Making **optimal** performance possible

Annual Report 2014

HALDOR TOPSOE

Haldor Topsoe is a **world leader** in catalysis and surface science. We are **committed to helping** our customers achieve **optimal** performance.

We **enable our customers** to get the most out of their processes and products, using the **least possible energy** and resources, in the most responsible way.

This **focus on our customers' performance**, backed by our solid reliability, **makes sure** we add the **most value to our customers** and the world.

Contents

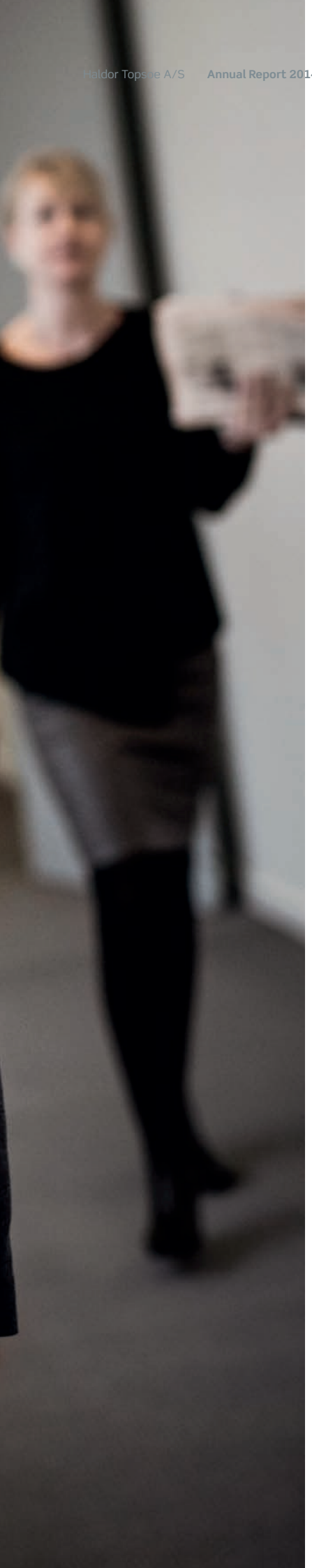
Our leadership

Financial statements

In accordance with Section 149 of the Danish Financial Statements Act, this consolidated annual report is an extract of the Group's full annual report.

The full annual report, including the parent company financial statements, can be downloaded from topsoe.com/investors/archive of annual report or cvr.dk.

The Board remains confident that the new strategy together with significant investments provides a good basis for the continued, successful development of Haldor Topsoe A/S.



Letter from the **Chairman**

2014 was a good year for Haldor Topsoe, both in terms of financial performance, continued strong profitability, and solid progress in the company's research and development pipeline. Significant efforts have also been made in expanding our business into new markets by building entirely new capabilities. In 2014, we completed expansions of our production sites in Denmark and USA and we made good progress in establishing production sites in Tianjin, China and in Brazil. These efforts promise well for the future.

Haldor Topsoe's board, the management team, and the more than 2700 employees around the world have all the reasons to be proud of our results. These results are all the more impressive when one considers 2014's challenging global business climate, influenced by geopolitical instability, economic slowdown in some of the world's key growth regions and – towards the end of the year – a sharp decline in oil prices.

Topsoe has for many years had a significant activity in the solid oxide fuel cell field through the subsidiary, Topsoe Fuel Cell (TOFC). However, during 2014, it was realized that in spite of technical progress, the time to a profitable market situation was significantly longer than previously anticipated. Sadly, it was therefore sadly decided to close TOFC. This resulted in a large one time write-down and had a significant, negative impact on the year result.

2014 was my first full year as Chairman of the Board of Directors following the passing in 2013 of my father, the company's founder Dr. Haldor Topsøe, whose vision and legacy remain an important source of inspiration to the entire company. Stepping into his footsteps is a privilege and a great responsibility, and I am excited to continue meeting the challenges that come with this chairmanship. My excellent peers on the Board of Directors have worked diligently with me to review and shape the company's short- and long-term strategy. We have also made great strides to further strengthen our understanding of how our business operates globally. In December, for example, the entire board, together with our senior management, travelled to India on a business trip to learn more about this very important emerging market and to explore how our presence in India can be most effectively developed in the future.

The board remains confident that the growth strategy for the Topsoe group and its execution by the management over the past year provide an excellent basis for a continued, positive development in the coming years. Speaking on behalf of the entire Topsøe family, it is also important for me to underline that we continue to stand united in our support of the company. We are committed to ensuring that family ownership remains a significant, competitive advantage for the company, by standing behind the long-term investment required to harness the full potential of the company's innovative DNA and unique future business opportunities.

On behalf of the Board of Directors, I would like to express my appreciation for the leadership shown by our CEO, Bjerne S. Clausen, and his leadership team, and the hard work and dedication of the entire Haldor Topsoe organization.

Henrik Topsøe
Chairman of the Board of Directors

2014 has been an exciting year with solid progress in a number of key areas. This reinforces my strong belief in our ability to succeed with our growth strategy.

Letter from the **CEO**

Haldor Topsoe is successfully navigating through a period of transition implementing the company's ambitious growth strategy. Executing this strategy is the single most important task for Topsoe in the years to come, and I am happy to report that we have made important progress in 2014 that reinforces my strong belief in our ability to succeed.

Before I elaborate on this, I will review our financial performance in 2014 and take a look at the company's overall business climate.

Compared to 2013, our 2014 revenue increased by 6% to DKK 5,685 million. This is the highest yearly revenue ever in the history of the company. On its own terms this is a good result. However, considering our strategic goals, it is not entirely satisfactory.

In this regard, there are two key points I would like to highlight.

Firstly, our *technology revenue* – which is largely made up of engineering services, equipment and licensing – decreased by 10% compared to 2013. One reason is the geopolitical and financial instability in certain areas of the world. This has weakened demand and also led to some delays in our order inflow, especially due to the postponement of large-scale engineering projects.

Secondly, however, our *catalyst revenue* increased significantly by 13% compared to 2013. This was driven by a strong demand for our refining catalysts, which are used by oil refiners to produce cleaner fuels. The same goes for other areas of our business, for example the catalysts we offer to manage emissions, which are used by heavy industry and power plants to remove harmful compounds from off-gasses.

Towards the end of 2014, oil prices dropped to levels not seen since 2008. For some of the world's main producers of oil – Nigeria, Russia and Venezuela for example – this is negative, because economic growth is linked to the price of oil. Lower oil prices could also slow down the shale oil boom in the US, as this is only economically feasible at oil prices above the present one.

For Topsoe the low price of oil is both good and bad news. Bad because it may create less incentive to invest in alternative energy projects, such as gas-to-liquid projects and may lower the general willingness to invest in oil-exporting countries. Good because growth may increase in oil-importing countries in Europe as well as in China and India, and thus supports Topsoe's growth in these markets.

In spite of these risk factors, I still believe there are a number of strong global trends that will work in our favor in the years to come.

As the world's population grows and wealth increases, so will the demand for the products our customers supply. This translates into growth opportunities for Topsoe, because we deliver effective solutions to our customers' production challenges. As non-renewable resources become increasingly scarce, we can help our customers maximize output using as few resources as possible. And as environmental regulations tighten, we can provide our customers with the best available technologies to ensure compliance.

Getting back to our financial performance, it is important for me to point out that Topsoe maintains a strong financial position. We realized a full-year EBIT result of DKK 563 million, with a net profit of DKK 440 million. Our net profit represents a decrease of 20% compared to 2013, the primary reason for this being an incurred loss related to the closure of our subsidiary Topsoe Fuel Cell A/S. If we adjust for special items in 2013 and 2014, the year-on-year growth in our EBIT was 20%. Moreover, the closure will increase the free cash flow from 2015 onwards, freeing capital for use in other investments and projects.

"Topsoe maintains a strong financial position. In terms of EBIT, we realized a full-year result of DKK 563 million, with a net profit of DKK 440 million."

Viewed in this context, our 2014 EBIT result is satisfactory. In fact it marks another year with healthy earnings reflecting our continued strong market position in our main business areas that remain characterized by high entry barriers and good profitability.

