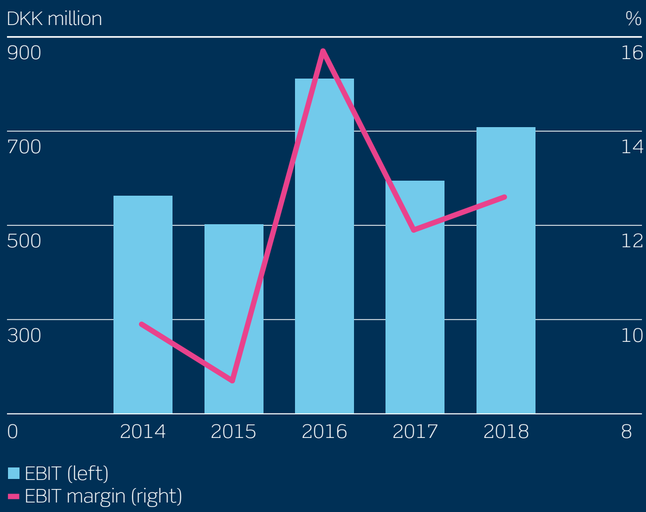
Cash flow from operating activities [1)]



EBITDA [1)]



EBIT [1)]



[1)] 2016, 2017, and 2018 figures reflect continuing operations only. 2014 and 2015 figures include discontinued business.

Financial report

Income statement

Revenue
Revenue from continuing operations increased by 12% to DKK 5,617 million (2017: DKK 5,011 million). Exchange rate developments from 2017 to 2018 had a negative impact of 1.2% on revenue. Catalyst revenue increased by 13%, and technology revenue increased by 9%.

Earnings before interest, tax, depreciation, and amortization (EBITDA)
Average gross margins remained relatively stable in 2018 at 46.6% compared to 47.7% in 2017.

EBITDA from continuing operations increased by 13% to DKK 964 million, corresponding to an EBITDA margin of 17.2% (2017: 17.0%).

Staff expenses amounted to DKK 1,656 million, which is an increase of 8% compared to 2017 (mainly due to redundancy costs in connection with layoffs in August 2018 and increased bonus accrual). Raw material costs, including change in inventories, increased by 18% to DKK 1,536 million, driven by increased catalyst sales volumes. Purchased equipment for contract work increased by 5% to DKK 606 million due to increased activity in our technology business. Other external expenses increased by 27% to DKK 958 million. Adjusted for cost of servicing discontinued businesses and associated other revenue, the increase was 16%. The increase was mainly due to increased losses on disposals of fixed assets (e.g. expired patents), external assistance, agent commission, rental and leasing, and repair and maintenance.

Earnings before interest and tax (EBIT)
EBIT from continuing operations increased by 19% to DKK 708 million corresponding to an EBIT margin of 12.6% (2017: 11.9%). Depreciation amounted to DKK 256 million, which is on par with 2017.

Net profit
Net profit increased to DKK 491 million (2017: DKK -19 million).

The increase in the net profit is mainly explained by:

- An increase in EBIT to DKK 708 million in 2018 (2017: DKK 595 million).
- A reduced loss on sale of discontinuing operations of DKK -16 million in 2018 (2017: DKK -422 million).
- Reduced interest expenses and positive exchange adjustments, in total DKK -22 million (2017: DKK -60 million).
- Partly offset by an increase in tax to DKK 185 million (2017: DKK 126 million).

Cash flow and balance sheet

Cash flows from operating activities
Cash flows from continuing operations amounted to DKK 1,205 million (2017: DKK 421 million). Net working capital decreased by DKK 410 million and made up 8.0% of revenue (2017: 13.3%), excluding warranty provisions. The improvement has been driven by collection of accounts receivables, as well as improved inventory turnover in 2018.

CAPEX
CAPEX increased by 30% and amounted to DKK 371 million (2017: DKK 284 million). This includes, e.g., equity investments in Ramagundam Fertilizers and Chemicals Ltd., India, as well as GTLA Holding LP, US. Investments in intangible assets, property, plant, and equipment amounted to DKK 258 million in 2018, a decrease of 9% compared to 2017.

Net indebtedness
Net indebtedness decreased by 12% and amounted to DKK 756 million (2017: DKK 855 million).

At the end of 2018, the interest-bearing debt was DKK 1,517 million (2017: DKK 1,846 million). A DKK 500 million tranche of corporate bonds expired in April 2018. This was refinanced by a new loan in European Investment Bank. The last remaining tranche of corporate bonds (DKK 500 million) will expire in April 2020.

At the end of 2018, no surplus funds were placed with the holding company, Haldor Topsøe Holding A/S (2017: DKK 129 million as part of a cash pool arrangement).

Return on invested capital (ROIC)
ROIC amounted to 26% (2017: 22%) driven by the increase in EBIT as well as asset reduction.

Order backlog

The order backlog amounted to DKK 3,796 million at the end of 2018 (an increase of DKK 311 million compared to the end of 2017). This was mainly due to a high inflow of catalyst orders. For the continuing business backlog, excluding Iran, the order backlog increased by DKK 1,079 million during 2018 (from DKK 2,717 million to DKK 3,796 million). At the end of 2018, the catalyst order book was at a satisfactory level compared to previous years.

Outlook for 2019

Revenue

We expect that Group revenue will be in the range of DKK 5,400-5,700 million in 2019. The revenue development will depend on the level of new catalyst and technology orders obtained during 2019 and the progress of existing technology orders. In some markets, project development is impacted by the project owners' ability to finance projects. Exchange rate developments, most notably the DKK/USD exchange rate, will impact revenue. Revenue development is negatively impacted by the close-down of all Iranian commercial activities on November 4, 2018.

EBIT

EBIT margin is expected to be in the range of 11-13% in 2019.

In 2019, we expect to maintain a high level of R&D and business development activities at approx. 9% of revenue.

Cash flow and funding

Operating cash flow (excluding working capital development) is expected to be at the same level in 2019 compared to 2018. Excluding warranty provisions, working capital is expected to be below 10% of revenue on average.

Topsoe's current funding position is strong, based on access to the corporate bond market, institutional banks, as well as commercial banks. Committed revolving credit facilities are in place.

Topsoe intends to maintain a credit profile that will ensure compliance with all bank covenants at any time. When market terms are attractive and there is a need, Topsoe will consider issuing additional corporate bonds as well as obtaining other credit facilities.

Forward-looking statements

Haldor Topsoe A/S' financial reports, whether in the form of annual reports or interim reports, as well as any presentations based on such financial reports, and any other written information released, or oral statements made, to the public based on this annual report or in the future on behalf of Haldor Topsoe A/S, may contain forward-looking statements.

These forward-looking statements are based on current plans, estimates and projections. By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific, which may be outside Haldor Topsoe A/S' influence, and which could materially affect such forward-looking statements

Haldor Topsoe A/S cautions that a number of factors, including those described in the risk management part of this report, could cause actual results to differ materially from those contemplated in any forward-looking statements.

Risk management

Enterprise risk management

Topsoe operates an enterprise risk management program with quarterly review and reporting, followed up by mitigating activities. The program enables Topsoe to identify risks early, assess them, and implement mitigating actions where feasible.

The Topsoe code of conduct has been implemented throughout the organization, including policies and business processes relating to anti-corruption, anti-money laundering, competition law, and other compliance issues. Our code of conduct is an example of a global mitigating action that is intended to prevent a number of potential risks related to business ethics and legal issues. Topsoe has a global compliance hotline (whistleblower solution) to support that concerns or suspicions are reported, also anonymously if so desired. The compliance hotline is available at www.topsoe.com/Compliance-Hotline.

The general risk factors and the associated mitigating actions are outlined below.

Strategic and operational risks

Customer demand
Catalysts are involved in the vast majority of industrial chemical processes today. In general, we see no indication of disruption in our core markets that will reduce demand or create substitute products, but we obviously cannot rule out such disruption in the future. On most products we compete on quality, wherefore significant resources are allocated to R&D to be able to continue producing high-performing products as requested by our customers. A very significant part of our technical and catalytic solutions is based on fossil fuels, notably natural gas. If cost-competitive alternative energy sources emerged, it could have a significant impact on our current business, and the level of market growth is, for some markets, impacted by the shift towards alternative energy sources. Therefore, we seek to develop new sustainable solutions in the Sustainable Business Unit to cater for future demand. For new products, processes, and services that are being developed, our sales depend on market demand.

Intellectual property (IP) protection
As a highly innovative company, Topsoe pursues IP protection through, for instance, patents, trade secrets, trademarks, design, and copyright law. However, our IP could be challenged, invalidated, circumvented, or rendered unenforceable. We will defend and prosecute our IP rights in court if deemed necessary.

Information security
As a knowledge-based company, Topsoe is exposed to the risk of theft of confidential information. To mitigate the risk of confidential information being disclosed through theft or fraud, an information security roadmap has been established and external advice is taken, focusing on identifying and adequately mitigating potential risk areas. As the risk profile is developing continously, and new risk areas can evolve, Topsoe continuously measures the efforts within this area and seeks to mitigate new potential threats.

Raw materials
Raw materials are a significant cost component in our products, and prices can fluctuate considerably. We seek to mitigate this risk through escalation clauses in customer contracts and hedging clauses in vendor contracts. The vendor clauses are typically linked to market indices. In addition, we use financial hedging to a certain extent. We also seek to have multiple suppliers for each raw material. We are exposed to some single-source supply risk, which could make us vulnerable to cost increases, and which can potentially influence the downstream supply chain. The single-source suppliers are continuously assessed, and we work actively to mitigate and limit our single-source exposure.

Operations
Topsoe's production of catalysts takes place in Frederikssund (Denmark) and Houston (United States). If production is closed down for an extended period in one of our plants – e.g. due to damage to the production facilities (caused by fire, flooding, wind storm, etc.), equipment failure, or cyber attacks – or if commissioning of a new production line is substantially delayed, it could have a material impact on Topsoe's earnings. We seek to mitigate this risk by operating multiple production lines for key products and enforcing a safety stock policy. We have also taken out business interruption insurance and property insurance.

Topsoe uses and produces chemicals. In our portfolio, we have hazardous chemicals that could potentially pose a risk if not handled with care. It is of high priority that all our chemical operations are fully compliant with all chemical and environmental regulations in all jurisdictions where we operate or sell our products. We have processes in place for continuous monitoring of global chemical regulations in order to identify any relevant regulatory changes that might affect our products or operations.

Topsoe is exposed to project execution risk on technology projects. Systematic project management seeks

to limit the risk of delayed deliveries, re-engineering, and cost overrun.

Issuance of bonds in support of contractual liabilities is an inherent and necessary part of Topsoe's business model, for instance in the form of bid bonds, advance payment bonds, and performance bonds issued by banks on behalf of Topsoe. Risk mitigation includes thorough structuring of contracts and related bonds.

Insurance
Besides property insurance and business interruption insurance, a number of other operational risks are insured, including general liability, product liability, professional indemnity and transportation.

Geopolitical risks
Topsoe's global presence exposes earnings to geopolitical events.

Political actions, such as embargoes, sanctions, trade barriers, new taxes, currency restrictions, and changes in environmental legislation, etc., may impact results and cash flows. To a certain degree, this risk is mitigated by monitoring regulatory initiatives, geographical diversification, and by ensuring – to the extent possible – that risk and cash flows are maintained positive for our individual contracts. New political sanctions or cancellation of existing political sanctions could potentially have a significant impact on our business. Our regulatory monitoring and business integrated compliance measures ensure that Topsoe is compliant with applicable international sanctions at all times.

Financial risks

Currencies
As Topsoe operates globally, the income statement, balance sheet, and cash flows are subject to the risk of currency fluctuations, mainly in relation to Topsoe's flows of USD.

Part of this risk is mitigated through natural hedges arising from activities where Topsoe has both income and expenses in the same currency. However, if the risk is not covered by natural hedges, Topsoe hedges certain future cash flows in accordance with a hedging policy. A 5% change in the USD/DKK exchange rate is assessed to have an EBIT effect of DKK 5-10 million.

Interest rates
Long-term debt consists of loans and bonds with floating as well as fixed interest rates. Topsoe's policy is to maintain a loan portfolio with 35-50% floating rate and 50-65% fixed

rate. For the floating rate portion of Topsoe's interest-bearing debt, an increase in the interest rate level of 1 percentage point will increase interest expenses by DKK 4 million.

Credit

Topsoe's credit risk is primarily related to trade receivables from state-owned as well as privately owned corporations. Where feasible, we seek to mitigate credit risk by applying instruments such as letters of credit and bank guarantees as well as selective structuring of payment terms, etc. Loss allowances are assessed on an ongoing basis.

Counterparties

In this context, counterparty risk is defined as credit risk on financial institutions when dealing with them, either by placing deposits, entering into derivative financial instrument transactions, or otherwise. In order to reduce counterparty risk, Topsoe only deals with financial counterparties who, in the opinion of Management, have satisfactory financial strength (based on credit rating from a recognized international credit rating agency, where feasible).

Liquidity

Topsoe must maintain sufficient liquidity to fund daily operations, debt service, and expansion. Topsoe's access to liquidity consists of cash and cash equivalents, including access to committed revolving credit facilities. The target is to maintain a minimum of DKK 500 million in unused committed revolving credit facilities at any time.

Restrictive covenants

Some of the financing arrangements of Topsoe are subject to financial covenants, and if violated, this could limit the ability to finance the company's operations and capital needs. Covenants include equity ratio (min. 20%), interest coverage (min. 5), and leverage (net debt/EBITDA) requirements (max. 3.5).

Dividend policy

Haldor Topsoe Group finances the operations of Haldor Topsøe Holding A/S through dividend payments. The liquidity effect of the expected future dividend payments has been incorporated in the cash flow forecasts of Haldor Topsoe Group. The dividend potential must take into account covenant requirements.

Tax

Topsoe's business structure with entities and/or business activities in many countries implies that a number of different direct, indirect, and collected taxes apply on a global basis. The combination of complexity in our business and our business structure requires dedicated focus on tax management; a focus that always respects international tax principles and local tax law, while managing the tax cost and tax risk of Topsoe. Topsoe will, at all times, use its best endeavors to comply with the tax legislation in the countries in which it operates, in accordance with OECD standards. When needed, Topsoe seeks to clarify uncertainties by involving external advisors and by taking a justifiable position in accordance with international tax principles and in alignment with Topsoe's code of conduct. Topsoe's tax management is documented in a global tax policy.

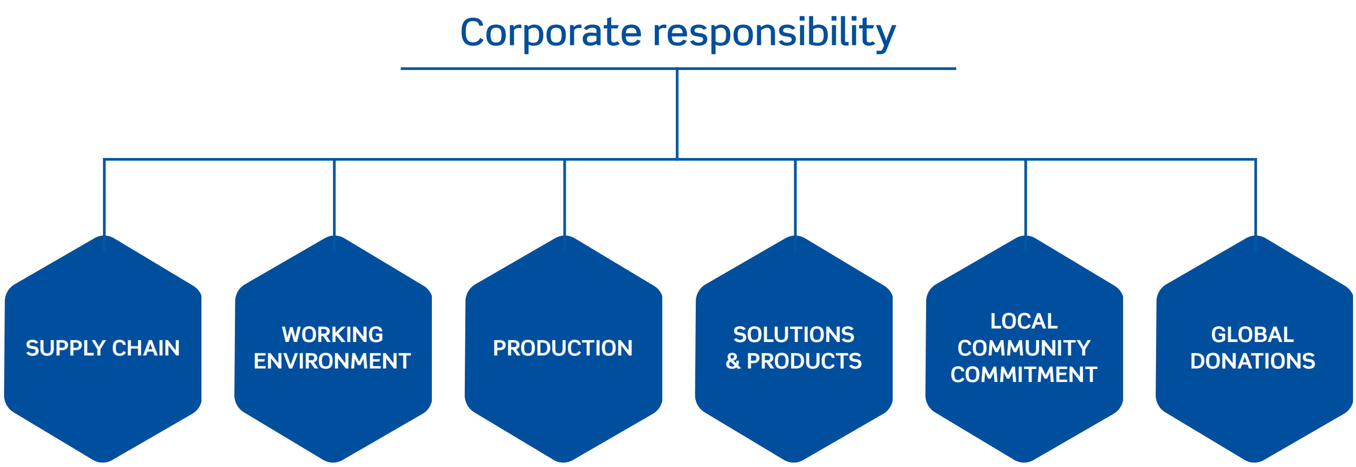
Sustainable business

Topsoe continuously strives to create sustainable solutions that make a difference in the world of today – and tomorrow. We are committed to ensure that our solutions, as well as our conduct, are economically, environmentally, and socially sustainable.