The EBIT result is also noteworthy because it has been achieved at a time when we are investing heavily in preparing for growth. In 2014 we completed two large expansions of our production sites at Frederikssund, Denmark and Houston, Texas.
In Tianjin, China, we also made good progress on the construction of a production plant for automotive catalysts. We expect to complete the first phase of this project by mid-2015.
We also launched the construction of a new automotive catalyst production plant in Brazil; we expect this plant to become operational by mid-2015. →

In addition to expanding our production capacity, we maintained a high level of activity in business development and a steep ramp-up of our manpower and competence base. Meanwhile, our total spend on R&D amounted to 11% of our revenue – significantly higher than our industry peers. In 2014 we increased our average number of employees by 11%, and one fourth of our staff is now employed outside Denmark.

"Topsoe develops new technologies with a view to enter new business areas. In 2014, we made notable progress on a number of exciting projects."

Topsoe continues to develop new technologies with a view to enter new business areas. In 2014, our New Business Unit made notable progress on a number of exciting projects. For example in our work to develop new, advanced battery materials, we successfully produced and tested new types of materials both on our own and in collaboration with our partner Faradion, a UK based battery company in which we took co-ownership in 2014. In addition, our TIGAS™ technology for creating synthetic gasoline took a big step forward in 2014 as we concluded negotiations for the construction of the first large-scale plant based on this technology in Turkmenistan. This project is important because it showcases how our technology can help a nation with huge natural gas reserves monetize these by diversifying from conventional gas markets into transportation fuels.

Another noteworthy event was the establishment of a new partnership with FLSmidth, a supplier of equipment and services to the global cement and minerals industries. This

News highlights from 2014

Turkmenistan to build major synthetic gasoline plant

In August the construction of a major plant focused on the conversion of natural gas into synthetic gasoline was launched in Turkmenistan. The plant will be based on Topsoe's TIGAS™ (Topsoe Improved Gasoline Synthesis) technology and become the first large commercial facility using this technology in the world. TIGAS™ makes it possible to produce high quality, high value gasoline from natural gas and the plant is important because it is the first large scale project where Topsoe can showcase how its technology can help monetize natural gas.

Topsoe takes first steps to establish automotive catalyst production in Brazil

In June Topsoe announced that it has begun establishing a production facility in Joinville, Brazil. The facility will focus on manufacturing catalysts that can remove NOx from the engine exhaust of diesel vehicles such as buses and trucks. Establishing production locally is an important prerequisite for Topsoe to realize its full potential in Brazil, but also other parts of Latin America.

Topsoe Fuel Cell closed down

In August Topsoe announced that it will close Topsoe Fuel Cell A/S, a subsidiary company within the Topsoe group focused on the commercialization of technology for high temperature solid oxide fuel cells (SOFC). As part of the closure Topsoe has put all development of its SOFC technology on hold and instead chosen to focus on the development of selected applications in solid oxide electrolysis cell development (SOEC). Activities related to this specific area have been moved to the R&D function of Haldor Topsoe A/S.

New catalyst plant in China is taking shape

Topsoe's construction of a new automotive catalyst plant in Tianjin, China, is proceeding according to plans. China is one of the world's most important markets for automotive catalysts, and with the new plant Topsoe is getting ready to meet the growing demand. Once finalized, the plant will produce catalysts capable of removing NOx from the engine exhaust of heavy duty diesel vehicles. The project consists of two phases. An impregnation plant will be ready for production in 2015, and a second phase will add an additional substrate plant ready for operation in 2016. The new catalyst plant in China is Topsoe's largest single investment ever.

marks the beginning of a joint global effort to commercialize a newly co-developed generation of catalytic filter bags to remove harmful substances from industrial off-gasses. I believe the product we have created together will become a game-changer, and I look forward to seeing how this will develop in the years to come.

Yet another important and very visible event in 2014 was the launch of Topsoe's new corporate brand. As you can read in this report, the new brand is more than a new visual identity. It marks a shift to a far more customer centric approach and communicates our strong commitment to deliver optimal performance solutions in partnership with our customers. Looking ahead, we hope this will differentiate us more clearly in the market and allow us to gain traction in industries where we are not well-known, but have substantial value to offer. At the same time, we believe it will enhance the way we present our portfolio of solutions to our existing customer base.

In 2014 the Topsoe Group Code of Conduct was implemented throughout the entire organization and it has been well received. The Code of Conduct contains policies covering anti-corruption, competition law as well as other compliance issues and some Corporate Social Responsibility elements. Together with our underlying policies and procedures, it provides guidance for our behavior and a foundation for further development of the area in 2015. Our policy for the gender composition of management can be found on http://www.topsoe.com/investor/corporate-social-responsibility.

In conclusion, 2014 has been an exciting year with solid progress in many key areas of our business. I would like to thank all employees in Topsoe for the hard work that has created our results, our customers for their confidence in us and our partners and other stakeholders for their collaboration and continued support.

Bjerne S. Clausen
President & Chief Executive Officer

Topsoe wins the Danish Engineering Product Award 2014

In November Topsoe won the Danish Engineering Product Award 2014 for its new ECO-Jet solution, a newly developed catalytic process capable of reducing emission of harmful substances such as soot, hydrocarbons and heavy metals from ships powered by bunker fuel. The prestigious award, presented annually by the Danish technical journal Engineering Weekly honors technological products with significant news value based on technical expertise.

Breakthrough in refinery catalysis at the atomic level

In September Topsoe announced the publication of a breakthrough article in the scientific journal Angewandte Chemie, describing how researchers for the first time ever have made the Co-Mo-S catalyst's crystallites – that are only a few nanometers wide – visible to the human eye. The Co-Mo-S is the scientific term for the active part that is found in Topsoe's series of TK catalysts that are used by oil refineries all over the world. The research could mean more efficient catalysts for oil refineries in the near future.

Texas production site expanded with sulfuric acid catalyst production plant

In May Topsoe opened a new plant at its production site in Bayport, Texas, which is the company's second largest in the world. The new plant will produce Topsoe's VK portfolio of extruded catalysts that are used for the production of sulfuric acid production and are also used in a Topsoe process called Wet Gas Sulfuric Acid (WSA) which not only desulfurizes toxic gases, but also converts the sulfur waste into sulfuric acid.

Topsoe and FLSmidth to market catalytic filter bag technology

During 2014, Topsoe and FLSmidth A/S, a leading supplier to the global cement and minerals industries, established a partnership that marks the beginning of a joined global effort to commercialize a newly developed unique catalytic filter bag technology. The product is capable of removing dust, volatile organic compounds and nitrogen oxides in one integrated and cost-effective process. A long list of industries including cement, power, waste incineration as well as glass and metal production are the target customers and the commercial potential is large.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Accomplishments and **results**

"Making **optimal** performance possible for our customers is **our way** of making a positive impact on the world."

Financial highlights

Seen over a five-year period, the development of Topsoe is described by the following financial highlights.

Profit

DKK million	**2014**	**2013**	**2012**	**2011**	**2010**
Revenue	5,685	5,348	5,244	4,421	4,201
Gross profit	2,542	2,408	2,142	1,924	1,884
EBITDA	929	876	793	668	677
Depreciation and amortization	-366	-175	-200	-201	-207
EBIT	563	701	593	467	470
Financial income/expenses	14	-21	-28	63	-36
Net profit	440	553	415	402	301

Balance sheet

DKK million	**2014**	**2013**	**2012**	**2011**	**2010**
Balance sheet total	6,455	6,132	5,503	5,158	4,640
Equity	1,831	1,644	1,422	1,307	1,124
Net working capital	540	462	280	177	355
Net indebtedness	1,016	994	228	386	763

Cash flow

DKK million	**2014**	**2013**	**2012**	**2011**	**2010**
Cash flows from operating activities	808	483	786	796	418
Cash flows from investing activities	-639	-721	-342	-238	-211
Hereof investments in property, plant and equipment	-600	-664	-307	-209	-210
Cash flows from financing activities	-222	163	-247	-389	-437
Change in cash and cash equivalents for the year	-14	-75	197	169	-230

Employees

Number	**2014**	**2013**	**2012**	**2011**	**2010**
Total number of employees (average)	2,694	2,430	2,195	2,091	2,015
Hereof in Denmark (average)	1,945	1,886	1,733	1,689	1,656

Ratios

%	**2014**	**2013**	**2012**	**2011**	**2010**
Gross margin	44.7	45.0	40.8	43.5	44.8
EBITDA margin	16.3	16.4	15.1	15.1	16.1
EBIT margin	9.9	13.1	11.3	10.6	11.2
Return on invested capital (ROIC)	20.1	31.0	33.0	26.5	27.1
Equity ratio	28.4	26.8	25.8	25.3	24.2
Return on equity	25.3	36.1	30.4	33.1	27.5

The ratios have been prepared in accordance with the recommendations and guidelines issued by the Danish Society of Financial Analysts.