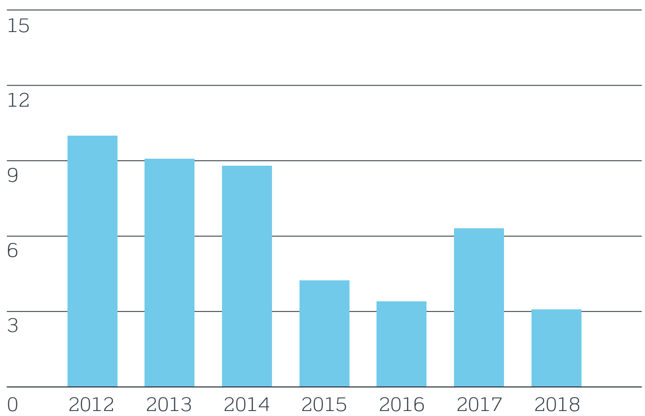
Acting responsibly in all aspects of our business is a fundamental element of our values. It serves as the foundation for how we do business in a complex, international business environment with cultural, political, and legal challenges.

Topsoe has instituted a corporate responsibility framework that allows Management to drive progress on corporate social responsibility and sustainability across Topsoe's global organization. The framework provides transparency of environmental, social, and governance efforts within our business.

Read more about our progress on sustainability and CSR in our sustainability report at www.topsoe.com. With this report Topsoe ensures compliance with sections 99a and 99b of the Danish Financial Statements Act.



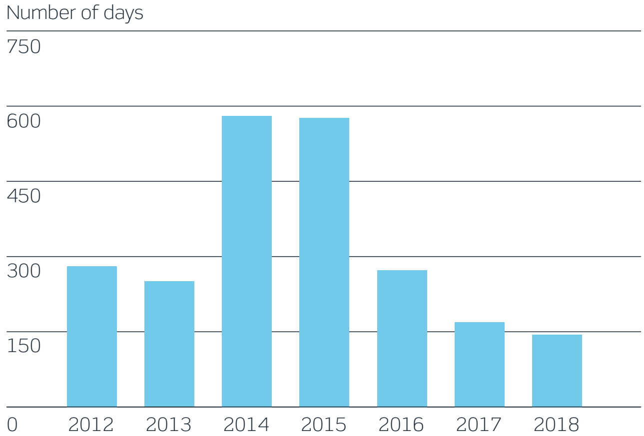
Lost time accident frequency rate



LTA Frequency is the number of lost time accidents per one million working hours over a twelve-month period.

Lost workdays caused by accidents

Number of days



Our **leadership**

Corporate **Governance**

Topsoe has a corporate governance structure in place that specifies how our business is led and controlled. In 2018, the Board of Directors and its committees have further optimized their processes and collaboration and ensured that key governance principles are continually developed and implemented, keeping Topsoe on par with enterprises we consider our peers.

In February 2018, Topsoe announced and welcomed new Deputy CEO and EVP, Amy Hebert.

In early March, a non-Board committee was established to increase Topsoe's focus on compliance and sustainability.

The ordinary election of employee representatives for the Board of Directors took place in connection with the annual general meeting, and at the time of writing, three out of the four employee representatives in the Board of Directors are new, compared to one year ago. During the year, Board member Mr. Henrik Stiesdal left the Board, as he wanted to focus on other engagements.

Shareholders

Currently, Topsoe is fully owned by the Topsøe family through the company Haldor Topsøe Holding A/S, of which they own 100%. On March 12, 2019, Haldor Topsøe Holding A/S and Temasek signed an agreement for Temasek to purchase 30% of the shares in Haldor Topsoe A/S. Closing is expected to be carried out later in 2019. Haldor Topsøe Holding A/S will remain the long-term majority shareholder.

The family's strong commitment to Topsoe's long-term growth strategy and continued development is fundamental to maintaining an innovative and sustainable company culture in line with the spirit of our founder.

Board of Directors

The company has a two-tier management structure anchored in the Board of Directors and the Executive Committee. The Board is an advisor to and supervisor of the Executive Committee and has particular focus on formulating, revising, and reviewing the company strategy. The two-tier management structure ensures complete separation of roles and responsibilities, where no person serves as a member of both.

Gender representation in the Board
The Topsoe Board of Directors has six members, not counting employee representatives. There are five male and one female Board member, giving a female representation of 17% on the Board. The Board has set a target of two female Board members by the end of 2020. This target has been carefully considered when members have been replaced or added to the Board. However, it has not been possible to identify and appoint new female members to the Board. The Board of Directors continues to focus on this target when evaluating its composition, competencies, and future candidates.

Board Committees

Finance Committee
In 2010, Topsoe established the Finance Committee, which is responsible for assisting the Board in fulfilling its oversight responsibilities by reviewing and monitoring the company's financials. The Finance Committee consists of three members elected by the Board among its members:

Jakob Topsøe (Chairman), Jeppe Christiansen, Anders Heine Jensen.

Remuneration Committee
In 2013, the Remuneration Committee was established to ensure appropriate policies for fair employee and Board pay. The Remuneration Committee consists of three members elected by the Board among its members:

Jørgen Huno Rasmussen (Chairman), Jeppe Christiansen, Jakob Topsøe.

Innovation Committee
In 2016, the Innovation Committee was established and tasked with helping to ensure that Topsoe remains a leader in catalytic innovations within its business areas. The Innovation Committee consists of two members elected by the Board among its members:

Jens K. Nørskov (Chairman), Christina Topsøe, non-Board member Henrik Topsøe and management representatives from the Topsoe Group.

Donation Committee
In addition to the Board Committees, Topsoe has a Donation Committee, which reviews incoming requests for donations and support that Topsoe provides to local communities. The Donation Committee consists of a member from the Board of Directors of Haldor Topsøe Holding A/S, a member of the Topsøe family, and management representatives from the Topsoe Group. Currently, the members are:

Birgitte Øigaard (Chairman), Christina Topsøe, Bjerne S. Clausen, and Peter Rønnest Andersen.

A current list of all members of the above committees is available on our corporate website: www.topsoe.com/about/governance.

Executive Committee

The responsibility for the daily operations of Topsoe lies with the Executive Committee. The team meets weekly and consists of the CEO, the Deputy CEO, the CFO, and the EVPs of the Refinery and Sustainables Business Units. Responsibilities include overall business conduct, drafting, setting, and implementing strategies and policies, and ensuring sufficient reporting to the Board of Directors.

Compliance & behavior

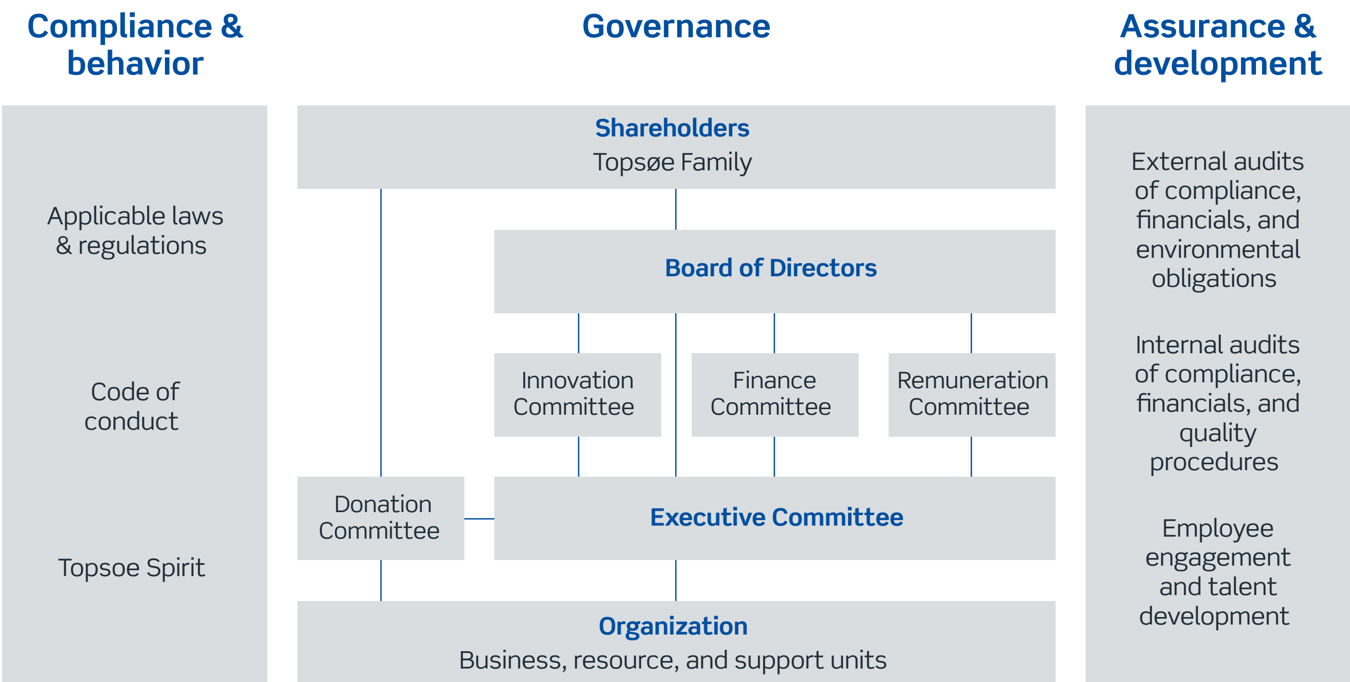
Understanding external expectations, working diligently to meet these requirements, and staying true to the Topsoe Spirit is fundamental to Topsoe.

Our code of conduct and underlying policies and procedures ensure that we comply with applicable international laws and regulations. The Topsoe Spirit defines our company values and guides our interactions, decisions, and actions.

Assurance & development

Operating in a financially responsible manner, improving and certifying processes to meet high business standards, and developing our people are important elements to ensure a sustainable business model.

Both external and internal measures are taken to audit, review, and continuously develop our processes as well as our most valuable asset, our employees.



Board of Directors

Jeppe Christiansen
Chairman

Jeppe Christiansen is CEO of Maj Invest Holding A/S. Mr. Christiansen is Deputy Chairman of the Boards of Directors of Maj Bank A/S, Novo Nordisk A/S, and Symphogen A/S. He is a member of the Boards of Novo Holdings A/S and KIRKBI. In addition, Mr. Christiansen is a member of the Executive Management of Maj Invest Equity A/S, Det Kgl. Vajsenhus, and EMLIKA ApS. He holds an MSc in Economics from the University of Copenhagen.

Jørgen Huno Rasmussen
Vice Chairman

Jørgen Huno Rasmussen is Chairman of the Boards of LFI A/S and the Lundbeck Foundation. He is Vice Chairman of the Boards of Terma A/S and Rambøll Group A/S. He is a member of the Boards of Otto Mønsted A/S, Thomas B. Thriges Foundation and Bladt Industries A/S. Mr. Rasmussen has previously been CEO of FLSmidth & Co. A/S and Hoffmann A/S. He holds an MSc and a PhD from the Technical University of Denmark, and a Graduate Diploma in Business Administration from Copenhagen Business School, where he is Adjunct Professor.

Jakob Haldor Topsøe
Vice Chairman

Jakob Haldor Topsøe is Chairman of the Board of Haldor Topsøe Holding A/S and a member of the Boards of IGM Biosciences Inc., Motortramp A/S, and Dampskibsselskabet Orients Fond A/S. Mr. Topsøe is Associated Partner at AMBROX Capital A/S. He has previously been Head of Equities at ABN AMRO Bank in Denmark. Mr. Topsøe holds a Graduate Diploma in Business Administration from the Copenhagen Business School.

Anders Heine Jensen
Member

Anders Heine Jensen is CEO of MT Højgaard A/S. He has previously been CEO of Burmeister Wain Scandinavian Contractors A/S and Senior Director with Ørsted (DONG Energy). Mr. Jensen is a member of the Board of Directors of Monberg & Thorsen A/S, member of the Central Board of the Confederation of Danish Industry and member of the Board of Danish Building Materials Federation. He holds an MSc in Mechanical Engineering and Energy from the Technical University of Denmark and a Graduate Diploma in Business Administration from Copenhagen Business School.

Jens Kehlet Nørskov
Member

Jens K. Nørskov is the Villum Kann Rasmussen Professor in the Catalysis Theory Center at the Technical University of Denmark (DTU). Dr. Nørskov has previously been Professor at the School of Engineering at Stanford University. He is a member of the editorial board of several journals and has received a large number of honors and awards. Dr. Nørskov is also a member of several boards, advisory boards and professional organizations. He holds a PhD from Aarhus University.

Christina Teng Topsøe
Member

Christina Teng Topsøe is a former lawyer and practiced law in London and Singapore for Allen & Overy and Simpson, Thacher and Bartlett. Ms. Topsøe is a member of the Boards of Haldor Topsøe Holding A/S and IGM Biosciences Inc. She studied Chinese at the University of Copenhagen / Peking University and law at the University of London. She holds an MBA from London Business School and Columbia Business School.

Anders Broe Bendtsen
Employee representative

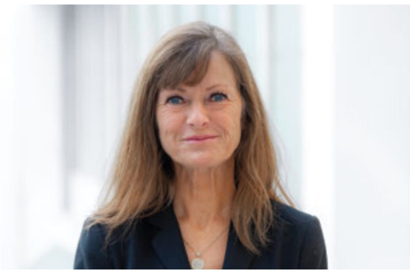
Anders Broe Bendtsen is Senior Patent Counsel in Legal. He has been with Topsoe since 2010 and has been a member of the Works Council and Chairman of the Topsoe Engineers Company Group. Mr. Bendtsen holds a PhD in Chemical Engineering from the Technical University of Denmark and is a registered European Patent Attorney.

Christina Borch
Employee representative

Christina Borch is Process Specialist in Catalyst Production. She has been with Topsoe since 1992, working with R&D, product management and production. Ms. Borch holds an Academy Profession Degree in technology.

Jette Søvang Christiansen
Employee representative

Jette Søvang Christensen is Quality Assurance Manager in Catalyst Production. Ms. Christiansen holds an Academy Profession Degree in technology. She has been with Topsoe since 1986.



Lis Ibsen
Employee representative

Lis Ibsen is Research Specialist in Research & Development, where she has been working with developing, testing, and characterization of catalysts since 1998. Ms. Ibsen holds a Professional Bachelor's Degree as a Laboratory Technician specializing in chemistry.

Executive Committee

Bjerne S. Clausen
President and CEO

Bjerne S. Clausen has been President and CEO since 2011. He joined the Executive Committee in 2006 as Director of Research & Development and became Executive Vice President of the Technology Division in 2008. Dr. Clausen joined Topsoe in 1979.

Dr. Clausen holds an MSc and a PhD in Materials Science from the Technical University of Denmark (DTU) and was awarded an honorary doctorate from DTU in 2014. Dr. Clausen is Adjunct Professor at both DTU and University of Aarhus, Denmark, and has been appointed Visiting Professor at the Business School of Nankai University, China.

Dr. Clausen has served on numerous research and industrial boards and committees. He is currently Chairman of the Board of iNANO, the Interdisciplinary Nanoscience Center, University of Aarhus, he is a member of the Advisory Board of the Department of Chemical Engineering, DTU as well as a member of the Confederation of Danish Industry's Committee on Business Policy.

Amy Hebert
Deputy CEO and EVP Chemical Business Unit

Amy Hebert joined Topsoe as Deputy CEO and Executive Vice President, Chemical Business Unit, in February 2018. Previously, she has been Vice President Europe with Celanese and Global Vice President Catalysts with Albemarle. She has more than 20 years' experience from the chemical industry. Ms. Hebert is responsible for the chemical catalysts and licensing business unit as well as the regional offices.

Ms. Hebert holds a B.S. in Chemical Engineering from Georgia Institute of Technology, Atlanta, Georgia.

Ms. Hebert has been a member of the board of Cefic (the European Chemical Industry Council) and a number of joint venture companies.

Peter Rønnest Andersen
CFO

Peter Rønnest Andersen has been a member of the Executive Committee as Executive Vice President and Chief Financial Officer (CFO) since 2013. Before that, Mr. Andersen was with the A.P. Moller - Maersk Group for more than 20 years, including 15 years as CFO and a member of the executive committee in various divisions, of which five years as Senior Vice President and CFO of Maersk Line. Mr. Andersen has extensive board experience as a chairman and a member of the boards of a number of companies and joint ventures in Denmark and several other countries.

Mr. Andersen holds an MSc in Economics from the University of Aarhus, Denmark, and an Executive MBA from IMD, Switzerland. He has completed extensive leadership training at Cranfield School of Management (UK), Penn State University (USA), and Harvard University (USA).

Morten Schaldemose
EVP, Refinery Business Unit

Morten Schaldemose has been Executive Vice President and head of Refinery Business Unit since 2013. Mr. Schaldemose is responsible for the company's products and services to the refining industry. He has held a number of positions in Topsoe centered on the refinery business, including Head of Marketing and Sales. Mr. Schaldemose joined Topsoe in 1997 after working at Kuwait Petroleum International. In an interim period, he served as COO and CEO of a number of cleantech companies before rejoining Topsoe.

Morten Schaldemose holds an MSc in Chemical Engineering from the Technical University of Denmark and an EMBA with distinction from INSEAD.

Kim Grøn Knudsen
EVP, Sustainables Business Unit

Kim Grøn Knudsen is Executive Vice President, Sustainables Business Unit. He has been a member of the Executive Management since 2012. He has held a number of positions within Topsoe's Research & Development unit, including Vice President. Mr. Knudsen joined Topsoe in 1996, leaving a position as Research Associate Professor at the Technical University of Denmark.

Mr. Knudsen holds a MSc and a PhD in Chemical Engineering from the Technical University of Denmark.

Mr. Knudsen holds several patents and is the author and co-author of more than 55 papers.

Financial **statements**

Consolidated income statement

DKK million	Note	2018	2017
Continuing operations			
Revenue	3	**5,617**	**5,011**
Change in inventories of finished goods and intermediate products		63	-139
Other operating income	4	103	15
Purchased equipment for contract work		-606	-578
Raw materials and consumables used		-1,599	-1,162
Other external expenses		-958	-756
Gross profit		**2,620**	**2,391**
Staff expenses	5	-1,656	-1,539
EBITDA		**964**	**852**
Depreciation, amortization and impairment losses	6	-256	-257
EBIT		**708**	**595**
Result of investment in joint venture	7	-10	-30
Financial income	8	71	73
Financial expenses	9	-77	-109
Profit before tax		**692**	**529**
Tax	10	-185	-126
Profit from continuing operations		**507**	**403**
Loss from discontinuing operations	41	-16	-422
Net profit		**491**	**-19**
Profit attributable to:			
Owners of the parent company		490	-19
Non-controlling interest		1	0
Net profit		**491**	**-19**

Consolidated statement of comprehensive income

DKK million	Note	2018	2017
Net profit		**491**	**-19**
Foreign currency translation adjustment	20	38	-175
Recycling currency translation adjustments from discontinuing operations	41	0	24
Derivative financial instruments used for hedging of future cash flows	20	-3	12
Realized derivative financial instruments transferred to financial income/expense	20	-6	1
Tax on this	20	1	-3
Fair value adjustment of financial assets available-for-sale	20	-39	-26
Tax on this	20	1	-4
Other	20	-4	0
Revaluation of land and buildings	20	30	0
Tax on this	20	-7	17
Items that may be reclassified to the income statement		**11**	**-154**
Actuarial adjustments on pension obligations		-2	13
Tax on this		0	-5
Items that will not be reclassified to the income statement		**-2**	**8**
Other comprehensive income		**9**	**-146**
Total comprehensive income		**500**	**-165**
Attributable to:			
Owners of the parent company		500	-165
Non-controlling interests		0	0
Total comprehensive income		**500**	**-165**
Continuing operations		516	257
Discontinuing operations		-16	-422
Total comprehensive income attributed to the owners of the parent company		**500**	**-165**

Consolidated balance sheet

Assets

DKK million	Note	December 31 **2018**	December 31 **2017**
Rights		16	19
Patents		41	45
Software		15	20
Intangible assets under construction		4	0
Intangible assets	11	**76**	**84**
Land and buildings		782	759
Plant and machinery		740	791
Other fixtures and equipment		215	241
Property, plant and equipment under construction		345	250
Property, plant and equipment	12	**2,082**	**2,041**
Investment in joint venture		0	0
Finance lease receivables		8	0
Other securities and investments		344	316
Other receivables		21	54
Investments	13	**373**	**370**
Non-current assets		**2,531**	**2,495**
Inventories	14	**1,138**	**1,043**
Trade receivables	15	717	995
Contract work in progress	16	187	173
Receivables from the parent company	17	190	371
Finance lease receivables	13	1	0
Other receivables	18	121	215
Prepayments		18	35
Receivables		**1,234**	**1,789**
Cash		**761**	**862**
Current assets		**3,133**	**3,694**
Assets		**5,664**	**6,189**

Consolidated balance sheet

Equity and liabilities

DKK million	**Note**	December 31 **2018**	December 31 **2017**
Share capital	19	376	376
Revaluation reserve	20	221	198
Foreign currency translation reserve	20	54	20
Reserve for unpaid share capital	20	241	241
Reserve for value adjustment of hedging instruments	20	-2	6
Reserve for financial assets measured at fair value	20	138	177
Retained earnings		258	646
Equity attributed to the owners of the parent company		**1,286**	**1,664**
Non-controlling interest		10	0
Total equity		**1,296**	**1,664**
Pension obligations and similar obligations	22	43	30
Deferred tax	23	381	522
Provisions	24	287	255
Bonds	25	499	499
Mortgage debt	25	27	30
Credit institutions	25	698	575
Lease obligations	25	129	130
Other payables	26	2	3
Non-current liabilities		**2,066**	**2,044**
Bonds	25	0	499
Mortgage debt	25	3	3
Credit institutions	25	161	110
Deferred income	25	14	1
Prepayments from customers	27	418	229
Contract work in progress	16	492	675
Trade payables		395	382
Corporate income tax		216	78
Other payables	26	603	504
Current liabilities		**2,302**	**2,481**
Liabilities		**4,368**	**4,525**
Equity and liabilities		**5,664**	**6,189**

Consolidated statement of changes in equity

DKK million	Share capital	Reserves	Retained earnings	Total	Non-controlling interest	Total equity
Equity at January 1, 2018	**376**	**642**	**646**	**1,664**	**0**	**1,664**
Net profit	0	0	490	490	1	491
Other comprehensive income	0	10	-2	8	0	8
Comprehensive income	**0**	**10**	**488**	**498**	**1**	**499**
Capital increase in subsidiaries	0	0	0	0	8	8
Change in minority	0	0	-1	-1	1	0
Dividend	0	0	-875	-875	0	-875
Transactions with owners	**0**	**0**	**-876**	**-876**	**9**	**-867**
Equity at December 31, 2018	**376**	**652**	**258**	**1,286**	**10**	**1,296**

DKK million	Share capital	Reserves	Retained earnings	Total	Non-controlling interest	Total equity
Equity at January 1, 2017	**376**	**796**	**1,066**	**2,238**	**51**	**2,289**
Adjustment of non-controlling interest	0	0	-75	-75	-51	-126
Adjusted equity at January 1, 2017	**376**	**796**	**991**	**2,163**	**0**	**2,163**
Net profit	0	0	-19	-19	0	-19
Other comprehensive income	0	-154	8	-146	0	-146
Comprehensive income	**0**	**-154**	**-11**	**-165**	**0**	**-165**
Dividend	0	0	-334	-334	0	-334
Transactions with owners	**0**	**0**	**-334**	**-334**	**0**	**-334**
Equity at December 31, 2017	**376**	**642**	**646**	**1,664**	**0**	**1,664**

Consolidated cash flow statement

DKK million	Note	2018	2017
Net profit		491	-19
Adjustments for non-cash items	36	473	428
Change in working capital	37	410	-100
Cash flows from operating activities before financial items and tax		**1,374**	**309**
Interest received, etc.		50	55
Interest paid, etc.		-77	-126
Cash flows from ordinary activities		**1,347**	**238**
Corporation tax paid		-158	-101
Cash flows from operating activities		**1,189**	**137**
- Of which continuing operations		1,205	421
Purchase of intangible assets		-20	-31
Sale of intangible assets		45	0
Purchase of property, plant and equipment		-251	-211
Sale of property, plant and equipment		30	0
Purchase of non-current financial assets		-134	-42
Sale of fixed asset investments		60	31
Sale of emissions control business areas		0	919
Dividend received		16	24
Business combination, net cash		34	0
Cash flows from investing activities		**-220**	**690**
Raising of long-term loans		299	0
Repayment of long-term loans		-626	-126
Non-controlling interest's payment of share capital		8	-126
Dividend paid		-875	-334
Cash flows from financing activities		**-1,194**	**-586**
Change in cash and cash equivalents		**-225**	**241**
Cash and cash equivalents at January 1		991	790
Foreign currency translation adjustments		-5	-40
Cash and cash equivalents at December 31		**761**	**991**
Cash		761	862
Deposits with the parent company		0	129
Cash and cash equivalents at December 31		**761**	**991**

Notes to the consolidated financial statements

List of notes

Notes to the consolidated financial statements

Note 1
Accounting policies

Basis of preparation

The consolidated financial statements of Haldor Topsoe A/S have been prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, as well as additional Danish disclosure requirements applying to large enterprises of reporting class C.

The accounting policies are unchanged from last year, except from what is mentioned below.

New standards, amendments and interpretations adopted by Topsoe
The following standards have been implemented by Topsoe for the financial year 2018:

- IFRS 9 “Financial instruments: Classification and measurement of financial assets and financial liabilities”. The standard contains requirements for the classification and measurement of financial assets and liabilities, impairment methodology and general hedging accounting. IFRS 9 has had an insignificant impact on the consolidated financial statements. The implementation has resulted in additional disclosures. The basis for calculating the provision for bad debt has been changed from incurred losses to expected losses. However, this has had only insignificant impact on the provision and thereby the consolidated financial statements. The standard has been implemented retrospectively using January 1, 2018 as the date of initial application. The Group has made use of the relief from restating the comparative figures. Upon initial application of IFRS 9, "Other securities and investments" previously classified as available for sale have been designated at fair value through other comprehensive income. Please refer to note 15 for further information.
- IFRS 15 ”Revenue from contracts with customers”: The standard establishes a single framework for revenue recognition. The implementation of IFRS 15 has had an insignificant impact on the consolidated financial statements. The implementation has resulted in additional disclosures. The standard was implemented using the modified retrospective method. The Group has made use of the relief from restating comparative figures and has applied IFRS 15 only to contracts that were not completed as of January 1, 2018.
- IFRIC 22 “Foreign currency translation and advance consideration”: IAS 21 requires an enterprise to use the exchange rate at the date of the transaction which is defined as the date on which the transaction first qualifies for recognition. The Group has assessed the impact of the new interpretation and concluded that it has no significant impact on the consolidated financial statements.

New standards, amendments and interpretations not yet effective
The following new standards, amendments and interpretations have been adopted by the IASB and adopted by the EU. Topsoe will adopt the standards when they become effective:

- IFRS 9 “Financial instruments”: A minor amendment concerning the classification of receivables in situations where a borrower has a prepayment option and where such prepayment has negative consequences for the borrower. The receivables are to be measured at amortized cost or fair value with adjustments through other comprehensive income if certain criteria are met. The amendment will be effective for the financial year beginning on January 1, 2019. Topsoe has assessed that the standard will not have a significant impact on the consolidated financial statements. However, implementation of the standard will impact disclosures.
- IFRS 16 “Leases”: Going forward, the lessee is required to recognize all leases as a lease liability and a lease asset in the balance sheet with two exceptions: short-term leases (less than 12 months) and leases relating to low-value assets. It must furthermore be considered whether the agreement is a lease or a service arrangement. In the income statement, the lease expense is replaced by depreciation of the asset and an interest expense for the financial liability. The current rules remain largely unchanged for the lessor. Consequently, leases are still to be classified as finance leases and operating leases.

  The standard will be implemented on January 1, 2019, using the modified retrospective approach, where the lease liability is determined on that date and the right-of-use assets are measured at an amount equal to the lease liability. Comparative figures are not restated.

  Topsoe has assessed the impact of the new standard once implemented:

  Balance sheets will gross up by approximately DKK 545 million for right-of-use assets and DKK 544 million for lease liabilities, measured at the present value of the remaining lease payments discounted using the incremental borrowing rate per country. The discrepancy between right-of-use assets and lease liabilities is the adjustment of the prepaid lease payments before the date of initial application. The income statement will not be significantly impacted. However, the related key ratios in the consolidated financial statements, such as EBITDA and ROIC, will be impacted.

  Furthermore, the implementation of IFRS 16 will impact disclosures.
- IFRIC 23 ”Uncertainty over income tax treatments”: The interpretation clarifies that it must be determined whether each tax position is to be treated individually or collectively with other uncertain tax positions. The assessment should be based on the assumption that the tax authorities have the same knowledge of the enterprise’s circumstances and, therefore, the assessment

Notes to the consolidated financial statements

Note 1
Accounting policies (continued)

should disregard any detection risk. This determination may be based on e.g. how tax statements are prepared, or how the enterprise expects the tax authorities to treat the uncertain tax positions. The uncertain tax position must be recognized if it is probable that the enterprise will have to pay or receive refunds. The uncertain tax position must be measured so as to better reflect the receivable/ liability and the related uncertainty. The amendment will be effective for financial years beginning on or after January 1, 2019. Topsoe has assessed that the standard will not have a significant impact on the consolidated financial statements.

The IASB has issued the following new standards, amendments and new interpretations that are relevant to Topsoe, but which have not yet been adopted by the EU:

- IAS 19 "Employee Benefits": The amendment consists of a minor clarification of IAS 19 regarding remeasurement of defined benefit plans. When pension obligations are remeasured due to an amendment, a curtailment or termination of a pension plan, service costs and net interest for the period after the remeasurement must be determined based on the assumptions used for the remeasurement.
  - The net interest for the remaining period is calculated on the basis of the remeasured defined benefit liability or asset.
  - However, the service costs and net interest for the financial period preceding such amendment, curtailment or termination of a pension plan are not affected by the remeasurement.

  The amendment will be effective for financial years beginning on January 1, 2019.

- IAS 28 "Investments in associates and joint ventures": A clarification that enterprises are to apply IFRS 9, including the requirements for impairment of financial assets, on recognition of long-term investments even though such receivables are considered part of the net investment in the associate or joint ventures under IAS 21. The amendment will be effective for financial years beginning on January 1, 2019.

- Annual improvements (2015-2017): Include three minor clarifications:
  - IAS 12 "Income taxes": Income tax consequences of dividends should be recognized in profit or loss, see IAS 12.
  - IAS 23 "Borrowing costs": Borrowing costs incurred on specific-purpose borrowing may subsequently change into borrowing costs on general borrowing, see IAS 23.
  - IFRS 3 "Business combinations": Clarifies that a step acquisition of a joint venture by which an enterprise obtains control must be treated in accordance with IFRS 3.

  The amendments will be effective for financial years beginning on or after January 1, 2019.

The above standards and interpretations will be applied when they become effective. None of these are expected to have a significant impact on the consolidated financial statements of Topsoe.

General

The consolidated financial statements have been prepared in accordance with the historical cost convention, except for the following items that are stated at fair value:

- Land and buildings
- Financial assets measured at fair value through other comprehensive income
- Derivative financial instruments

Part of the information required by IFRS appears from Management's Review. The remaining information appears from the following sections.

Consolidation

The consolidated financial statements comprise the parent company, Haldor Topsoe A/S, and enterprises in which the parent company directly or indirectly holds the majority of the voting rights or in which the parent company through share ownership or otherwise exercises control.

Consolidation is performed by summarizing the financial statements of the parent company and group enterprises, which have been prepared in accordance with the Group's accounting policies.

On consolidation, elimination is made of intercompany income and expenses, shareholdings, dividends and accounts as well as of realized and unrealized profits and losses on transactions between the consolidated enterprises.

The parent company's investments in consolidated group enterprises are set off against the parent company's share of the net asset value of group enterprises at the time of consolidation.

The non-controlling interest's share of profit for the year and of equity in subsidiaries which are not wholly owned is included as part of the Group's profit and equity, respectively, but shown as separate items.

Business combinations

On acquisition of new enterprises, the purchase method is applied. Cost is measured at fair value of the consideration. Identifiable assets and liabilities and contingent liabilities acquired in connection with the business combination are initially measured at fair value at the date of acquisition. Any positive differences between cost and fair value of the acquired identifiable net assets are recognized as goodwill. Goodwill is adjusted until 12 months after the date of acquisition if it turns out that the identifiable assets, liabilities and contingent liabilities have another fair value than determined at the date of acquisition.

Notes to the consolidated financial statements

Note 1
Accounting policies (continued)

Newly acquired enterprises are recognized from the date of acquisition and comparatives are not restated.

In stepwise acquisitions, value adjustments of previously recognized investments are recognized in the income statement. The effect of the purchase of non-controlling interests without change of control is included directly in equity.

Functional and presentation currency
Items in the financial statements of each of the Group's enterprises are presented in the currency used in the primary economic environment in which the enterprise operates. The consolidated financial statements are presented in Danish kroner (DKK), which is the functional and presentation currency of the parent company.

Translation policies
Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the date of transaction on initial recognition. Foreign currency monetary items are translated into the functional currency at the exchange rates prevailing at the balance sheet date.

Financial statements of group enterprises with another functional currency than Danish kroner are translated into Danish kroner using the exchange rates prevailing at the balance sheet date for balance sheet items and average exchange rates for income statement items.