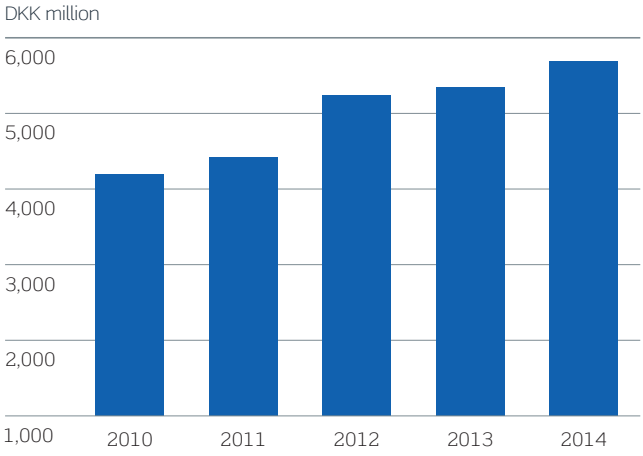
2014 was another satisfactory year for Haldor Topsoe A/S.

Our catalysts enjoyed significantly higher demand and volume increases in most segments, resulting in a 13% growth in catalyst revenue, whereas the technology part of our business was faced with certain delays in order inflow, resulting in a 10% reduction in revenue. In total, revenue increased by 6% (or 8% if adjusting for 2013 special item).

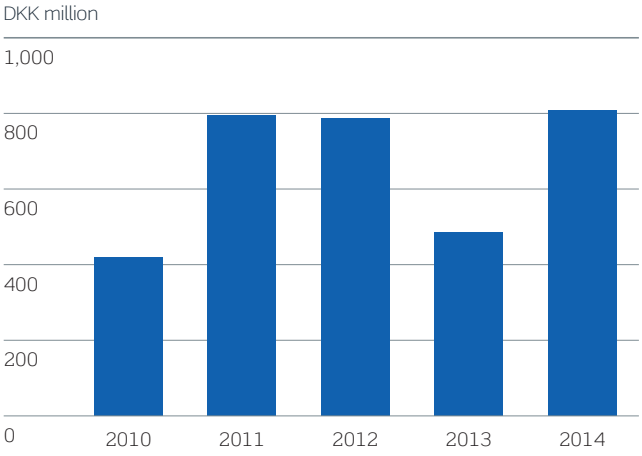
EBIT decreased 20% to DKK 563 million corresponding to an EBIT margin of 9.9% (2013: 13.1%).
The decrease is due to impairment and other costs related to closure of Topsoe Fuel Cell A/S for the amount of DKK 151 million.

R&D expense level was maintained at a high level with a R&D-to-revenue-ratio of 10.6% (2013: 11.4%).

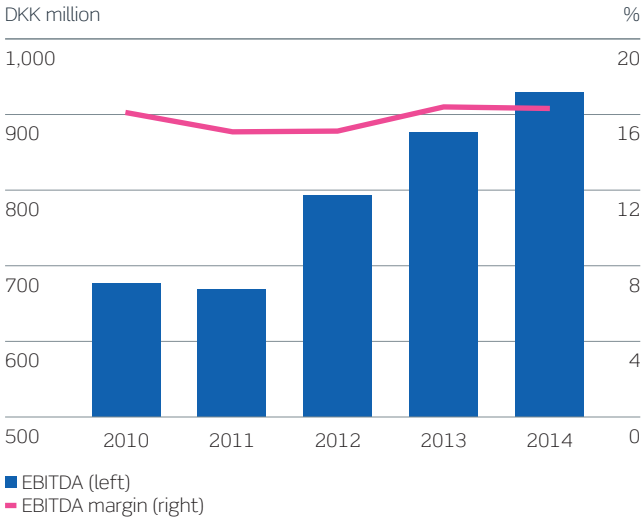
Revenue



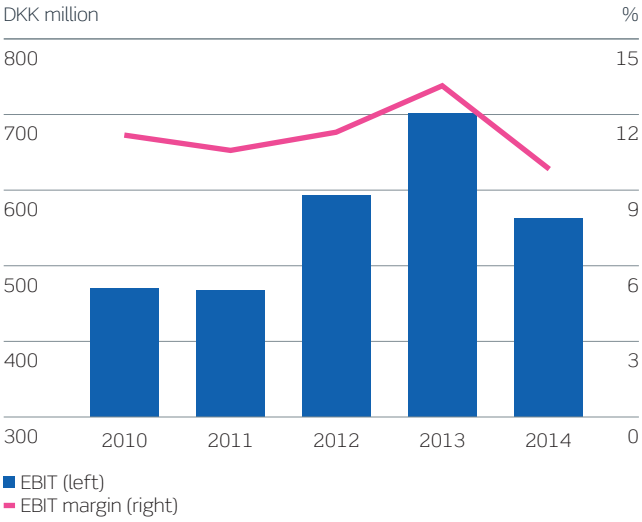
Cash flows from operating activities



EBITDA



EBIT



Financial report

Statement of profit and loss

Revenue
Revenue increased 6% to DKK 5,685 million (2013: DKK 5,348 million).

Catalyst revenue increased by 13% due to growth in most business areas. Topsoe still enjoys a balanced portfolio of profitable business areas with growth potential.

A change of estimate of warranty provisions related to technology projects had a positive impact on revenue, EBITDA and EBIT (DKK 105 million) and net profit (DKK 79 million) in 2013. No special items have impacted 2014 revenue. Adjusting for the 2013-special item, the total revenue growth was 8% from 2013 to 2014.

Earnings before interest, tax, depreciation, and amortization (EBITDA)
EBITDA increased by 6% to DKK 929 million, corresponding to an EBITDA margin of 16.3% (2013: 16.4%).

The increase in staff, abroad and in Denmark, has resulted in an increase in staff expenses by 5% to DKK 1,613 million. Raw materials (incl. changes in inventories) increased by 16% to DKK 1,741 million, driven by the larger catalyst sales volume. Purchased equipment for contract work decreased by 33% to DKK 348 million due to the reduction in technology activities. Other external expenses increased by 10% to DKK 1,117 million.

Earnings before interest and tax (EBIT)
EBIT decreased 20% to DKK 563 million corresponding to an EBIT margin of 9.9% (2013: DKK 701 million and an EBIT margin of 13.1%). Adjusting for the warranty provision change in 2013 and the loss of DKK 151 million incurred in 2014 in relation to the closure of Topsoe Fuel Cell A/S (TOFC), the EBIT increased by DKK 118 million or 20% compared to 2013. Depreciation increased by 109% to DKK 366 million as a result of the completion of two new production lines in Houston and Frederikssund and the asset impairment related to the closure of TOFC.

Net profit
Net profit decreased 20% to DKK 440 million (2013: DKK 553 million).

The reduction in net profit is mainly explained by the loss after tax of DKK 114 million related to the closure of TOFC. Dividend from KAFCO decreased by 10% to DKK 54 million. Net interest decreased by DKK 7 million as a result of continuing lower market interest rates and favorable re-financing. There were positive net exchange adjustments of DKK 11 million (2013: DKK -24 million). Tax increased by DKK 10 million to DKK 137 million.

Cash flow and balance sheet

Cash flows from operating activities
Cash flows from operating activities increased by 67% and amounted to DKK 808 million (2013: DKK 483 million). Working capital increased by DKK 6 million and amounted to 9.5% of revenue (2013: 8.6%).