Realized and unrealized foreign exchange gains and losses are recognized in financial income and financial expenses, except for unrealized losses and gains arising from hedging of future cash flows, which are recognized through comprehensive income under reserve for value adjustment of hedging instruments. In addition, the following currency translation differences are recognized through comprehensive income under the foreign currency translation reserve, using the exchange rates prevailing at the balance sheet date:

- Translation of group enterprises' net assets at the beginning of the financial year.
- Translation of group enterprises' income statements from average exchange rates to the exchange rates prevailing at the balance sheet date.
- Translation of non-current intercompany balances that are considered an addition to the net investment in group enterprises.

Derivative financial instruments
Derivative financial instruments are initially recognized in the balance sheet at fair value and are subsequently remeasured at their fair values. Positive and negative fair values of derivative financial instruments are recognized in "Other receivables" and "Other payables".

Changes in the fair values of derivative financial instruments that qualify as hedges of expected future cash flow are recognized through comprehensive income. Amounts recognized through comprehensive income are transferred to the income statement in the period when the hedged item affects the income statement.

Changes in the fair values of derivative financial instruments that do not qualify as hedges are recognized in the income statement. The fair values of derivative financial instruments are determined based on prices obtained from stock exchanges or other reliable data sources.

Non-current assets (or disposal groups) held for sale and discontinuing operations
Non-current assets (or disposal groups) are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. They are measured at the lower of their carrying amount and fair value less costs to sell, except for assets such as deferred tax assets, assets arising from employee benefits and financial assets that are carried at fair value, which are specifically exempt from this requirement.

An impairment loss is recognized for any initial or subsequent write-down of the asset (or disposal group) to fair value less costs to sell. A gain is recognized for any subsequent increases in fair value less costs to sell of an asset (or disposal group), but not in excess of any cumulative impairment loss previously recognized. A gain or loss not previously recognized by the date of the sale of the non-current asset (or disposal group) is recognized at the date of sale or disposal.

Non-current assets (including those that are part of a disposal group) are not depreciated or amortized while they are classified as held for sale. Interest and other expenses attributable to the liabilities of a disposal group classified as held for sale continue to be recognized.

Non-current assets classified as held for sale and the assets of a disposal group classified as held for sale are presented separately from the other assets in the balance sheet. The liabilities of a disposal group classified as held for sale are presented separately from other liabilities in the balance sheet.

A discontinuing operation is a component of an entity that has been disposed of or is classified as held for sale and which represents a separate major line of business or geographical area of operations or is part of a single coordinated plan to dispose of such a line of business or area of operations. The results of discontinuing operations are presented separately in the income statement.

Income statement

Revenue
Revenue from the sale of finished goods is recognized in the income statement when control has been transferred to the customer, i.e. when goods are delivered. Revenue is rec-

Notes to the consolidated financial statements

Note 1
Accounting policies (continued)

ognized exclusive of VAT and net of discounts relating to sales.

Contract work in progress is recognized based on the stage of completion, which means that revenue equals the selling price of the work completed for the year (percentage-of-completion method). This method is applied when total revenue and expenses in respect of the contract and the stage of completion at the balance sheet date can be measured reliably, and it is probable that economic benefits, including payments, will flow to the Group.

Other operating income
Other operating income comprises income of a secondary nature to the Group's core activities, including government grants provided for research projects.

Purchased equipment for contract work
Purchased equipment for contract work comprises hardware etc. related to engineering projects.

Raw materials and consumables used
Raw materials and consumables used comprise raw materials and consumables consumed to achieve revenue for the year.

Other external expenses
Other external expenses comprise expenses for premises, sales and distribution as well as office expenses, etc.

Government grants
Government grants received for research and development projects are recognized in "Other operating income" as the projects progress. Grants received for investment in property, plant and equipment are set off against the related property, plant and equipment, if directly related. Otherwise grants are recognized as deferred income and systematically recognized in "Other external expenses" over the useful life of the asset.

Leases
Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases are charged to the income statement on a straight-line basis over the lease term. The liability related to non-cancellable leases is disclosed in the notes.

Leases where the Group has substantially all the risks and rewards of ownership are classified as financial leases. Financial leases are capitalized at the lease's commencement at the lower of the fair value of the leased property and the present value of the minimum lease payments. The property acquired under finance leases is depreciated over the shorter of the useful life of the asset or the lease term. The corresponding lease obligation is included in liabilities.

Tax
Tax consists of current tax for the year, deferred tax as well as any adjustments to prior years. Tax attributable to the profit for the year is recognized in the income statement, whereas tax attributable to other comprehensive income transactions is recognized through other comprehensive income.

Haldor Topsoe A/S and Danish group enterprises are jointly taxed. Tax for the individual companies is allocated fully on the basis of expected taxable income.

Balance sheet

Intangible assets
Development projects
Development projects that are clearly defined and identifiable and in respect of which technical feasibility, sufficient resources and a potential future market or development opportunity in the enterprise can be demonstrated, and where it is the intention to manufacture, market or use the project, are recognized as intangible assets. This applies if sufficient certainty exists that the value in use of future earnings can cover the cost of sales and distribution involved as well as the development costs.

Development projects that do not meet the Group's criteria for recognition in the balance sheet and research expenses are recognized as expenses in the income statement as incurred.

Other intangible assets
Rights and patents are measured at cost less accumulated amortization and impairment losses. Both rights and patents are amortized on a straight-line basis over the remaining patent term, but not exceeding 10 years, due to the notoriously fast development in applied technologies and related uncertainty about longer amortization period.

Internally developed software for major projects is measured at cost less accumulated amortization and impairment losses. Software is amortized on a straight-line basis over 4 years.

Other intangible assets are tested for impairment when there is an indication of impairment. Material impairment indicators which may lead to an impairment test are similar to those stated in the section on property, plant and equipment.

Impairment losses relating to other intangible assets are reversed if the recoverable amount subsequently increases.

Gains or losses from divestment of intangible assets are recognized in the income statement under "Other external expenses".

Property, plant and equipment
Plant and machinery and other fixtures and equipment are measured at cost less accumulated depreciation and impairment losses. Land and buildings are measured using the revaluation model at cost with the addition of revaluations less accumulated depreciation and impairment losses. Property, plant and equipment under construction are measured at cost.

Cost comprises the cost of acquisition and expenses directly related to the acquisition up until the time when

Notes to the consolidated financial statements

Note 1
Accounting policies (continued)

the asset is ready for use as well as costs of restoration to the extent that a provision is recognized at the same time.

In the case of assets of own construction, cost comprises direct and indirect expenses for labor, materials, components and sub-suppliers. Borrowing costs related to construction of major property, plant and equipment are recognized in cost over the period of construction.

Revaluations of land and buildings are performed on the basis of Management's estimate of fair value which is based on an independent valuation. Revaluations less depreciation and deferred taxes are transferred to the revaluation reserve under equity.

Property, plant and equipment are divided into sub-assets if the future useful life of the individual assets is different.

Depreciation based on cost and revaluations reduced by any residual value is calculated on a straight-line basis over the expected useful lives of the assets, which are:

Buildings	13–40 years
Plant and machinery	5–10 years
Other fixtures and equipment	4–20 years

Land is not depreciated.

The residual value and useful lives of the assets are assessed annually and adjusted if necessary at the balance sheet date.

Property, plant and equipment are tested for impairment when there is an indication of impairment. Impairment indicators comprise e.g.:

- Reduced earnings compared to expected future results.
- Material negative development trends in the sector or the economy in the enterprise's markets.
- Damage to the asset or changed use of the asset.

Impairment losses relating to property, plant and equipment are reversed if the recoverable amount subsequently increases.

Gains and losses from sale of property, plant and equipment are recognized in the income statement under "Other external expenses".

Investment in joint venture
Investment in joint venture is recognized and measured under the equity method.

The item "Result of investment in joint venture" in the income statement includes the proportionate share of the result after tax.

Other securities and investments
Investments are measured at fair value at the balance sheet date.

Fair value adjustments are recognized through other comprehensive income under the "Reserve for financial assets measured at fair value".

Securities in the form of loans are measured in the balance sheet at amortized cost less expected credit loss.

Inventories
Inventories are measured at cost under the FIFO method. Cost is determined using a standard cost method that includes direct and indirect production costs. Direct production costs comprise raw materials, consumables and direct labor costs, whereas indirect production costs comprise indirect materials and labor costs, maintenance and depreciation of machinery, production buildings and equipment used in the production process as well as the cost of plant administration and management.

Please refer to note 2 "Key accounting estimates and judgements" for information about write-downs.

Receivables
Receivables are measured in the balance sheet at amortized cost less expected credit loss.

Contract work in progress
Contract work in progress is measured at the selling price of the work completed calculated on the basis of the stage of completion. The stage of completion is determined on the basis of the share of contract costs incurred compared to the total expected contract costs. This method is found to be the best and most prudent method to reflect the progress. Where it is probable that total contract expenses will exceed the total revenue from a contract, the expected loss is recognized as an expense in the income statement.

Where the selling price cannot be measured reliably, the selling price is measured at the lower of expenses incurred and net realizable value.

Prepayments are set off against contract work in progress. Received payments on account exceeding the performed share of contracts are determined separately for each contract and recognized in "Contract work in progress" under current liabilities.

Expenses relating to sales work and the winning of contracts are recognized in the income statement as incurred.

Reserves
The revaluation reserve includes a reserve for revaluation of land and buildings after depreciation and deferred tax.

The foreign currency translation reserve comprises all translation adjustments arising from the translation of financial statements of group enterprises using another functional currency than Danish kroner as well as translation adjustments concerning non-current intercompany balances that are considered an addition to the net investment in such enterprises.

Reserve for unpaid share capital comprises the deviation between the amount by which the share capital has been increased and the amount paid.

Notes to the consolidated financial statements

Note 1
Accounting policies (continued)

Reserve for value adjustment of hedging instruments comprises the accumulated net change in the fair value of hedging transactions which meet the criteria of future cash flow hedges and where the hedged transaction has not yet been completed.

Reserve for financial assets measured at fair value comprises the accumulated net change in the fair value of financial assets classified as financial assets measured at fair value through other comprehensive income.

Dividend
Proposed dividend for the financial year is recognized in "Retained earnings".

Pension obligations and similar obligations
The costs of defined contribution plans are recognized in the income statement in the financial year to which they relate.

The costs and liabilities of defined benefit plans are determined in accordance with the projected unit credit method. The liability is calculated annually by an actuary. Actuarial gains and losses are recognized in full in "Other comprehensive income". Plan assets are only recognized to the extent that the Group is able to derive future economic benefits such as refunds from the plan or reductions of future contributions.

Costs related to other non-current staff benefits are accrued over the employees' expected average working life.

Deferred tax
Deferred income tax is measured using the balance sheet liability method in respect of temporary differences arising between the tax bases of assets and liabilities. The tax base of tax loss carryforwards is deducted from deferred tax when it is probable that the losses may be utilized. Deferred tax is measured on the basis of the tax rules and tax rates expected to be in force on elimination of temporary differences. Any changes in deferred tax due to changes in tax rates are recognized in the income statement with the share attributable to the results for the year, unless they relate to items recognized either in other comprehensive income or directly in shareholders' equity.

Provisions
Provisions are recognized when – in consequence of a previous event – the Group has a legal or constructive obligation and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are measured at Management's estimate of the discounted amount expected to be required to repay the obligation.

Financial liabilities
Loans such as bonds, mortgage loans and loans from credit institutions are recognized initially at the proceeds received net of transaction expenses incurred. Subsequently, the loans are measured at amortized cost, corresponding to capitalized value, using the effective interest rate; the difference between the proceeds and the nominal value is recognized in the income statement over the loan period. Other debts are measured at amortized cost, mainly corresponding to nominal value.

Deferred income
Deferred income comprises payments received in respect of income in subsequent years and is primarily related to government grants.

Other areas

Cash flow statement
The Group's cash flow statement, which is prepared according to the indirect method, shows the Group's cash flows for the year broken down by operating, investing and financing activities as well as the Group's cash and cash equivalents at the beginning and end of the year.

The Group's cash comprises the Group's cash and cash equivalents and cash deposits with Haldor Topsøe Holding A/S.

Financial highlights
The financial ratios have been prepared in accordance with the Recommendations & Financial Ratios produced by the Danish Finance Society and CFA Society Denmark.

The key figures and financial ratios have been calculated as follows:

$$\textbf{Gross margin} = \frac{\text{Gross profit x 100}}{\text{Revenue}}$$

$$\textbf{EBITDA margin} = \frac{\text{EBIT + depreciation, amortization etc. x 100}}{\text{Revenue}}$$

$$\textbf{EBIT margin} = \frac{\text{EBIT x 100}}{\text{Revenue}}$$

$$\textbf{Return on invested capital} = \frac{\text{EBIT x 100}}{\text{Average invested capital}}$$

$$\textbf{Equity ratio} = \frac{\text{Equity at year-end x 100}}{\text{Total assets}}$$

$$\textbf{Return on equity} = \frac{\text{Net profit x 100}}{\text{Average equity}}$$

Notes to the consolidated financial statements

Note 2
Key accounting estimates and judgements

In accordance with general accounting policies, determination of the carrying amount of certain assets and liabilities requires assessments and estimates of future events. Assessments and estimates are performed based on historical experience and other factors which Management considers reasonable under the circumstances. These assumptions may be incomplete or inaccurate and unexpected issues may arise, which implies that the assessments and estimates made are subject to some uncertainty. Special risks for the Group appear from the Risk management section.

Land and buildings
The Group's land and buildings are measured in accordance with the revaluation model. Fair value is determined on the basis of a market-based estimate performed by an independent, qualified valuation expert. The frequency of an independent valuation depends on the extent to which Management assesses that the market development shows signs of significant difference between the carrying amount and fair value. Please refer to note 12 for further information.

Other investments
Other investments are measured at fair value at the balance sheet date. To the extent that fair value cannot be derived from an active market, it is required that Management assesses and selects an appropriate method for determination of the fair value. In this case, the fair value is measured at the discounted value of expected future cash flows. Material assumptions comprise expected future cash flows, discount rates and growth rates for the period. Please refer to note 13 for further information.

Inventory
The standard cost calculations are reviewed on a regular basis to ensure that all relevant assumptions such as prices, output and capacity utilization are incorporated correctly. Changes in the calculation method used to calculate indirect production costs may impact the gross margin and the overall measurement of inventories.

Inventories are written down to net realizable value if this is lower than cost. The need to write down inventories is primarily assessed based on negotiability and production quality. The net realizable value is calculated as the total of future revenue expected to be generated in the process of normal operations and determined by allowing for marketability, obsolescence and development in expected selling price less selling expenses. Please refer to note 14 for further information.

Revenue from engineering projects
In Management's opinion, the Group's sale of engineering projects is to a high degree individually adjusted, and contract work in progress is consequently measured at the selling price of the work completed based on the stage of completion. The stage of completion is determined on the basis of the share of contract costs incurred compared to the total expected contract costs. These costs are partly based on an estimate which to a high degree is based on historical experience. Expected income and costs of engineering projects may be adjusted along with the finalization of the projects and clarifications of uncertainties. Parallel changes to the engineering contract may occur and certain assumptions in the contract may not be met.

Warranty provision for engineering projects
The evaluation of the warranty provision for engineering projects is based on historical levels. Furthermore, the warranty provision also reflects the risks associated with bringing new technologies to the market as well as executing projects in countries with higher geopolitical risks. Please refer to note 24 for further information.

Contingent liabilities and lawsuits
As part of the Group's business, Topsoe may become party to a lawsuit and/or dispute. In such cases, the potential liabilities and their likelihood are evaluated. The evaluation is based on available information and legal assessment from advisors. Assessing the final outcome of lawsuits/disputes is difficult and the outcome may thus deviate from the evaluation made by Topsoe.

Research and development costs
Research costs are expensed when incurred. Development costs which do not meet the requirements of capitalization are expensed when incurred. Management assesses whether the capitalization requirements are met based on expectations of the technical possibility of completing the development project, expectations of the existence of a market for the product, etc.

Notes to the consolidated financial statements

Note 3
Revenue

The Group's revenue can be divided into two main categories: catalyst sales and technology sales. Catalyst sales comprise the sale of catalysts. Technology sales comprise basic engineering design, license fee and hardware.

Revenue from catalyst sales is recognized when control has been transferred, which typically takes place based on Incoterms. The majority of catalyst sales are paid after delivery with typically 30-60 days of credit, but in certain situations the Group receives prepayments.

Revenue from technology sales is recognized over time according to the percentage-of-completion method based on actual versus forecasted cost. Technology sales are paid in installments during the contract's life time. The Group strives to be cash flow positive on all technology contracts at any time during project execution.