CAPEX
CAPEX decreased by 11% and amounted to DKK 639 million (2013: DKK 721 million). Two new production lines in Frederikssund, Denmark and Houston, Texas – Topsoe's two primary production sites – were completed within the first half of 2014. In 2014 additional CAPEX has been spent on establishment of two new production sites in China and Brazil, both of which will be completed in 2015.

Net indebtedness
Net indebtedness increased by 2% and amounted to DKK 1,016 million (2013: DKK 994 million).

The interest bearing debt at the end of 2014 was DKK 1,936 million (2013: DKK 1,928 million).

Surplus funds for an amount of DKK 467 million were placed with the holding company, Haldor Topsøe Holding A/S, as part of a cash pool arrangement (2013: DKK 550 million).

Return on invested capital (ROIC)
ROIC amounted to 20% (2013: 31%).

Order backlog

The order backlog was at the end of 2014 at a satisfactory level covering a major part of our engineering and catalyst production capacity for 2015.

Outlook for 2015

Revenue

Revenue is expected to increase in 2015.

EBIT

EBIT is expected to remain at a high level, and EBIT margin is expected to increase compared to 2014. In 2015, we expect to maintain our high level of R&D and business development activities, except for the Topsoe Fuel Cell activities which were closed down in 2014. We will also start to depreciate the two new production plants in in China and Brazil, which will commence production during 2015. This may have a negative short term EBIT margin impact.

Cash flow and funding

Operating cash flows are expected to continue to be strong. Topsoe's current funding position is strong, based on access to the corporate bond market, institutional banks as well as commercial banks.

As part of the corporate bond issuance in 2013, Topsoe was credit rated as an investment grade company in shadow ratings performed by two major Nordic banks. These shadow ratings have been maintained throughout 2014.

Topsoe intends to maintain a credit profile that matches that of an investment grade company during a business cycle. Topsoe will consider, when market terms are attractive and there is a need, to issue further corporate bonds as well as to obtain other credit facilities.

Forward-looking statements

Haldor Topsoe A/S' financial reports, whether in the form of annual reports or interim reports, filed with the Danish Business Authority and/or announced via the company's website, 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

Since 2013 Haldor Topsoe has operated an enterprise risk management program, with quarterly reporting from business and resource units to Executive Management, followed up by reviews and mitigating activities. In 2013 Haldor Topsoe prepared a description of the various risks as part of the company's corporate bond issuance. This risk factor description can be found as part of the company description on www.topsoe.com.

During 2014 the Topsoe Code of Conduct was implemented throughout the entire organization, including policies covering anti-corruption, competition law as well as other compliance issues.

Below are mentioned the general risk factors and the associated mitigating actions.

"During 2014 the Topsoe Code of Conduct was implemented throughout the entire organization, including policies covering anti-corruption, competition law as well as other compliance issues."

Strategic operational risks

Customer demand

Based on our continued development of current as well as new products and processes, we expect demand to be strong. Catalysts are involved in 90% of the world's chemical processes today, and we see no indication of reduced demand or substitutes. For new products, processes and services being developed, we are depending on market demand picking up in order to increase our sales of these.

Intellectual Property (IP) protection

As a highly innovative company, Haldor Topsoe pursues IP protection through e.g. patents, trade secrets, trademarks, design and copyright law. Our IP could, however, be challenged, invalidated, circumvented or rendered unenforceable. Defending and prosecuting our IP is therefore of paramount importance.

Raw material prices and availability

The cost of raw materials is a significant cost component in our products, and prices can fluctuate considerably. We seek to pass any increased raw material cost on to our customers through escalation clauses in contracts. In addition, we use financial hedging to a certain extent. Moreover, we seek to have multiple suppliers for each raw material.

Operational risks

Haldor Topsoe's production of catalysts takes place in Frederikssund, Denmark, and Houston, USA and from 2015 also in Tianjin, China and Joinville, Brazil. If production for some reason is closed down for an extended period in one of our operational plants or if commissioning of new plants is substantially delayed, it will have a material impact on Haldor Topsoe's earnings. We seek to mitigate this risk by having multiple production lines for certain products as well as a safety stock policy. We have also taken out insurance against loss of contribution and property insurance, etc.

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

Product liabilities and compliance

The products and services supplied by Haldor Topsoe have to meet the highest standards in the industry. With complex processes being involved, Haldor Topsoe will always be subject to the risk of product liability. In order to reduce this risk, quality in all areas of the value chain is monitored continuously. In addition, Haldor Topsoe never accepts unlimited liability in our contracts.

Besides property insurance and insurance against loss of contribution, a number of other operational risks are insured. General liability and product liability as well as professional indemnity and transportation for example.

Geopolitical risks

The presence of Haldor Topsoe across the globe, exposes earnings to geopolitical events. Political actions, such as trade barriers, embargoes, new taxes, currency restrictions, the passing of environmental legislation etc., may impact the result and cash flows of Haldor Topsoe. This risk is to a certain degree mitigated through the monitoring of regulatory initiatives, geographical diversification, and – when possible – that cash flows are maintained positive for our individual contracts.

Financial risks

Currency risks

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

Part of the risk is mitigated through natural hedges arising from activities where Haldor Topsoe has both income and expenses in the same currency. However, the risk is not fully covered by natural hedges, and consequently, Haldor 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 20–25 million.

Interest rate risk
Long-term debt consists of loans and bonds with fixed and floating interest rates. In order to secure a distribution between fixed and floating rate debt that matches the asset distribution, interest rate swaps are applied. For the floating rate portion of Haldor Topsoe's interest bearing debt, a change in the interest rate level of 1 percentage point will influence interest expenses by DKK 9 million .

Credit risk
The credit risk of Topsoe is primarily related to trade receivables which to some extent consist of large, multinational or government-owned corporations. For other types of clients, and for most sales in emerging markets, we seek to mitigate credit risk by application of instruments such, as letters of credit and bank guarantees as well as through selective structuring of payment terms etc.

Counterparty risk
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, Haldor Topsoe only deals with financial counterparties, which – based on management's assessment – have a satisfactory credit rating from a recognized international credit rating agency.

Liquidity risks
Haldor Topsoe must maintain sufficient liquidity to fund daily operations, debt service, and for future expansion purposes. Haldor Topsoe's access to liquidity consists of cash and cash equivalents including access to credit facilities.

Restrictive covenants
Some of the financing arrangements of Haldor Topsoe are subject to financial covenants, and if violated this could limit the ability to finance the company's operations and capital needs for pursuing acquisitions and other business activities.

Dividend policy
The Haldor Topsoe Group has since 2007 financed the operations of Haldor Topsøe Holding A/S through dividend payments in order for this company to operate. The liquidity effect of the expected future dividend payments has been incorporated in the cash flow forecasts of Haldor Topsoe.

Tax
Haldor Topsoe is exposed to a large number of different tax regimes across the countries in which we operate, and there is a risk of unexpected taxation due to uncertainty of the interpretation of local tax regulations. To mitigate this risk, Haldor Topsoe consults external advisors.

On this world map we have provided an overview of our global footprint, including information related to our presence in key regions of the world.

The world of **Topsoe**

Topsoe is a global organization with production plants, regional offices, and engineering activities all over the world. Our catalysts and related process technologies can help solve some of the world's most pressing issues within environment, climate, and energy.

North America

The US is Topsoe's largest market in the world and the primary business is focused on catalysts and technology sales in areas such as hydrotreating and hydrocracking, ammonia, methanol, hydrogen, GTL (gas-to-liquid), and sulfuric acid. Interest is seen in the conversion of shale gas to various products such as ammonia, methanol, gasoline, and diesel. Topsoe's environmental technologies, has also become a key business area. Topsoe established its US business in the early 1960's and opened a production plant in 1971 in Houston, Texas. In addition to the plant, the US subsidiary, Haldor Topsoe Inc., has its main office in Houston and an office in Los Angeles. Topsoe employs 250 people in total in the US.