The transaction price of a contract is allocated to performance obligations, e.g. delivered catalyst and delivered technology. Technology is considered to be one performance obligation, since the deliveries must be treated as a whole and not as distinct elements.

DKK million	**2018**	**2017**
Catalyst	3,851	3,393
Technology	1,766	1,618
Total disaggregation of revenue from contract with customers	**5,617**	**5,011**
Future revenue regarding unsatisfied or partially unsatisfied performance obligations except perfomance obligations due within a year. The majority is realized in 2020.	472	-
Revenue recognized that was included in contract liability balance at the beginning of the year	813	-
Revenue recognized from performance obligations satisfied in previous periods	7	-
Trade receivables	717	995
Contract work in progress	187	173
Contract assets at December 31	**904**	**1,168**
Prepayments from customers	418	229
Contract work in progress	492	675
Contract liabilities at December 31	**910**	**904**

Trade receivables decreased during the year, mainly due to large overdues being paid.

The increase in prepayments from customers mainly relates to prepayments from suspended contracts, part of which were transferred from contract work in progress, liabilities to prepayments, liabilities.

Contract work in progress recognized under liabilities decreased during the year due to progression and finalization of a number of technology contracts.

Note 4
Other operating income

Government grants for research and development amounting to DKK 11 million (2017: DKK 8 million) have been recognized in the income statement under "Other operating income".

Notes to the consolidated financial statements

Note 5
Staff expenses

DKK million	**2018**	**2017**
Wages and salaries	1,391	1,281
Pensions – defined contribution plans	137	137
Pensions – defined benefit plans	6	8
Other social security contributions	138	135
Total	**1,672**	**1,561**
Capitalization of work performed on property, plant and equipment	-16	-22
Total staff expenses	**1,656**	**1,539**
Executive Committee salary	22	22
Executive Committee pension	4	4
Fee to Board of Directors	7	7
Total remuneration to Executive Committee and Board of Directors	**33**	**33**
Average number of employees	2,246	2,527
Of which in Denmark	1,609	1,737

Note 6
Depreciation, amortization and impairment losses

DKK million	**2018**	**2017**
Rights	3	3
Patents	7	8
Software	10	14
Land and buildings	18	18
Plant and machinery	136	135
Other fixtures and equipment	82	79
Total depreciation, amortization and impairment losses	**256**	**257**

Note 7
Result of investment in joint venture

DKK million	**2018**	**2017**
Share of result of joint venture	-10	-30
Recognition of badwill	-2	0
Fair value adjustment of investment in joint venture	2	0
Total result of investment in joint venture	**-10**	**-30**

Notes to the consolidated financial statements

Note 8
Financial income

DKK million	**2018**	**2017**
Dividend from other investments	16	24
Interest received from the parent company	2	2
Interest income	9	6
Gains on derivative financial instruments (currency)	5	0
Foreign currency translation adjustment	38	40
Other financial income	1	1
Total financial income	**71**	**73**

Note 9
Financial expenses

DKK million	**2018**	**2017**
Interest expenses	45	50
Loss on derivative financial instruments (interest)	0	1
Foreign currency translation adjustment	32	58
Total financial expenses	**77**	**109**

Note 10
Tax

DKK million	**2018**	**2017**
Current tax for the year	275	153
Change in deferred tax for the year	-105	40
Change in corporate tax rate	0	-22
Adjustments to prior years	12	-3
Total tax	**182**	**168**
Tax on continuing operations	185	126
Tax on discontinuing operations	-3	42
Total tax	**182**	**168**

%	**2018**	**2017**
Danish corporate tax rate	22.0	22.0
Non-deductible expenses	0.2	1.4
Income not subject to tax	-0.2	-1.0
Differences in foreign tax rates	0.0	5.4
Adjustments relating to prior years	3.4	-0.2
Change in corporate tax rate	0.0	-3.8
Other adjustments	1.4	0.0
Effective tax rate	**26.8**	**23.8**

Notes to the consolidated financial statements

Note 11
Intangible assets

DKK million	Rights	Patents	Software	Intangible assets under construction
Cost at January 1, 2018	25	115	169	0
Additions during the year	0	16	1	3
Disposals during the year	0	-44	-1	0
Transfers during the year	0	0	4	1
Cost at December 31, 2018	**25**	**87**	**173**	**4**
Amortization and impairment losses at January 1, 2018	6	70	149	0
Amortization for the year	3	7	10	0
Reversal of amortization and impairment losses on assets sold and scrapped	0	-31	-1	0
Amortization and impairment losses at December 31, 2018	**9**	**46**	**158**	**0**
Carrying amount at December 31, 2018	**16**	**41**	**15**	**4**
Research and development costs expensed in 2018				505

DKK million	Rights	Patents	Software	Intangible assets under construction
Cost at January 1, 2017	25	110	180	3
Foreign currency translation adjustment	0	0	-1	0
Additions during the year	2	18	6	5
Disposals during the year	-2	-13	-24	0
Transfers during the year	0	0	8	-8
Cost at December 31, 2017	**25**	**115**	**169**	**0**
Amortization and impairment losses at January 1, 2017	3	68	141	0
Amortization for the year	3	8	18	0
Reversal of amortization and impairment losses on assets sold and scrapped	0	-6	-10	0
Amortization and impairment losses at December 31, 2017	**6**	**70**	**149**	**0**
Carrying amount at December 31, 2017	**19**	**45**	**20**	**0**
Research and development costs expensed in 2017				470

Notes to the consolidated financial statements

Note 12
Property, plant and equipment

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment under construction
Cost at January 1, 2018	1,007	2,277	998	250
Foreign currency translation adjustment	4	21	0	6
Additions during the year	4	29	34	184
Disposals during the year	-2	-6	-2	-20
Transfers during the year	0	47	23	-75
Cost at December 31, 2018	**1,013**	**2,368**	**1,053**	**345**
Revaluation at January 1, 2018	326	8	0	0
Foreign currency translation adjustment	6	0	0	0
Additions during the year	30	0	0	0
Revaluation at December 31, 2018	**362**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2018	574	1,494	757	0
Foreign currency translation adjustment	2	12	1	0
Depreciation for the year	18	136	82	0
Reversal of depreciation and impairment losses on assets sold and scrapped	-1	-6	-2	0
Depreciation and impairment losses at December 31, 2018	**593**	**1,636**	**838**	**0**
Carrying amount at December 31, 2018	**782**	**740**	**215**	**345**
Carrying amount at December 31, 2018, under the depreciated cost model	474	740	215	345
Borrowing costs capitalized in 2018				2

Where Management assesses that a revaluation is material, the properties in question have been revalued by an independent assessor in connection with closing of the accounts, latest in 2018.

Carrying amount of finance lease assets	**122**	**0**	**0**	**0**

Notes to the consolidated financial statements

Note 12
Property, plant and equipment (continued)

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment under construction
Cost at January 1, 2017	1,280	3,547	1,019	317
Foreign currency translation adjustment	-31	-148	-8	-14
Additions during the year	2	48	66	95
Disposals during the year	-244	-1,267	-124	-6
Transfers during the year	0	97	45	-142
Cost at December 31, 2017	**1,007**	**2,277**	**998**	**250**
Revaluation at January 1, 2017	344	8	0	0
Foreign currency translation adjustment	-18	0	0	0
Revaluation at December 31, 2017	**326**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2017	646	2,155	762	0
Foreign currency translation adjustment	-14	-87	-7	0
Depreciation for the year	26	186	95	0
Reversal of depreciation and impairment losses on assets sold and scrapped	-84	-760	-93	0
Depreciation and impairment losses at December 31, 2017	**574**	**1,494**	**757**	**0**
Carrying amount at December 31, 2017	**759**	**791**	**241**	**250**
Carrying amount at December 31, 2017, under the depreciated cost model	487	791	241	250
Borrowing costs capitalized in 2017				2
Carrying amount of finance lease assets	**125**	**0**	**0**	**0**

Notes to the consolidated financial statements

Note 12
Property, plant and equipment (continued)

DKK million	Level 1	Level 2	Level 3
Office buildings in Denmark	0	0	232
Production plants in Denmark and US	0	0	329
Excess land in US	0	99	0
Distribution of assets stated at fair value at December 31, 2018	**0**	**99**	**561**

DKK million	Level 1	Level 2	Level 3
Office buildings in Denmark	0	0	231
Production plants in Denmark and US	0	0	336
Excess land in US	0	67	0
Distribution of assets stated at fair value at December 31, 2017	**0**	**67**	**567**

Level 1: Quoted prices (unadjusted) in an active market for identical assets.

Level 2: Input other than quoted prices included within level 1 that is observable for asset, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3: Input for assets that are not based on observable market data (i.e. unobservable inputs).

There have been no transfers between levels 1 and 2 during the year.

The fair value of office buildings in Denmark has been derived using a market approach primarily based on rental per m^2 for comparable buildings and an interest rate. The rental per m^2 is set at DKK 700-1,100 for office buildings and DKK 300-700 for storage and laboratories. The fair value of production plants has been derived using a cost approach, which reflects the cost of constructing similar buildings at an equivalent age and use. Excess land in US is valutated using a sales comparison approach. Sales prices of comparable land in close proximity are adjusted for differences in key attributes such as property size. The sales price per acre is set at USD 152,500.

The current use of land and buildings is considered to represent the highest and best use of the assets.

The valuation methods have not changed from last year.

DKK million	2018	2017
Fair value of level 3 assets at January 1	**567**	**773**
Additions	4	2
Disposals	-1	-160
Included in the income statement as depreciation	-15	-22
Foreign currency translation adjustment	6	-26
Fair value of level 3 assets at December 31	561	567

Notes to the consolidated financial statements

Note 13
Investments

DKK million	Investment in joint venture	Finance lease receivables	Other securities and investments	Other receivables
Cost at January 1, 2018	39	0	136	69
Foreign currency translation adjustment	0	0	0	1
Additions during the year	0	9	76	7
Disposals during the year	0	0	-2	-52
Transfers during the year	-39	0	-2	2
Cost at December 31, 2018	**0**	**9**	**208**	**27**
Value adjustment at January 1, 2018	-39	0	180	-15
Net result for the year	-10	0	0	0
Disposals during the year	0	0	-6	0
Value adjustments for the year	27	0	-38	-5
Investments with negative equity transferred to receivables	-14	0	0	14
Transfers during the year	36	0	0	0
Value adjustment at December 31, 2018	**0**	**0**	**136**	**-6**
Carrying amount at December 31, 2018	**0**	**9**	**344**	**21**
Of this, less than 1 year		1		

DKK million	Investment in joint venture	Other securities and investments	Other receivables
Cost at January 1, 2017	39	141	68
Foreign currency translation adjustment	0	0	-3
Additions during the year	0	4	41
Disposals during the year	0	-9	-37
Cost at December 31, 2017	**39**	**136**	**69**
Value adjustment at January 1, 2017	-25	207	-17
Net result for the year	-30	0	0
Disposals during the year	0	-2	17
Value adjustments for the year	1	-25	0
Investments with negative equity transferred to receivables	15	0	-15
Value adjustment at December 31, 2017	**-39**	**180**	**-15**
Carrying amount at December 31, 2017	**0**	**316**	**54**

Notes to the consolidated financial statements

Note 13
Investments (continued)

Investment in joint venture is specified as follows:

Ferrostaal Topsoe Projects GmbH, Essen, Germany
The joint venture Ferrostaal Topsoe Project GmbH was fully acquired during 2018 and is now 100% owned by the Group and fully consolidated in the Group from August 2018. Ferrostaal Topsoe Project GmbH has changed name to Haldor Topsoe Germany GmbH.

Saturn FS Gas Chemicals LLC, Wilmington, Delaware, US
After the Group has obtained 100% ownership of Haldor Topsoe Germany GmbH as mentioned above, the Group became part of the joint venture Saturn FS Gas Chemicals LLC. The Group owns 50% of the joint venture. The investment is measured under the equity method. The negative equity has been offset against receivables from the joint venture.

Other securities and investments are specified as follows:

Karnaphuli Fertilizer Limited, Bangladesh (KAFCO)
The Group holds shares in KAFCO of nominally BDT 692 million, which equals 15.01% of the shares in KAFCO. The shares are measured at fair value based on a discounted cash flow calculation on the basis of the present budgets and forecasts of KAFCO. The calculation is moreover based on material assumptions in terms of growth rate and discount rate. The discount rate is determined based on Management's estimate of general capital market conditions and the specific risk profile and has been set at 11.4% (2017: 12.0%) after tax. The growth rate in the terminal period has by Management been estimated at 0% (2017: 0%). Based on these criteria, the KAFCO shares have been written down by DKK 37 million (2017: DKK 42 million).

A change in the discount rate of -1% or +1%, respectively, would impact the value by -7% or +8%, respectively. A change in the growth rate in the terminal period of -10% or +10%, respectively, would impact the value by -8% or +7%, respectively.

Chambal Fertilizer and Chemical Ltd., India
The Group has an investment in Chambal Fertilizer and Chemicals Ltd., corresponding to 0.34% of the share capital. During 2018, the Group has sold 30% of the investment. The remaining investment has been sold in the beginning of 2019. The investment is measured at fair value based on listed market value.

GTLA Holding LP, US
The Group has invested in GTLA Holding LP, corresponding to 3% of the share capital. The purpose of the company is to develop a project regarding construction of a gas-to-liquid plant.

Ramagundam Fertilizers and Chemicals Limited, India
The Group has invested in Ramagundam Fertilizers and Chemicals Limited, corresponding to 3.9% of the share capital. The company is constructing a fertilizer plant in India. The Group is obligated to invest an additional amount of up to INR 230 million.

Notes to the consolidated financial statements

Note 14
Inventories

DKK million	**2018**	**2017**
Raw materials and consumables	273	258
Work in progress	135	115
Finished goods	730	670
Inventories at December 31	**1,138**	**1,043**
Cost of sales for the year	2,038	1,832
Impairment losses for the year	46	63
Reversed impairment losses for the year	-34	-46

Reversal of impairment losses is attributable to disposal or reuse of impaired goods in the production.

Note 15
Trade receivables

DKK million	**2018**	**2017**
Trade receivables, gross	**739**	**1,016**
Loss allowance at January 1	-21	-31
Increase in loss allowance for the year	-22	-5
Reversal of loss allowance, prior years	21	15
Loss allowance at December 31	**-22**	**-21**
Trade receivables at December 31	**717**	**995**
Of this, due after more than 1 year	4	8
Realized losses for the year	19	10

Receivables, gross due at December 31 have the following aging in %:	**2018**	**2017**
Not due	65	51
1-90 days	20	24
91-180 days	4	12
181+ days	11	13

	Gross trade receivables DKK million	**Expected loss rate %**	**Loss allowance DKK million**
Not due	476	0	0
1-90 days	150	0	0
91-180 days	30	0	0
181-360 days	47	32	15
360+ days	36	19	7
Total	**739**		**22**

If IFRS 9 had been implemented as at December 31, 2017, the loss allowance would have amounted to DKK 15 million.

Notes to the consolidated financial statements

Note 16
Contract work in progress

DKK million	2018	2017
Selling price of work performed at the balance sheet date	5,911	5,581
Payments received on account	-6,216	-6,083
Contract work in progress at December 31	**-305**	**-502**
Contract work in progress recognized in assets	187	173
Contract work in progress recognized in liabilities	-492	-675
Contract work in progress at December 31	**-305**	**-502**

Note 17
Receivables from the parent company

DKK million	2018	2017
Deposit with the parent company	0	129
Unpaid share capital	241	241
Declared, unpaid dividend	-241	0
Other receivables/payables	190	1
Receivables from the parent company at December 31	**190**	**371**

Deposit with the parent company is part of a cash pooling arrangement.

Note 18
Other receivables

DKK million	2018	2017
Receivable regarding VAT and tax	76	116
Fair value of derivative financial instruments	0	23
Other receivables	45	76
Other receivables at December 31	**121**	**215**
Of this, due after more than 1 year	32	41

Note 19
Share capital

Number of shares	2018	2017
Shares of a nominal value of DKK 376,000,000	**376,000**	**376,000**

The share capital consists of 376,000 shares with a nominal value of DKK 1,000 each. No shares carry any special right.