Latin America

Topsoe opened a subsidiary office in Buenos Aires in 2008 to support its growing activities in Latin America. In 2012 we also opened a subsidiary office in Rio de Janeiro aimed at increasing interaction with the Brazilian oil industry among several other objectives. Today, some 20 employees cover our business activities in Latin America. The largest ammonia plant on the Latin American continent is based on Topsoe technology and is located in central Argentina. Moreover, several of our technologies are included in the newest Latin American refinery, which is currently under construction in Brazil. Our technologies have also been selected for the ongoing modernization of several Mexican refineries.

The Middle East

Topsoe has a long history of doing business in the Gulf region that stretches back to the 1960's. In 2007 the company established an office in Manama, Bahrain that employs 13 people today. Topsoe's business in the Middle East is primarily focused on sales of catalyst and technology related to ammonia production, hydrogen, GTL (gas to liquid) and hydrotreating. With the expanding local refining sector and more stringent fuel specifications, Topsoe is experiencing an increasing demand for advanced hydroprocessing solutions. Furthermore, increasing demand is being observed for the solutions that Topsoe offer in the environmental area, such as catalytic technologies to remove harmful substances from industrial flue gasses.

Africa

Topsoe expects that Africa will be an important growth contributor in the future. An abundance of natural resources such as oil, gas, and coal, coupled with greater political stability and economic reforms have made businesses take note of the continent's potential. With our technologies, Topsoe can help unleash Africa's potential in a clean and efficient way, producing products such as ammonia and high quality fuels and making use of the huge amounts of available natural gas. Ammonia is a key component in fertilizer, and therefore it plays an important part in improving conditions for the agricultural sector – especially since farm productivity across Africa remains low. In 2012, Topsoe opened a subsidiary in South Africa that covers Sub-Saharan Africa. The office currently employs eight people.

Especially in the world's emerging economies, growing regulation coupled with the expansion and modernization of the chemical, refining, and power industries are creating significant growth opportunities.

Russia

Topsoe is well positioned on the Russian market – not least when it comes to improving the environment with our products for diesel trucks and NOx removal. We have a strong position in relation to new plants for ammonia production, and also catalyst replacement sales, particularly for refinery-related applications. The reason for this is not only our technologically advanced products, but also our local presence and technical support. Beyond this, Topsoe has enjoyed close collaboration with the Russian industrial and scientific community for decades. Topsoe established business in 1991 in Moscow and currently employs 65 people in its Russian subsidiary.

India

With a technology market share of more than 80%, Topsoe is currently the single largest technology supplier in the field of ammonia in India, and over 90% of all ammonia produced in the country is produced using our catalysts. Our office in New Delhi was established in 1982, and in 2007 an engineering subsidiary was added. In 2012 the engineering subsidiary was expanded with a global IT center and Topsoe now employs a total of 174 people in India. The engineering activities cover almost all disciplines required for delivering an engineering design package for a complete project, and represent the largest engineering provider to Haldor Topsoe A/S outside Denmark.

Southeast Asia

Southeast Asia is an emerging market with a population of around 800 million people and plenty of natural resources. To support capitalization of these resources, Topsoe opened an office in Kuala Lumpur, Malaysia, in 2010. Today, the office employs 10 people and support Topsoe's business in the region, that covers Bangladesh, Australia, New Zealand in addition to the ASEAN countries. The main business so far, has been to provide technology and catalyst to ammonia and methanol producers and Topsoe is experiencing a continued interest for further capacity expansion of these areas. In addition, increased demand for Topsoe's refinery and environmentally related solutions is expected as more stringent legislation is implemented across the region.

China

China is faced with environmental challenges, and improving air quality is a focus area. Topsoe delivers a range of solutions that directly and indirectly address this issue. The company offers catalytic solutions to clean the exhaust from diesel vehicles as well as flue gasses from e.g. power plants and heavy industry. Moreover, Topsoe delivers solutions that can help Chinese oil refiners upgrade their diesel. Topsoe also delivers technology that is used at large-scale SNG plants (Substitute Natural Gas). SNG based on coal gasification represents a cleaner way to utilize coal as an energy resource. Topsoe has been present in China since 1984 and has a subsidiary in Beijing which employs 100 people. An additional 35 people work at the Tianjin automotive catalyst production site that is under construction.

Children playing at the Utsho Village, a boarding school for children from Dhaka, Bangladesh, funded by Haldor Topsoe A/S.

The gift of a **better life**

Topsoe's new charity programme is inspired by our founder's concern for children, and goes hand-in-hand with our business and global presence.

One of the first projects to be funded by Haldor Topsoe A/S in the area of charity began with a rather odd question.

It happened some years ago at a board meeting of the Karnaphuli Fertilizer Company, an international joint venture in Bangladesh that Topsoe helped establish. Haldor Topsoe himself was well into his nineties at the time, but was still an active member of the Board of Directors.

On this particular day, however, he was interested in more than fertilizer. Turning to fellow board member Dr. Toufiq Ali, he asked:

"Can't you find me some street children that I could help?"

Haldor's daughter Birgitte Øigaard, who today is a member of the Charity Committee at Haldor Topsoe A/S, tells the rest of the story:

"I don't think Dr. Ali really took my father seriously. But at the next board meeting, my father asked him again about the street children. He really meant it."

A school for slum children

The result of that first conversation with Dr. Ali culminated in October, 2013 with the opening of Utsho Village, a boarding school for children from the slums of Dhaka, the Bangladeshi capital. In addition to 200 street children, the school can accommodate another 200 day students from the area around the school, which is located 40 km north of the capital.

Utsho Village was funded by Haldor Topsoe A/S at a time when there was still no formal charity programme at the company. It is run by a local NGO, Utsho Bangladesh, which is chaired by Dr. Ali's wife, Firdaus Ali.

Haldor Topsøe laid the foundation stone for the school, but never saw its inauguration; five months before the school opened, Haldor Topsøe passed away.

The charity programme is born

Utsho Village is a part of a charity programme established and funded by Haldor Topsoe A/S. The company also contributes funding to several other projects, all in countries where Topsoe is actvly engaged in business. The common feature in each of them is that they express the spirit of Haldor Topsøe and his wife Inger,

"I hope that the continued growth of Topsoe will be reflected in an expansion of the charity programme."

***Birgitte Øigaard**, member of the Charity Committee, Haldor Topsoe A/S*

both of whom were deeply concerned about the social problems in the many countries where the company operates.

"My father was particularly affected by the poverty he witnessed in Denmark in the 1930s and later during his work-related travels to places like India. And my mother was influenced both by her travels with my father and by a Quaker school that she attended for a year in England.

"Both of my parents were very much focused on the plight of underprivileged children," Birgitte Øigaard adds. "That's why one of the criteria for a Topsoe charity project is that it should relate in some way to education or to children in distress."

Other project requirements
There are also a few other requirements that are embedded in the company programme. Among other things, charity donations may not be made to projects with a predominantly political or religious agenda, and all of the supported projects must be monitored to ensure that donations are used for their intended purpose. Most of the funding also has some kind of time limit. Moreover, the donation must also be linked geographically to Topsoe's business territory.

During Haldor Topsøe's lifetime, he was very focused on where he could make a difference and give back to the societies where the company operates. Today the Charity Committee in Haldor Topsoe A/S supports this tradition by asking each local office in the company's worldwide organization to provide ideas for new donations. The offices can thus use their local knowledge to make the best possible suggestions.

Long-term sustainability
One of Birgitte Øigaards hopes for the future is that charity endeavors can become sustainable over the long term. As an example of what she means, she recalls a successful project initiated many years ago with private funds from the Topsøe family – a school in Yaroslavl, Russia that is now run largely through donations from grateful former students.

"I also hope that the continued growth of Haldor Topsoe A/S will be reflected in an expansion of the charity programme," Birgitte Øigaard adds.

New projects can still be added
Topsoe funding for the establishment of Utsho Village was completed in mid-2014, but the Charity Committee continues to stay informed about the progress and needs of the project. Meanwhile, the Committee is also reviewing a number of other project applications.

One of the latest additions to the company's charity programme was initially meant as a surprise to celebrate Haldor Topsøe's 100th birthday.

"We wanted to find something that would really make him happy," his daughter relates. After a conversation with the head of Topsoe's South African office, they found the perfect project in Kampala, Uganda: a home for street children run by a former soccer star who had spent his own childhood in the streets.