Notes to the consolidated financial statements

Note 20
Reserves

DKK million	Revaluation reserve	Foreign currency translation reserve	Reserve for unpaid share capital	Reserve for value adjustment of hedging instruments	Reserve for finan-cial assets measured at fair value	Total
Reserves at January 1, 2018	198	20	241	6	177	642
Foreign currency translation adjustment	0	38	0	0	-1	37
Derivative financial instruments used for hedging of future cash flows	0	0	0	-3	0	-3
Realized derivative financial instruments transferred to financial income/expense	0	0	0	-6	0	-6
Fair value adjustment of financial assets	0	0	0	0	-39	-39
Other	0	-4	0	0	0	-4
Revaluation of land	30	0	0	0	0	30
Tax	-7	0	0	1	1	-5
Total reserves at December 31, 2018	**221**	**54**	**241**	**-2**	**138**	**652**

DKK million	Revaluation reserve	Foreign currency translation reserve	Reserve for unpaid share capital	Reserve for value adjustment of hedging instruments	Reserve for finan-cial assets measured at fair value	Total
Reserves at January 1, 2017	181	171	241	-4	207	796
Foreign currency translation adjustment	0	-175	0	0	0	-175
Recycling currency translation adjustments from discontinuing operations	0	24	0	0	0	24
Derivative financial instruments used for hedging of future cash flows	0	0	0	12	0	12
Realized derivative financial instruments transferred to financial income/expense	0	0	0	1	0	1
Fair value adjustment of financial assets	0	0	0	0	-26	-26
Tax adjusted on revaluation of land and buildings	17	0	0	0	0	17
Tax	0	0	0	-3	-4	-7
Total reserves at December 31, 2017	**198**	**20**	**241**	**6**	**177**	**642**

Notes to the consolidated financial statements

Note 21
Dividend

Proposed dividend constitutes DKK 0 million (2017: DKK 225 million) corresponding to DKK 0 (2017: DKK 598.4) per share.

Interim dividend of DKK 650 million for 2018 and dividend of DKK 225 million for 2017 have been paid during 2018 (2017: DKK 125 million and DKK 209 million) corresponding to DKK 2,327.13 (2016: DKK 888.30) per share.

Dividend policy
Haldor Topsoe Group is financing the operations of Haldor Topsøe Holding A/S through dividend payments. The liquidity effect of the expected future dividend payments has been incorporated in the cash flow forecasts of Haldor Topsoe Group.

Note 22
Pension obligations and similar obligations

The Group has entered into pension plans with a considerable number of its employees. Most of the plans are defined contribution plans and only a small part is defined benefit plans.

Defined contribution plans
The Group finances the plans by currently paying a premium to independent insurance companies that are responsible for the pension obligations. Once the pension contributions to the defined contribution plans have been paid, the Group has no further pension obligations to current or terminated employees.

Defined benefit plans
The Group has made agreements with specific groups of employees regarding payment of certain benefits, including pension. These pensions mainly relate to certain employees in the Group's US subsidiary where the plan partly consists of a basic pension and partly of an additional pension for selected members of management. The pension obligations are partly hedged through an independent fund. Actuarial valuation is performed annually. In addition, employees in India and Germany are covered by defined benefit plans.

DKK million	**2018**	**2017**
Pension costs	4	6
Interest expenses	11	10
Interest income on plan assets	-9	-8
Total pension related to defined benefit recognized in staff expenses	**6**	**8**

Applied actuarial assumptions in %	**2018**	**2017**
Discount rate	2.00-7.63	3.28
Future pay increases	2.50-9.81	3.00

A change in the discount rate of -0.5% or +0.5%, respectively, would impact the defined benefit obligation by +5% or -4%, respectively. A change in the future pay increase of -0.5% or +0.5, respectively, would impact the defined benefit obligation by -1% or +1%, respectively.

The weighted average duration of the defined benefit obligation is 7.7-10.9 years (2017: 9.5 years).

Notes to the consolidated financial statements

Note 22
Pension obligations and similar obligations (continued)

%	2018	2017
US	32	35
International	28	33
Global	3	4
Shares	**63**	**72**
US investment grade	16	7
High yield	11	9
Inflation protected	1	1
Other	1	1
Bonds	**29**	**18**
Real estate	3	3
Commodities	4	4
Other	1	3
Distribution of plan assets at December 31	**100**	**100**

DKK million	2018	2017
Present value of pension obligations	294	288
Fair value of pension plan assets	-251	-258
Net obligation at December 31	**43**	**30**
Present value of pension obligations at January 1	288	320
Foreign currency translation adjustment	55	-36
Pension costs	4	6
Interest expenses	11	10
Gain/loss on curtailments	0	-12
Actuarial gains and losses, demographic assumption	6	-4
Actuarial gains and losses, financial assumption	-33	25
Pension paid	-37	-21
Present value of pension obligations at December 31	**294**	**288**
Fair value of pension plan assets at January 1	258	246
Foreign currency translation adjustment	19	-30
Interest on pension assets	9	8
Return on plan assets excl. interest on pension assets	-22	33
Paid by the company	24	22
Pension paid	-37	-21
Fair value of pension plan assets at December 31	**251**	**258**

Expected defined benefit pension payments by the Group in 2019 amount to DKK 34 million.

Notes to the consolidated financial statements

Note 23
Deferred tax

DKK million	**2018**	**2017**
Deferred tax at January 1	522	514
Foreign currency translation adjustment	1	-3
Tax on equity items	7	-1
Tax for the year	-149	-3
Tax previous years	0	15
Deferred tax at December 31	**381**	**522**
Intangible assets and property, plant and equipment	158	138
Inventories	12	15
Work in progress	294	386
Provisions	-34	-27
Other	-49	10
Deferred tax at December 31	**381**	**522**
Of this, due after more than 1 year	258	369

Note 24
Provisions

DKK million	**Warranty provision for engineering projects and catalysts**	**Waste disposal**	**Other**	**Total**
Provisions at January 1, 2018	205	1	49	255
Reversals during the year	-2	-1	-3	-6
Provisions for the year	26	0	12	38
Provisions at December 31, 2018	**229**	**0**	**58**	**287**
Of this, due after more than 1 year				287

DKK million	**Warranty provision for engineering projects and catalysts**	**Waste disposal**	**Other**	**Total**
Provisions at January 1, 2017	198	1	4	203
Reversals during the year	-7	0	0	-7
Provisions for the year	14	0	45	59
Provisions at December 31, 2017	**205**	**1**	**49**	**255**
Of this, due after more than 1 year				255

Warranty provision can be impacted by unexpected quality issues on our catalyst or technology solutions, e.g. on new technologies.

Notes to the consolidated financial statements

Note 25
Non-current liabilities

DKK million	2018	2017
Bonds		
After 5 years	0	0
Between 1 and 5 years	499	499
More than 1 year	**499**	**499**
Less than 1 year	0	499
Bonds at December 31	**499**	**998**
Mortgage debt		
After 5 years	15	18
Between 1 and 5 years	12	12
More than 1 year	**27**	**30**
Less than 1 year	3	3
Mortgage debt at December 31	**30**	**33**
Credit institutions		
After 5 years	157	93
Between 1 and 5 years	541	482
More than 1 year	**698**	**575**
Less than 1 year	161	110
Credit institutions at December 31	**859**	**685**
Lease obligations		
After 5 years	124	126
Between 1 and 5 years	5	4
More than 1 year	**129**	**130**
Less than 1 year	0	0
Lease obligations at December 31	**129**	**130**
Deferred income		
After 5 years	0	0
Between 1 and 5 years	0	0
More than 1 year	**0**	**0**
Less than 1 year	14	1
Deferred income at December 31	**14**	**1**

The Group leases property under a non-cancellable finance lease agreement. The lease runs until 2036. At the end of the lease period, the Group is obligated to purchase the property at a price of DKK 74 million.

Interest bearing debt at January 1	1,846	1,981
Foreign currency translation adjustment	-2	-9
Raising loans	299	0
Installments	-626	-126
Interest bearing debt at December 31	**1,517**	**1,846**

Notes to the consolidated financial statements

Note 26
Other payables

DKK million	**2018**	**2017**
Staff-related items	335	272
Fair value of derivative financial instruments	5	3
Tax-related items	4	4
Other payables	261	228
Other payables at December 31	**605**	**507**
More than 1 year	2	3
Less than 1 year	603	504
Other payables at December 31	**605**	**507**

Note 27
Prepayments from customers

DKK million	**2018**	**2017**
Prepayments related to sale of goods	418	229
Prepayments from customers at December 31	**418**	**229**

Note 28
Assets provided as security

DKK million	**2018**	**2017**
Carrying amount of non-current assets (land and buildings) provided as security	23	203
Remaining balance of loans secured by non-current assets	30	33
Nominal value of the loans (real estate deeds and owners' mortgage deeds)	33	41
Remaining balance of loan secured by all assets of Haldor Topsoe Inc.	0	12

Assets are provided as security for mortgage debt, and for 2017 also for other long-term loans. In case of other debt to the secured creditor, the asset(s) provided as security may – until release thereof – serve as security for any present or future obligation that the Group may have towards such parties.

Notes to the consolidated financial statements

Note 29
Guarantees

DKK million	**2018**	**2017**
Guarantees given by banks and credit insurance institutions on the Group's behalf for contract work, etc.	1,040	735
Guarantees issued at December 31	**1,040**	**735**
Less than 1 year	507	292
Between 1 and 5 years	505	413
After 5 years	28	30
Guarantees issued at December 31	**1,040**	**735**

Note 30
Contractual obligations

DKK million	**2018**	**2017**
Less than 1 year	100	90
Between 1 and 5 years	297	238
After 5 years	352	404
Contractual obligations regarding leases at December 31	**749**	**732**
Payments for the year recognized as operating lease expenses	102	97

Leases and rental agreements relate mainly to premises and equipment, etc. and extend in some cases to 2032.

The Group is obligated to invest an additional DKK 29 million in companies included under "Other investments".

Note 31
Contingent liabilities

The Group's property in Frederikssund, Denmark, has been found to be contaminated. Management assesses that the remediation costs will not be significant.

Through participation in joint taxation scheme with Haldor Topsøe Holding A/S, the Group is jointly and severally liable for taxes etc. payable in Denmark.

Note 32
Fee to auditors appointed at the general meeting

Please refer to the note in the consolidated financial statements for the parent company, Haldor Topsøe Holding A/S.

Notes to the consolidated financial statements

Note 33
Related parties

Control
Haldor Topsøe Holding A/S, Lyngby, Denmark – shareholder

DKK million	**2018**	**2017**
Interest received from the parent company	2	2
Receivables from the parent company at December 31	190	371

DKK million **Related parties**	**Transactions**	**2018**	**2017**
Companies under common control	Rent	2	0
	Deposit	2	2
Joint venture	Outstanding balance	15	0

Remuneration to Executive Committee and Board of Directors, please refer to note 5.

Intercompany transactions have been eliminated in the consolidated financial statements.

Note 34
Derivative financial instruments

DKK million	**Contract amount 2018**	**Fair value 2018**	**Contract amount 2017**	**Fair value 2017**
Sale of KWD (exchange rate 21.631), matures in 2018	0	0	193	11
Forward exchange contracts at December 31	**0**	**0**	**193**	**11**

The Group uses forward exchange contracts to hedge against changes in exchange rates in volatile currencies for contract-related payments up to 12 months forward. The fair value of the contracts is recognized in the balance sheet through other comprehensive income. The Group thus applies the rules on hedge accounting.

DKK million	**Contract amount 2018**	**Fair value 2018**	**Contract amount 2017**	**Fair value 2017**
EUR interest rate swap (4.62%), matures on December 31, 2021	24	-2	32	-3
Interest rate swaps at December 31	**24**	**-2**	**32**	**-3**

The Group uses interest rate swaps to hedge against changes in interest rate levels and thus reduce the interest rate risk. Interest rate swaps are used on floating rate loans. The fair value of the swaps is recognized in the balance sheet through other comprehensive income. The Group thus applies the rules on hedge accounting.

Notes to the consolidated financial statements

Note 34
Derivative financial instruments (continued)

DKK million	Contract amount 2018	Fair value 2018	Contract amount 2017	Fair value 2017
Aggregate amount of commodity swaps within metals, matures in 2020	5	0	0	0
Aggregate amount of commodity swaps within metals, matures in 2019	23	-3	3	0
Aggregate amount of commodity swaps within metals, matures in 2018	0	0	45	12
Commodity swaps at December 31	**28**	**-3**	**48**	**12**

The Group uses commodity swaps to hedge against price fluctuations in raw materials, primarily base metals (nickel, copper, and zinc) of specific production contracts. Hedging duration depends on the specific underlying contract, but it is typically less than 24 months. The fair value of the swaps is recognized directly in the income statement.

The cost of raw materials is a significant cost component in our products, and costs can fluctuate considerably. The Group seeks to minimize the risk related to commodity price fluctuations through contractual escalation clauses. In addition, the Group uses financial hedging when quoting fixed contract prices.

Note 35
Financial assets and liabilities

DKK million	2018	2017
Other securities and investments	344	316
Trade receivables	717	995
Other financial receivables	151	269
Cash	761	862
Financial assets at December 31	**1,973**	**2,442**
Bonds, mortgage debt, debt to credit institutions	1,388	1,716
Finance obligations	129	130
Trade payables	395	382
Other financial liabilities	605	507
Financial liabilities at December 31	**2,517**	**2,735**
Financial assets measured at fair value through other comprehensive income	344	316
Financial assets measured at amortized cost	1,629	2,103
Derivative financial instruments measured at fair value	0	23
Classification of financial assets at December 31	**1,973**	**2,442**
Financial liabilities measured at amortized cost	2,512	2,732
Derivative financial instruments measured at fair value	5	3
Classification of financial liabilities at December 31	**2,517**	**2,735**

Notes to the consolidated financial statements

Note 35
Financial assets and liabilities (continued)

DKK million	**2018**	**2017**
Bonds, mortgage debt and debt to credit institutions		
Payments:		
After 5 years	172	113
Between 1 and 5 years	1,094	1,032
Less than 1 year	192	644
Bonds, mortgage debt and debt to credit institutions at nominal value	**1,458**	**1,789**
Future finance charges	-70	-73
Bonds, mortgage debt and debt to credit institutions at present value	**1,388**	**1,716**
Lease obligations		
Minimum lease payments:		
After 5 years	189	196
Between 1 and 5 years	30	29
Less than 1 year	7	7
Lease obligations at nominal value	**226**	**232**
Future finance charges	-97	-102
Lease obligations at present value	**129**	**130**
Trade payables:		
Less than 1 year	395	382
Derivative financial instruments:		
After 5 years	0	0
Between 1 and 5 years	2	3
Less than 1 year	3	0
Other financial liabilities:		
Less than 1 year	600	504

Notes to the consolidated financial statements

Note 35
Financial assets and liabilities (continued)

DKK million	Level 1	Level 2	Level 3
Other securities and investments	21	0	323
Distribution of assets stated at fair value at December 31, 2018	**21**	**0**	**323**
Derivative financial instruments	0	5	0
Distribution of liabilities stated at fair value at December 31, 2018	**0**	**5**	**0**

Level 1: Listed prices in an active market for the same type of instrument.
Level 2: Listed prices in an active market for similar assets or liabilities or other valuation methods according to which all material input is based on observable market data.
Level 3: Valuation methods according to which material input is not based on observable market data.

Please refer to note 13 for information on input to valuation of investments in other enterprises stated at fair value in level 3.

Fair value of contingent considerations
In the event that the operations of the divested Automotive Business achieve certain performance criteria during the period from January 1, 2018 to December 31, 2020, as specified in an 'Volume earn-out' clause in the sales agreement, an additional cash consideration will be receivable from the buyer. At year-end, the fair value of the 'Volume earn-out' was determined to be DKK 0 million, as Management assesses that the performance criteria are unlikely to be met.

There have been no transfers between levels 1, 2 and 3 during the year.

DKK million	2018	2017
Fair value of level 3 assets at January 1	271	313
Addition	89	0
Write-down recognized in other comprehensive income	-37	-42
Fair value of level 3 assets at December 31	**323**	**271**

Financial risks
Currencies
As Topsoe operates globally, the income statement, balance sheet, and cash flows are subject to the risk of currency fluctuations, mainly in relation to Topsoe's flows of EUR and USD.

Part of this risk is mitigated through natural hedges arising from activities where Topsoe has both income and expenses in the same currency. However, the risk is not fully covered by natural hedges, and consequently Topsoe hedges certain future cash flows. A 5% increase in the USD/DKK exchange rate is assessed to have a positive EBIT effect of DKK 5-10 million.

Interest rates
Long-term debt consists of loans and bonds with fixed and floating interest rates. Topsoe's policy is to maintain a loan portfolio with 35-50% floating rate and 50-65% fixed rate. For the floating rate portion of Topsoe's interest-bearing debt, an increase in the interest rate level of 1 percentage point will increase interest expenses by DKK 4 million.

Credit
Topsoe's credit risk is primarily related to trade receivables from state-owned as well as privately owned corporations. Where feasible, we seek to mitigate credit risk by applying instruments such as letters of credit and bank guarantees as well as selective structuring of payment terms, etc. Loss allowances are assessed on an ongoing basis.

Liquidity
Topsoe must maintain sufficient liquidity to fund daily operations, debt service, and expansion. Topsoe's access to liquidity consists of cash and cash equivalents, including access to committed revolving credit facilities. The target is to maintain a minimum of DKK 500 million in unused committed revolving credit facilities at any time.