Haldor Topsøe did not live quite long enough to see the results. But he would no doubt have been pleased to know that the home in Kampala is now an official part of the charity programme at Haldor Topsoe A/S.

Topsoe charity contributions

Under its charity programme, Haldor Topsoe A/S is contributing to the following:

- A school project in Sunderbans, India; a central boarding school has been constructed, and work has begun on the first of 10 non-formal schools in outlying villages
- A home for street children in Kampala, Uganda
- A charitable foundation for underprivileged children in the Tula region of Russia
- Improvements to two children's homes in Argentina
- Construction of an IT lab at a school in Nepal
- An irrigation project at an agricultural college in South Africa

Most of the above projects take place in cooperation with local and foreign NGOs and/or donors. New projects are also being considered.

Our **business**

"Our customers are under **constant pressure** to get more from less - even the smallest **improvements in performance** can add up to something really significant."

Giving customers what they really need

In 2014 Topsoe launched a new corporate brand to differentiate the company more clearly in the marketplace, create new business opportunities and realize the revenue that is necessary to meet its ambitious growth targets.

Topsoe already has a solid, well-established brand across many industries, not least due to the late founder of the company Dr. Haldor Topsøe. He worked tirelessly for more than 70 years building the reputation of his company. To a large extent he also personalized Topsoe's brand. After Dr. Topsøe's passing, and with an ambitious growth strategy firmly in place, the company now needs to build on this foundation, increase sales and look more broadly at its markets in order to expand its customer base.

"We must win more customers, and we need to sell more to industries that do not know us yet. But we also need to become better at presenting our entire portfolio of products and services to our existing customer base , because buying multiple products or services from us often brings substantial synergies that translate into customer efficiencies," says Kristine Ahrensbach, VP for Corporate Communications and Marketing in Haldor Topsoe A/S.

"Another key goal of the new brand is for Topsoe to remain an attractive place to work in an industry where competition for talent is fierce. A strong brand that is easy to recognize is key in this context," Kristine adds.

Customers provided input
As part of the brand project, more than 200 customers and internal stakeholders were interviewed about their experience with Topsoe. Based on this, Topsoe defined what is truly unique about the services and solutions the company offers, and identified how the company adds value to its customers' businesses. Topsoe also performed a detailed mapping of the wide range of industries it serves, including the specific processes, products and services it provides to these industries.

"From evaluating the feasibility of a new plant or product, to getting it built – running – and keeping it running, we make a real difference for our customers."

Customer-focused company
While Topsoe is and has always been a customer-focused company, the interviews revealed that the company has a highly engineering-oriented, technical, scientific and somewhat product-centered view of the world.

"We quickly realized that we need to think of ourselves as a provider of solutions, rather than of products or services. We have to become better at distinguishing between what we are selling, and what our customers are actually buying. This means we need to take a broader view of our customers' underlying needs and pains – a view that goes beyond ourselves and our products," says Kristine.

Outside-in rather than inside-out
The brand project is not only about launching a new visual identity in the form of typography, new imagery, colors and nice-looking geometrical shapes. It marks a fundamental shift to an outside-in approach in which we look at services and products through the eyes of our customers to a much higher degree than before.

"From our customer's standpoint we want to be easy to do business with. This means interacting with us needs to be smooth and effortless," says Kristine."More importantly, the brand brings a strong focus on added value. All customers have problems that require resolution. Our products and services, no matter how good, are inevitably only part of the solution to those problems. By listening and asking questions, we can achieve the insight that allows us to deliver optimal solutions that address our customers' challenges head-on. In other words, we can give our customers what they really need."

Making optimal performance possible

Optimal performance.

These two words encapsulate what is unique about Topsoe and the value the company brings to its customers around the world. These words have therefore been assigned a leading role in the company's new brand communications that went live in October 2014.

Today Topsoe's customers are under constant pressure to get more from less. In fact even the smallest improvements in performance can often add something really significant. Some customers need to increase their capacity or yield in order to seize market opportunities. Others need to improve energy efficiency or runtime to reduce costs, and most of them need to reduce waste or emissions to adapt to changing regulatory requirements.

Choosing optimal performance as a key part of Topsoe's promise to customers directly addresses these challenges. Regardless of whether the next improvement requires revolution or incremental evolution, the message is that Topsoe's scientists and engineers work closely with customers to get the most out of our processes and products using the least possible amount of energy and resources. In other words, optimal performance – meaning the best possible solution as perceived by the customer. Nothing more, nothing less.

This may sound easy, but it rarely is. In many of the industries Topsoe serves, reaching an optimal solution to a given problem is a dynamic and often complex challenge because parameters and possibilities can change from day to day. Growth cannot be taken for granted, customers can stop buying or switch to competitors, costs can fluctuate in unpredictable ways. Sometimes even the fundamental premises of a given business model can change.

Topsoe does not claim to be able to solve all of these challenges for customers. What it does promise is to understand and accept these working conditions and be focused on always finding the best possible solution to help customers navigate in the best way possible.

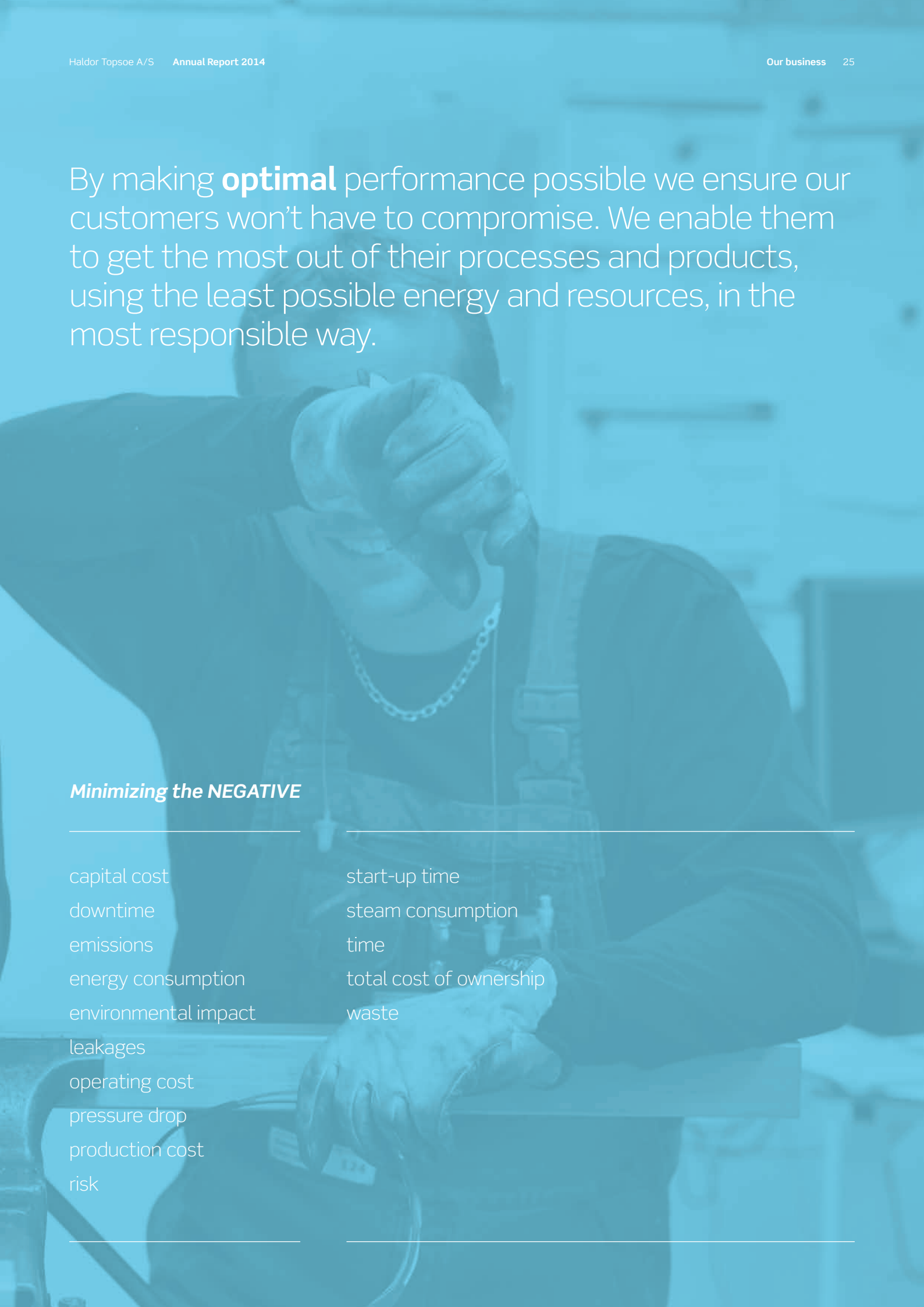
What's more, Topsoe's unique advantage is the fact that the company is a pioneer in surface science and has more than 75 years of experience in delivering the benefits of this through engineering. Backed by its reputation for reliability, this combined and integrated approach differentiates Topsoe in achieving optimal performance for its customers.