Notes to the consolidated financial statements

Note 36
Adjustments for non-cash items

DKK million	**2018**	**2017**
Financial income	-71	-79
Financial expenses	77	126
Result of investment in joint venture	10	30
Amortization, depreciation and impairment losses, including gains and losses from sale of assets	256	336
Tax	185	133
Other adjustments	16	-118
Total adjustments for non-cash items	**473**	**428**

Note 37
Change in working capital

DKK million	**2018**	**2017**
Increase (-) / decrease in inventories	-79	283
Increase (-) / decrease in receivables	297	-203
Increase / decrease (-) in contract billing	-220	-75
Increase / decrease (-) in suppliers, etc.	412	-105
Total change in working capital	**410**	**-100**

Note 38
Subsequent events

No events materially affecting the Company's financial position at December 31, 2018 have occured after the balance sheet date.

Notes to the consolidated financial statements

Note 39
List of group companies

Name	Registered office	Voting and ownership share
Haldor Topsøe International A/S	Lyngby, Denmark	100%
Subcontinent Ammonia Investment Company ApS	Lyngby, Denmark	100%
Haldor Topsøe Project Investment A/S	Lyngby, Denmark	100%
HT Ramagundam A/S	Lyngby, Denmark	100%
Haldor Topsøe Sustainables A/S	Lyngby, Denmark	100%
Topsoe Fuel Cell A/S under frivillig likvidation	Lyngby, Denmark	100%
Haldor Topsoe Germany GmbH	Essen, Germany	100%
OOO Haldor Topsøe	Moscow, Russia	100%
Haldor Topsoe, Inc.	Houston, USA	100%
Haldor Topsoe LFG Solutions Inc.	Houston, USA	100%
Haldor Topsoe Project Development Inc.	Houston, USA	100%
Pacific Coast Fertilizer LLC	Seattle, USA	77%
Haldor Topsoe Canada Limited	Vancouver, Canada	100%
Haldor Topsoe De Mexico, S. A. de C. V.	Mexico City, Mexico	100%
Haldor Topsoe do Brasil Tecnologia e Servicos em Catalisadores Eireli	Rio de Janeiro, Brazil	100%
Haldor Topsoe America Latina S.A.	Buenos Aires, Argentina	100%
Haldor Topsøe (Beijing) Co., Ltd	Beijing, China	100%
Haldor Topsøe Science & Technology (Dalian) Co., Ltd.	Dalian, China	100%
Jiangsu JITRI-Topsoe Joint R&D Center Co, Ltd.	Suzhou, China	60%
Haldor Topsoe India Pvt. Ltd.	New Delhi, India	100%
Haldor Topsoe Sdn. Bhd.	Kuala Lumpur, Malaysia	100%

Notes to the consolidated financial statements

Note 40
Business combinations

On August 3, 2018, the Group acquired the remaining 50% of the shares in the joint venture Ferrostaal Topsoe Project GmbH, whose activity is project development. The acquisition increases the Group's project planning and development competencies.

Ferrostaal Topsoe Project GmbH has changed name to Haldor Topsoe Germany GmbH. The company owns two minor subsidiaries, Haldor Topsoe Project Development Inc. and Pacific Coast Fertilizer LLC.

DKK million	**Fair value at acquisition date**
Deferred tax receivables	33
Other receivables	1
Cash	34
Assets	**68**
Pension obligation	-33
Other payables	-33
Liabilities	**-66**
Net identifiable assets acquired	**2**
Negative goodwill	-2
Net assets acquired	**0**
Cash	0
Fair value of previously owned shares in the company	0
Total consideration	**0**
Acquired cash	34
Cash consideration	**-34**

The Group's previous investment in the company has been adjusted to reflect the fair value of the shares, which has led to a fair value adjustment of DKK -2 million, which is included in "Result of investments in joint venture".

Negative goodwill amounting to DKK 2 million is included in "Result of investments in joint venture". The negative goodwill has arisen from the workforce.

The acquired business contributed revenue of DKK 1 million and net profit of DKK 15 million to the Group for the period from August 3 to December 31, 2018. If the acquisition had occured on January 1, 2018, consolidated pro-forma revenue and net profit would have been DKK 5,617 million and DKK 481 million, respectively.

Notes to the consolidated financial statements

Note 41
Discontinuing operations

On June 20, 2017, Topsoe announced that it had sold its emissions control business areas. The divestment involved a loss of DKK 362 million (mainly related to revaluation) and a loss of DKK 60 million of the discontinuing operations for eleven months of 2017. The total loss of the divestment and the discontinuing operations for 2017 of DKK 422 million was recognized in the financial statements for 2017. The divestment was finalized on November 30, 2017. The divestment comprised the subsidiaries Haldor Topsøe Catalyst (Tianjin) Co., Ltd., Haldor Topsøe Automotive Catalyst Trading (Tianjin) Co., Ltd. and Haldor Topsoe Catalisadores e Technologias do Brasil Ltda. as well as business assets and liabilities in Denmark, the US, and China.

2018 has been impacted by the finalization of the divestment of the emissions control business areas. This resulted in a loss after tax on discontinuing operations of DKK 1 million in 2018. During 2018, loss on sale of discontinuing operations before tax amounted to DKK 18 million (mainly related to adjustment of net assets sold). Income tax on loss on sale of discontinuing operations was a gain of DKK 3 million. Consequently, the net loss on the sale of discontinuing operations amounted to DKK 15 million in 2018. Loss from discontinuing operations amounted to DKK 16 million.

The financial performance information and cash flow presented are for the year ended December 31, 2018, and the eleven months ended November 30, 2017 (2017 column).

DKK million	**2018**	**2017**
Revenue	50	652
Expenses	-51	-705
Loss before tax	**-1**	**-53**
Tax	0	-7
Loss after tax on discontinuing operations	**-1**	**-60**
Loss on sale of discontinuing operations	-15	-362
Loss from discontinuing operations	**-16**	**-422**
Foreign currency translation adjustment from discontinuing operations	0	24
Other comprehensive income arising from discontinuing operations	**0**	**24**
Net cash inflow from operating activities		-284
Net cash inflow (outflow) from investing activities (2017 includes an inflow of DKK 922 million from the divestment)		913
Net cash (outflow) from financing activities		-126
Net increase in cash generated by the discontinuing operations		**503**
Cash		956
Fair value of contingent considerations		0
Total received or receivable consideration		**956**
Carrying amount of net assets sold	-16	-1,195
Transaction costs	-2	-64
Loss on sale before income tax and reclassification of foreign currency translation reserve	**-18**	**-303**
Reclassification of foreign currency translation reserve	-	-24
Income tax expense on loss	3	-35
Loss on sale of discontinuing operations	**-15**	**-362**

Notes to the consolidated financial statements

Note 41
Discontinuing operations (continued)

In the event that the operations of the divested Automotive Business achieve certain performance criteria during the period from January 1, 2018, to December 31, 2020, as specified in an 'Volume earn-out' clause in the sales agreement, an additional cash consideration will be receivable from the buyer. At year-end, the fair value of the 'Volume earn-out' was determined to be DKK 0 million, as Management assesses that the performance criteria are unlikely to be met.

DKK million	**2017**
Intangible assets	18
Property, plant and equipment	702
Financial assets	18
Inventories	313
Receivables	236
Non-current liabilities	-4
Current liabilities	-88
Total carrying amount of assets and liabilities in discontinuing operations at November 30, 2017	**1,195**

Financial statements of Haldor Topsoe A/S

Income statement of Haldor Topsoe A/S

DKK million	Note	2018	2017
Revenue	2	**5,007**	**4,372**
Change in inventories of finished goods and intermediate products		35	-35
Other operating income		67	11
Purchased equipment for contract work		-592	-561
Raw materials and consumables used		-1,464	-1,173
Other external expenses		-986	-875
Gross profit		**2,067**	**1,739**
Staff expenses	3	-1,257	-1,155
Depreciation, amortization and impairment losses		-220	-224
EBIT		**590**	**360**
Result of investments in group enterprises and joint venture	4	66	129
Financial income	5	47	60
Financial expenses	6	-79	-107
Profit before tax		**624**	**442**
Tax		-157	-69
Profit from continuing operations		**467**	**373**
Loss from discontinuing operations	27	-16	-422
Net profit	7	**451**	**-49**

Balance sheet of Haldor Topsoe A/S

Assets

DKK million	Note	December 31 **2018**	December 31 **2017**
Rights		17	19
Patents		41	45
Software		14	20
Intangible assets under construction		4	0
Intangible assets	8	**76**	**84**
Land and buildings		568	579
Plant and machinery		570	608
Other fixtures and equipment		196	232
Property, plant and equipment under construction		160	119
Property, plant and equipment	9	**1,494**	**1,538**
Investments in group enterprises		1,240	1,312
Investments in joint venture		0	0
Receivables from group enterprises		46	2
Finance lease receivables		8	0
Other securities and investments		73	44
Other receivables		14	32
Investments	10	**1,381**	**1,390**
Non-current assets		**2,951**	**3,012**
Inventories	11	**804**	**777**
Trade receivables		570	719
Contract work in progress	12	187	170
Receivables from group enterprises	13	259	543
Finance lease receivables	10	1	0
Other receivables		197	207
Prepayments		14	14
Receivables		**1,228**	**1,653**
Cash		**435**	**613**
Current assets		**2,467**	**3,043**
Assets		**5,418**	**6,055**

Balance sheet of Haldor Topsoe A/S

Equity and liabilities

DKK million	Note	December 31 **2018**	December 31 **2017**
Share capital		376	376
Revaluation reserve		112	112
Net revaluation reserve according to the equity method		-13	56
Reserve for unpaid share capital		241	241
Reserve for development costs		33	29
Retained earnings		537	625
Proposed dividend		0	225
Equity		**1,286**	**1,664**
Deferred tax	14	369	479
Provisions	15	277	242
Bonds	16	499	499
Mortgage debt	16	27	30
Credit institutions	16	698	575
Lease obligations	16	129	129
Other payables	16	1	3
Non-current liabilities		**2,000**	**1,957**
Bonds	16	0	499
Mortgage debt	16	3	3
Credit institutions	16	161	97
Lease obligations	16	0	1
Deferred income		2	1
Prepayments from customers	17	356	212
Contract work in progress	12	463	669
Trade payables		333	336
Payables to group enterprises		106	116
Corporate income tax		236	74
Other payables		472	426
Current liabilities		**2,132**	**2,434**
Liabilities		**4,132**	**4,391**
Equity and liabilities		**5,418**	**6,055**

Statement of changes in equity of Haldor Topsoe A/S

DKK million	**Share capital**	**Revaluation reserve**	**Net revaluation reserve according to the equity method**	**Reserve for unpaid share capital**	**Reserve for develop-ment costs**	**Retained earnings**	**Dividend proposed**	**Total**
Equity at January 1, 2018	376	112	56	241	29	625	225	1,664
Net profit	0	0	-141	0	0	592	0	451
Adjustments relating to separate foreign legal entities	0	0	85	0	0	0	0	85
Recycling currency translation adjustments from discontinuing operations	0	0	0	0	0	0	0	0
Fair value adjustment of derivative financial instruments	0	0	0	0	0	-8	0	-8
Capitalized development projects	0	0	0	0	4	-4	0	0
Other adjustments	0	0	0	0	0	-31	0	-31
Net profit and income and expenses recognized under equity	**0**	**0**	**-56**	**0**	**4**	**549**	**0**	**497**
Dividend paid	0	0	0	0	0	0	-225	-225
Interim dividend paid	0	0	0	0	0	-650	0	-650
Dividend proposed	0	0	0	0	0	0	0	0
Transactions with owners	**0**	**0**	**0**	**0**	**0**	**-650**	**-225**	**-875**
Equity at December 31, 2018	**376**	**112**	**0**	**241**	**33**	**524**	**0**	**1,286**

Notes to the financial statements of Haldor Topsoe A/S

List of notes

Notes to the financial statements of Haldor Topsoe A/S

Note 1
Accounting policies

Basis of preparation

The financial statements of Haldor Topsoe A/S have been prepared in accordance with the provisions of the Danish Financial Statements Act applying to large enterprises of reporting class C. The accounting policies are unchanged from last year. The applied accounting policies are similar to those of the Group except for the following matters:

Other securities and investments
Other investments are measured at market value or estimated fair value. Unrealized value adjustments are included in the income statement in "Financial income" or "Financial expenses".

Investments in group enterprises
Investments in group enterprises are recognized and measured under the equity method.

Group enterprises which have negative equity are measured at DKK 0, and receivables from these group enterprises are written down by the parent company's share of the negative equity if it is estimated to be irrecoverable.

If the negative equity exceeds receivables, the remaining amount is recognized under provisions to the extent the parent company has a legal or constructive obligation to cover the group enterprise's deficit.

The item "Result of investments in group enterprises and joint venture" in the income statement includes the proportionate share of the result after tax.

Reserves
Reserve for development costs comprises development costs after depreciation and tax for self-constructed development projects.

Cash flow statement
No separate cash flow statement has been prepared for the parent company, as the parent company's cash flow statement is included in the consolidated cash flow statement.

Note 2
Revenue

The Company's activities are in the business segment of providing catalytic processes for integrated solutions to industrial plants. The provision of these integrated solutions comprises fundamental and applied research, reaction engineering, process engineering, mechanical design and production and supply of catalysts.

The Company has not disclosed the revenue split by segments for competitive reasons, as disclosure of this information is assessed to be potentially harmful to the Company.

Note 3
Staff expenses

DKK million	**2018**	**2017**
Wages and salaries	1,094	1,000
Pensions	115	114
Other social security contributions	61	58
Total	**1,270**	**1,172**
Capitalization of work performed on property, plant and equipment	-13	-17
Total staff expenses	**1,257**	**1,155**
Executive Management salary and pension	19	16
Fee to Board of Directors	7	7
Total remuneration to Executive Management and Board of Directors	**26**	**23**
Average number of employees	1,609	1,737

Notes to the financial statements of Haldor Topsoe A/S

Note 4
Result of investments in group enterprises and joint venture

DKK million	**2018**	**2017**
Share of result of group enterprises, net	87	152
Change in intercompany profit	-11	7
Share of result of joint venture, net	-10	-30
Total income from investments in group enterprises and joint venture	**66**	**129**

Note 5
Financial income

DKK million	**2018**	**2017**
Income from other investments	0	1
Interest received from group enterprises	2	2
Interest income	3	1
Foreign currency translation adjustment	41	39
Value adjustments of other investments	0	17
Other financial income	1	0
Total financial income	**47**	**60**

Note 6
Financial expenses

DKK million	**2018**	**2017**
Interest expenses	45	50
Foreign currency translation adjustment	31	56
Value adjustments of other investments	3	1
Total financial expenses	**79**	**107**

Note 7
Proposed distribution of profit

DKK million	**2018**	**2017**
Proposed dividend	0	225
Interim dividend paid during the year	650	125
Net revaluation reserve according to the equity method	-154	-186
Retained earnings	-45	-213
Total proposed distribution of profit	**451**	**-49**

Notes to the financial statements of Haldor Topsoe A/S

Note 8
Intangible assets

DKK million	Rights	Patents	Software	Intangible assets under construction
Cost at January 1, 2018	25	116	163	0
Additions during the year	0	16	1	3
Disposals during the year	0	-44	-1	0
Transfers during the year	1	-1	4	1
Cost at December 31, 2018	**26**	**87**	**167**	**4**
Amortization and impairment losses at January 1, 2018	6	71	143	0
Amortization during the year	3	7	10	0
Reversal of amortization and impairment losses on assets sold	0	-32	0	0
Amortization and impairment losses at December 31, 2018	**9**	**46**	**153**	**0**
Carrying amount at December 31, 2018	**17**	**41**	**14**	**4**

Note 9
Property, plant and equipment

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment under construction
Cost at January 1, 2018	787	1,851	857	119
Additions during the year	4	21	19	117
Disposals during the year	-1	-1	-1	0
Transfers during the year	0	48	24	-76
Cost at December 31, 2018	**790**	**1,919**	**899**	**160**
Revaluation at January 1, 2018	198	8	0	0
Revaluation at December 31, 2018	**198**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2018	406	1,251	625	0
Depreciation for the year	15	107	78	0
Reversal of depreciation on assets sold and scrapped	-1	-1	0	0
Depreciation and impairment losses at December 31, 2018	**420**	**1,357**	**703**	**0**
Carrying amount at December 31, 2018	**568**	**570**	**196**	**160**
Carrying amount at December 31, 2018, under the depreciated cost model	424	570	196	160
Of this finance lease assets	122	0	0	0

Borrowing costs capitalized in 2018 amounted to DKK 2 million (2017: DKK 0 million).