Some customers need to increase **capacity** or **yield** in order to seize market **opportunities**. Others need to improve **energy efficiency** or **runtime** to reduce costs. Most need to reduce **waste** or **emissions** to adapt to regulatory changes.

Maximizing the POSITIVE

activity
availability
capacity
carbon efficiency
cleanliness
conversion
co-production
cost efficiency
cycle length efficiency
energy efficiency
energy flexibility
feedstock flexibility
fuel economy
lifetime
onstream factor
opportunities
output
plant efficiency
product properties
production level
production rate
profitability
purity
reliability
safety
speed
stability
yield
yield structure

By making **optimal** performance possible we ensure our customers won't have to compromise. We enable them to get the most out of their processes and products, using the least possible energy and resources, in the most responsible way.



Minimizing the NEGATIVE

capital cost
downtime
emissions
energy consumption
environmental impact
leakages
operating cost
pressure drop
production cost
risk
start-up time
steam consumption
time
total cost of ownership
waste

What is **catalysis**?

In popular terms, catalysis is a process that accelerates a chemical reaction which would otherwise be uselessly slow. Catalysis makes it possible to turn a great variety of resources into important and necessary products – quickly, efficiently and with a minimum of energy and waste.

The agent that makes all this happen is called a catalyst.

The importance of catalysis to industry, the environment and our everyday lives is huge. In one way or another, catalysis is involved in 90% of all commercially produced products – from fertilizer to furniture to the fuel in our cars. It can make expensive processes cheaper, or turn worthless waste into valuable commodities. It can clean the air we breathe.

The heart of Topsoe's business
Catalysis and related technologies are the heart of Topsoe's business; we have worked for decades to increase our understanding of this process, achieving major breakthroughs as recently as 2014 (see opposite page). Our customers include the agricultural sector, the refining industry, power plants and a wide variety of manufacturers.

The shape and chemical makeup of a catalyst can vary greatly, depending on what it is used for. Topsoe catalysts are often made as a porous pellet that is covered with the catalyst substance (see photo). The catalyst pellets are arranged inside a container called a reactor, and the substances to be transformed (called 'reactants') are then passed through the reactor in gas and/or liquid form. The reactants are transformed into the desired product on the surface of the catalyst.

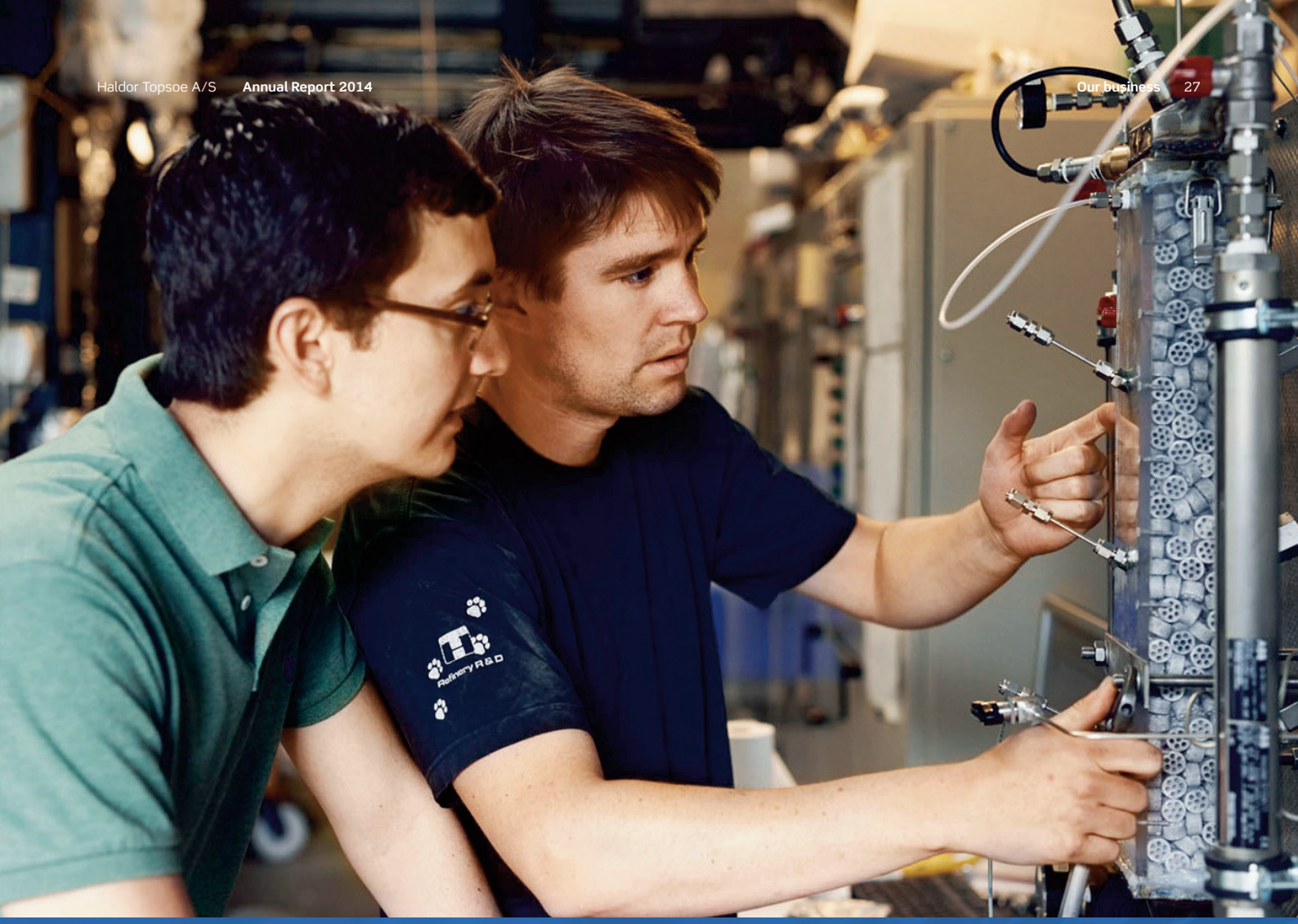
"There's always a better way to do things. If it's not scientifically proven that something can't be improved, we believe it can."

Tailor-made customer solutions
Process design is another important aspect of catalysis. A catalytic conversion usually requires many different catalysts, each with its own task, and Topsoe designs tailor-made processes, hardware and catalysts that work together to meet the individual performance requirements of customers.

Staying tuned to market needs and working with customers to discover new solutions has helped us to grow both our knowledge and our business.

In the pages that follow, we will show you examples of how Topsoe catalysts, hardware and processes create value for our customers by making optimal performance possible.

The fact that we both produce catalysts and license technology gives us the "big picture" view it takes to ensure optimal performance.



Breakthrough research provides insights at the atomic level

2014 was a breakthrough year for Topsoe's understanding of catalysis. In two separate peer-reviewed articles, Topsoe and its global research partners were able to publish ground-breaking new knowledge on catalysis at the atomic level.

In the years to come, the knowledge achieved through this work will enable Topsoe to take a quantum leap forward in the development of new and urgently-needed catalysts to reduce harmful emissions related to the refinery and automotive industries.

The action of atoms at 'work'
One of the articles, published in July 2014 in Nature Materials, describes a catalyst 'in action' at the atomic level under conditions similar to those in an automotive catalytic system.