Notes to the financial statements of Haldor Topsoe A/S

Note 10
Investments

DKK million	Investments in group enterprises	Investments in joint venture	Receivables from group enterprises
Cost at January 1, 2018	959	39	2
Additions during the year	15	0	44
Disposals during the year	-8	0	0
Transfers during the year	39	-39	0
Cost at December 31, 2018	**1,005**	**0**	**46**
Value adjustment at January 1, 2018	353	-39	0
Foreign currency adjustments	40	0	0
Dividend	-146	0	0
Net profit for the year	5	-10	0
Disposals during the year	-3	0	0
Other adjustments	22	28	0
Investments with negative equity transferred to receivables	0	-15	0
Transfers during the year	-36	36	0
Value adjustment at December 31, 2018	**235**	**0**	**0**
Carrying amount at December 31, 2018	**1,240**	**0**	**46**

DKK million	Finance lease receivables	Other securities and investments	Other receivables
Cost at January 1, 2018	0	21	47
Additions during the year	9	39	6
Disposals during the year	0	-2	-35
Transfers during the year	0	0	0
Cost at December 31, 2018	**9**	**58**	**18**
Value adjustment at January 1, 2018	0	23	-15
Value adjustment during the year	0	-2	-4
Disposals during the year	0	-6	0
Investments with negative equity transferred to receivables	0	0	15
Transfers during the year	0	0	0
Value adjustment at December 31, 2018	**0**	**15**	**-4**
Carrying amount at December 31, 2018	**9**	**73**	**14**
Of this less than 1 year	1		

Notes to the financial statements of Haldor Topsoe A/S

Note 10
Investments (continued)

Investments in joint venture are specified as follows:

Ferrostaal Topsoe Projects GmbH
The joint venture Ferrostaal Topsoe Projects GmbH was fully acquired during 2018 and is now 100% owned by Haldor Topsoe A/S and fully consolidated in the Topsoe Group. Ferrostaal Topsoe Projects GmbH has changed name to Haldor Topsoe Germany GmbH.

Other securities and investments are specified as follows:

Chambal Fertilizer and Chemical Ltd., India
Haldor Topsoe A/S has an investment in Chambal Fertilizer and Chemicals Ltd., corresponding to 0.34% of the share capital. During 2018, Haldor Topsoe A/S has sold 30% of the investment. The remaining investment has been sold in the beginning of 2019. The investment is measured at fair value based on listed market value.

GTLA Holding LP, US
Haldor Topsoe A/S has invested in GTLA Holding LP, corresponding to 3% of the share capital.The purpose of the company is to develop a project regarding construction of a gas-to-liquid plant. The investment is measured at estimated fair value.

Investments in group enterprises are specified as follows:

Name	Registered office	Voting and ownership share
Haldor Topsøe International A/S	Lyngby, Denmark	100%
Subcontinent Ammonia Investment Company ApS	Lyngby, Denmark	100%
Haldor Topsøe Project Investment A/S	Lyngby, Denmark	100%
HT Ramagundam A/S	Lyngby, Denmark	100%
Haldor Topsøe Sustainables A/S	Lyngby, Denmark	100%
Topsoe Fuel Cell A/S under frivillig likvidation	Lyngby, Denmark	100%
Haldor Topsoe Germany GmbH	Essen, Germany	100%
OOO Haldor Topsøe	Moscow, Russia	100%
Haldor Topsoe, Inc.	Houston, USA	100%
Haldor Topsoe LFG Solutions Inc.	Houston, USA	100%
Haldor Topsoe Project Development Inc.	Houston, USA	100%
Pacific Coast Fertilizer LLC	Seattle, USA	77%
Haldor Topsoe Canada Limited	Vancouver, Canada	100%
Haldor Topsoe De Mexico, S. A. de C. V.	Mexico City, Mexico	100%
Haldor Topsoe do Brasil Tecnologia e Servicos em Catalisadores Eireli	Rio de Janeiro, Brazil	100%
Haldor Topsoe America Latina S.A.	Buenos Aires, Argentina	100%
Haldor Topsøe (Beijing) Co., Ltd	Beijing, China	100%
Haldor Topsøe Science & Technology (Dalian) Co., Ltd.	Dalian, China	100%
Jiangsu JITRI-Topsoe Joint R&D Center Co.. Ltd.	Suzhou, China	60%
Haldor Topsoe India Pvt. Ltd.	New Delhi, India	100%
Haldor Topsoe Sdn. Bhd.	Kuala Lumpur, Malaysia	100%

Notes to the financial statements of Haldor Topsoe A/S

Note 11
Inventories

DKK million	**2018**	**2017**
Raw materials and consumables	153	160
Work in progress	112	94
Finished goods	539	523
Inventories at December 31	**804**	**777**

Note 12
Contract work in progress

DKK million	**2018**	**2017**
Selling price of work performed at the balance sheet date	5,686	5,494
Payments received on account	-5,962	-5,993
Contract work in progress at December 31	**-276**	**-499**
Contract work in progress recognized in assets	187	170
Contract work in progress recognized in liabilities	-463	-669
Contract work in progress at December 31	**-276**	**-499**

Note 13
Receivables from group enterprises

DKK million	**2018**	**2017**
Deposit with the holding company	0	129
Unpaid share capital	241	241
Declared, unpaid dividend	-241	0
Other receivables	259	173
Receivables from group enterprises at December 31	**259**	**543**

Deposit with the holding company is part of a cash pooling arrangement.

Notes to the financial statements of Haldor Topsoe A/S

Note 14
Deferred tax

DKK million	**2018**	**2017**
Deferred tax at January 1, 2018	479	477
Tax for the year	-110	2
Deferred tax at December 31	**369**	**479**
Intangible assets and property, plant and equipment	90	79
Inventories	18	22
Work in progress	294	386
Provisions	-27	-25
Other	-6	17
Deferred tax at December 31	**369**	**479**
Deferred tax	369	479
Deferred tax recognized in the balance sheet at December 31	**369**	**479**

Deferred tax has been provided at mainly 22% corresponding to the current Danish tax rate.

Note 15
Provisions

DKK million	**2018**	**2017**
Warranty provision for technology projects and catalysts	219	196
Other provisions	58	46
Provisions at December 31	**277**	**242**
Of this, due after more than 1 year	277	242

Notes to the financial statements of Haldor Topsoe A/S

Note 16
Non-current liabilities

DKK million	2018	2017
Bonds		
After 5 years	0	0
Between 1 and 5 years	499	499
More than 1 year	**499**	**499**
Less than 1 year	0	499
Bonds at December 31	**499**	**998**
Amortization cost included under long-term liabilities, bonds	1	2
Mortgage debt		
After 5 years	15	18
Between 1 and 5 years	12	12
More than 1 year	**27**	**30**
Less than 1 year	3	3
Mortgage debt at December 31	**30**	**33**
Credit institutions		
After 5 years	157	93
Between 1 and 5 years	541	482
More than 1 year	**698**	**575**
Less than 1 year	161	97
Credit institutions at December 31	**859**	**672**
Lease obligation		
After 5 years	124	126
Between 1 and 5 years	5	3
More than 1 year	**129**	**129**
Less than 1 year	0	1
Lease obligation at December 31	**129**	**130**
Other payables		
Between 1 and 5 years	1	3
More than 1 year	**1**	**3**
Less than 1 year	1	0
Other payables at December 31	**2**	**3**

Other payables consist of derivative financial instruments.

Note 17
Prepayments from customers

DKK million	2018	2017
Prepayments related to sale of goods	356	212
Prepayments from customers at December 31	**356**	**212**

Notes to the financial statements of Haldor Topsoe A/S

Note 18
Assets provided as security

DKK million	**2018**	**2017**
Carrying amount of non-current assets (land and buildings) provided as security	23	24
Remaining balance of loans secured by non-current assets	30	33
Nominal value of the loans (real estate deeds and owners' mortgage deeds)	33	41

Assets are provided as security for mortgage debt and for 2017 also other long-term loans. In case of other debt to the secured creditor, the asset(s) provided as security may – until release thereof – serve as security for any present or future obligation that the Company may have towards such parties.

Note 19
Guarantees

DKK million	**2018**	**2017**
Guarantees given by banks and credit insurance institutions on the Company's behalf for contract work, etc.	974	735
Parent company guarantees issued by the Company for certain obligations in subsidiaries	66	0

Note 20
Contractual obligations

DKK million	**2018**	**2017**
Less than 1 year	67	59
Between 1 and 5 years	210	178
After 5 years	344	404
Contractual obligations at December 31	**621**	**641**

Leases and rental agreements relate to premises and equipment, etc. and extend in some cases to 2032.

The Company has an obligation of DKK 8 million related to man-hours towards a Group company.

The Company is obligated to invest an additional DKK 7 million in companies included under "Other investments".

Note 21
Contingent liabilities

The Company's property in Frederikssund, Denmark, has been found to be contaminated. Management assesses that the remediation costs will not be significant.

Through participation in joint taxation scheme with Haldor Topsøe Holding A/S, the Company is jointly and severally liable for taxes etc. payable in Denmark.

Note 22
Fee to auditors appointed at the general meeting

Please refer to the note in the consolidated financial statements for the parent company, Haldor Topsoe Holding A/S.

Notes to the financial statements of Haldor Topsoe A/S

Note 23
Related parties

Control
Haldor Topsøe Holding A/S, Lyngby, Denmark – shareholder

No transactions have been carried out with the Board of Directors, Executive Committee, key management staff, shareholders, group enterprises or other related parties which have not been under normal market conditions.

Note 24
Derivative financial instuments

DKK million	Contract amount 2018	Fair value 2018	Contract amount 2017	Fair value 2017
Sale of KWD, matures in 2018	0	0	193	11
Forward exchange contracts at December 31	**0**	**0**	**193**	**11**

The Company uses forward exchange contracts to hedge against changes in exchange rates in volatile currencies, especially USD, for contract related payments up to 12 months forward.

DKK million	Contract amount 2018	Fair value 2018	Contract amount 2017	Fair value 2017
EUR interest rate swap, matures on December 31, 2021	24	-2	32	-3
Interest rate swaps at December 31	**24**	**-2**	**32**	**-3**

The Company uses interest rate swaps to hedge against changes in interest rate levels and thus reduce the interest rate risk. Interest rate swaps are used on floating rate loans.

DKK million	Contract amount 2018	Fair value 2018	Contract amount 2017	Fair value 2017
Aggregate amount of commodity swaps within metals, matures in 2020	5	0	0	0
Aggregate amount of commodity swaps within metals, matures in 2019	23	-3	3	0
Aggregate amount of commodity swaps within metals, matures in 2018	0	0	45	12
Commodity swaps at December 31	**28**	**-3**	**48**	**12**

The Company uses commodity swaps to hedge against price fluctuations in raw materials, primarily base metals of specific production contracts. Hedging duration depends on the specific underlying contract, but it is typically less than 24 months.

The cost of raw materials is a significant cost component in our products, and costs can fluctuate considerably. The Company seeks to minimize the risk related to commodity price fluctuations through contractual escalation clauses. In addition, the Company uses financial hedging when quoting fixed contract prices.

Note 25
Subsequent events

No events materially affecting the Company's financial position at December 31, 2018 have occured after the balance sheet date.

Notes to the financial statements of Haldor Topsoe A/S

Note 26
Consolidated financial statements

Haldor Topsøe Holding A/S prepares consolidated financial statements, which include the Company and its group enterprises.

Note 27
Discontinuing operations

On June 20, 2017, Topsoe announced that it had sold its emissions control business areas. The divestment involved a loss of DKK 421 million (mainly related to revaluation) and a loss of DKK 1 million of the discontinuing operations for eleven months of 2017. The total loss of the divestment and the discontinuing operations for 2017 of DKK 422 million was recognized in the financial statements for 2017. The divestment was finalized on November 30, 2017. The divestment comprised the subsidiaries Haldor Topsøe Catalyst (Tianjin) Co., Ltd., Haldor Topsøe Automotive Catalyst Trading (Tianjin) Co., Ltd. and Haldor Topsoe Catalisadores e Technologias do Brasil Ltda. as well as business assets and liabilities in Denmark, the US, and China.

2018 has been impacted by the finalization of the divestment of the emissions control business areas. This resulted in a loss after tax on discontinuing operations of DKK 69 million in 2018. During 2018, the profit on the sale before income tax amounted to DKK 71 million (mainly related to adjustment of net assets sold). Income tax on profit on sale was a loss of DKK 18 million. Consequently, the net profit on the sale of discontinuing operations amounted to DKK 53 million in 2018.

Loss from discontinuing operations amounted to DKK 16 million.

The financial performance information presented is for the year ended December 31, 2018, and the eleven months ended November 30, 2017 (2017 column).

DKK million	**2018**	**2017**
Revenue	15	391
Expenses	-84	-403
Loss before tax	**-69**	**-12**
Tax	0	11
Loss after tax of discontinuing operations	-69	-1
Profit/loss on sale of discontinuing operations	53	-421
Loss from discontinuing operations	**-16**	**-422**
Cash	0	697
Fair value of contingent considerations	0	0
Total received or receivable consideration	**0**	**697**
Carrying amount of net assets sold	73	-1,037
Transaction costs	-2	-53
Profit/loss on sale before income tax	**71**	**-393**
Reclassification of foreign currency translation reserve	0	-24
Income tax expense on result	-18	-4
Profit/loss on sale of discontinuing operations	**53**	**-421**

In the event that the operations of the divested Automotive Business achieve certain performance criteria during the period from January 1, 2018 to December 31, 2020, as specified in an 'Volume earn-out' clause in the sales agreement, an additional cash consideration will be receivable from the buyer. At year-end, the fair value of the 'Volume earn-out' was determined to be DKK 0 million, as Management assesses that the performance criteria are unlikely to be met.

Notes to the financial statements of Haldor Topsoe A/S

Note 27
Discontinuing operations (continued)

DKK million	**2017**
Total carrying amount of assets and liabilities in discontinuing operations	
Intangible assets	8
Property, plant and equipment	111
Financial assets	714
Inventories	104
Receivables	129
Non-current liabilities	0
Current liabilities	-29
Total carrying amount of assets and liabilities in discontinuing operations at November 30, 2017	**1,037**

Statement by the Executive Committee and Board of Directors on the Annual Report

The Executive Committee and Board of Directors have today considered and approved the Annual Report 2018 of Haldor Topsoe A/S.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the EU (IFRS), and the financial statements of the parent company have been prepared in accordance with the Danish Financial Statements Act.

In our opinion, the parent company financial statements and the consolidated financial statements give a true and fair view of the financial position at December 31, 2018 of the Group and the parent company and of the results of the Group and parent company operations and of the Group's cash flows for 2018 in accordance with the applied accounting policies.

In our opinion, the Management's review includes a true and fair account of the development in the operations and financial circumstances, 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.

We recommend that the Annual Report be adopted at the Annual General Meeting.

Lyngby, March 26, 2019

Executive Committee

Bjerne S. Clausen
President and CEO

Amy Hebert
Deputy CEO and Executive Vice President

Peter Rønnest Andersen
Executive Vice President and CFO

Board of Directors

Jeppe Christiansen
Chairman

Jørgen Huno Rasmussen
Vice Chairman

Jakob Haldor Topsøe
Vice Chairman

Anders Heine Jensen
Member

Jens Kehlet Nørskov
Member

Christina Teng Topsøe
Member

Anders Broe Bendtsen
Employee representative

Christina Borch
Employee representative

Jette Søvang Christensen
Employee representative

Lis Ibsen
Employee representative

Independent Auditor's Report

To the Shareholders of
Haldor Topsoe A/S

Opinion
In our opinion, the Consolidated Financial Statements give a true and fair view of the Group's financial position at December 31, 2018 and of the results of the Group's operations and cash flows for the financial year January 1 to December 31, 2018 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, 2018 and of the results of the Parent Company's operations for the financial year January 1 to December 31, 2018 in accordance with the Danish Financial Statements Act.

We have audited the Consolidated Financial Statements and the Parent Company Financial Statements of Haldor Topsoe A/S for the financial year January 1 - December 31, 2018, which comprise income statement, balance sheet, statement of changes in equity and notes, including a summary of significant accounting policies, for both the Group and the Parent Company, as well as statement of comprehensive income and cash flow statement for the Group ("financial statements").

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 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, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Statement on Management's review
Management is responsible for Management's review.

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 during the audit, or otherwise appears to be materially misstated.

Moreover, it is our responsibility to consider whether Management's review provides the information required under 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 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 responsibilities for the Financial Statements
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.

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 in preparing the financial statements 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
Our objectives are to obtain reasonable assurance about whether the financial statements 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.

As part of an audit conducted in accordance with ISAs and the additional requirements applicable in Denmark, we exercise professional judgment 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 in preparing the financial statements 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 and the Parent Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and contents of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that gives a true and fair view.
- 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.

Copenhagen, March 26, 2019

PricewaterhouseCoopers
Statsautoriseret
Revisionspartnerselskab
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