The processes were made visible to the human eye with the help of a newly-developed nanoreactor – essentially a miniaturized catalyst created on an extremely small silicon chip and inserted into one of Topsoe's high-resolution electron microscopes. The nanoreactor was developed in a close collaboration between Topsoe, the Delft University of Technology and FEI Company, all within the Nano-Imaging under Industrial Conditions (NIMIC) consortium.

The atomic structure of refinery catalysts
The other article, published in September 2014 in Angewandte Chemie, deals with Topsoe's TK catalyst series, which is used by oil refineries around the world. It contains first-ever images showing how the individual atoms of the active ingredient in such catalysts are arranged, providing new insights into what makes a catalyst more effective.

This knowledge described in this article was achieved in collaboration with world-renowned experts within catalysis and electron microscopy, including Dr. Quentin Ramasse at the SuperSTEM facility in Daresbury, UK, and Dr. Christian Kisielowski of the Lawrence Berkeley National Laboratory in California.

TRUCKS/
OFF ROAD VEHICLES

BIO FUELS

The road to **optimal** performance

A strategic partnership between Scania and Topsoe has been a mutual learning experience in which each company contributed its knowledge towards a common goal. The latest result of this cooperation is a series of long-haul diesel trucks that exceed even the highest EU emission standards.

”Aren’t they beautiful?”

Senior Manager Fredrik Swartling, head of Emissions Treatment at Scania AB, admires the row of shining Goliaths that greet each guest at the Scania Demo Center in Södertalje, Sweden. He’s looking at the latest models in a very long line of Scania long-haul trucks, each of which is optimized to meet the strictest emission standards – and the most demanding customers.

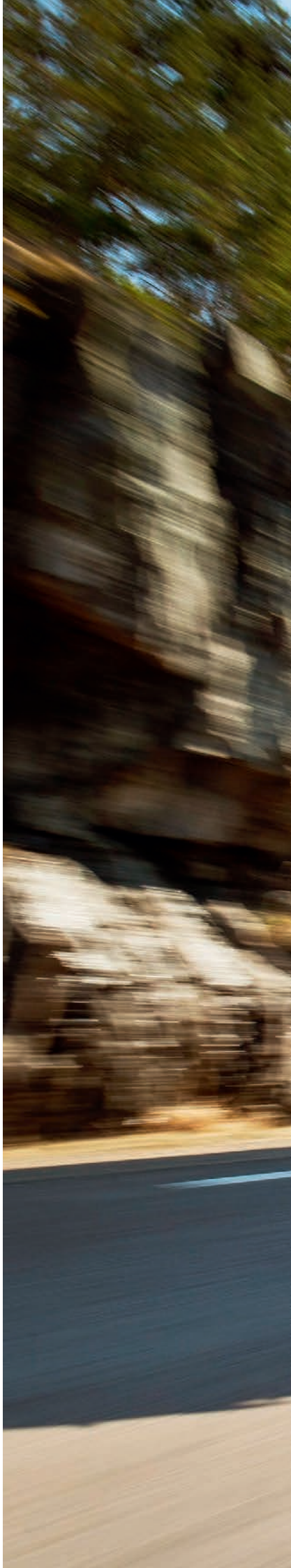
Haldor Topsoe A/S has been a part of Scania’s optimization journey since 2000, when it partnered up with Scania to create new and better emission reduction systems in Scania’s heavy-duty diesel trucks. At the time, the set of EU emission regulations known as Euro III had just been adopted, and even stricter regulations were expected going forward. Scania needed a partner that could help them choose and develop new technologies that could keep up with these requirements.

“We made the right choices, thanks to Topsoe, there’s no doubt about that,” Fredrik Swartling says. “Topsoe has played a very special part in our journey.”

New systems to reduce emissions were necessary

The year 2000 was something of a turningpoint for Scania. In the years leading up to the millennium, the company had been able to comply with the first three sets of EU emission regulations (Euro I, Euro II and Euro III) simply by optimizing engine combustion.

But everyone in the automotive business was aware that the next set of EU requirements – Euro IV – would be so strict that a new technology would be needed to bring down nitrogen oxide (NOX) emissions. →




STREAMLINE
SCANIA
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DSF 206

"We made the right choices, thanks to Topsoe, there's no doubt about that. Topsoe has played a very special part in our journey."

***Fredrik Swartling**, Senior Manager, head of Emissions Treatment, Scania*

At the time, Scania was working on a technology called exhaust gas recirculation (EGR). The system involves leading part of the engine exhaust back through the motor before finally releasing it through the tailpipe. This recirculation lowers combustion chamber temperatures, thereby also reducing emissions of NOX, which forms primarily when a mixture of nitrogen and oxygen is subjected to high temperatures.

Each company could learn from the other

Topsoe, however, had another idea – a system called selective catalytic reduction (SCR). An SCR catalyst is placed in the tailpipe of the truck, where a reaction takes place that converts the NOX emissions to harmless nitrogen and water. This type of solution is known as after-treatment.

Many companies were working on after-treatment systems at the turn of the millennium. Scania, however, had been moving towards a system based solely on EGR when it decided to ask Topsoe about SCR and after-treatment technology. What

happened next was a mutual learning experience.

"When we started learning about SCR, the competition was ahead of us in this area," Fredrik Swartling recalls. "We understood that we needed to catch up, and Topsoe taught us how SCR works and about the dynamics of the catalyst. Meanwhile, we taught Topsoe about the automotive industry, its requirements and our engines." Scania was Topsoe's first partner in the automotive area. And Topsoe became Scania's first after-treatment development partner. Both companies had much to learn from each other.

Pushing towards an optimal balance

Over the years that followed, Scania and Topsoe worked closely together to develop systems to meet the ever-evolving emission requirements of Euro IV, Euro V and finally Euro VI, which went into force in January, 2014.

Throughout this journey, the two companies pushed each other towards a mutual goal: to achieve the best possible balance of performance parameters.

"Optimal performance is not about having the best engine or the best after-treatment," says Fredrik Swartling. "It's about balancing the performance of the different components. This is the combination that the customer will buy." →

About Scania

Scania CV AB is one of the world's leading manufacturers of trucks and buses for heavy transport applications. The company employs some 38,600 persons worldwide and has production units in seven countries.

Scania's global headquarters lie poised on the brow of a wooded hillside in Södertalje, Sweden, 30 kilometers southwest of Stockholm. Some 5,800 people are employed here in sales, administration and other tasks. The complex at Södertalje is also home to Scania's research and development operations, which employs another 3,300 persons.

With its focus on continuous improvement and its aim of being the world's leading provider of sustainable transportation, the Scania profile fits well with the Topsoe aim of making optimal performance possible.

A Scania V-8 engine.

Fredrik Swartling inside a Scania truck.

"Optimal performance is not about having the best engine or the best after-treatment. It's about balancing the performance of the different components."

***Fredrik Swartling**, Senior Manager, head of Emissions Treatment, Scania*

The challenge of Euro VI
In their work together, Scania and Topsoe found that the Euro IV and Euro V emission requirements could be met with either an EGR or SCR system. But when the highly restrictive requirements of Euro VI were introduced, the initial belief was that both systems would be needed in order to achieve the required emission reduction – and this was the solution presented in the first Euro VI diesel engines from Scania.

But neither Scania nor Topsoe was completely satisfied with this result. Using two systems was both costly and complex; a single system would be more robust. Achieving the required emission reduction was impossible with an EGR-only system, however. And to begin with, the same was assumed to be true of an SCR-only system.

But as it turned out, this was not the case.

A single system to reduce emissions
As Scania gained a greater understanding of how SCR works, and as Topsoe learned how an engine can be built to support catalyst performance, a better Euro VI solution began to take form. And on 21 March 2013, Scania was able to unveil a long-haul diesel engine that performs optimally with an SCR-only system developed in close cooperation with Topsoe.

According to Fredrik Swartling, Scania was the first truck manufacturer in the world to adopt this emission reduction strategy.

Topsoe's automotive technology is based on the unique DNXRR catalyst that has been carefully adopted to comply with the stringent demands of the automotive industry. The catalyst is based on a lightweight fibre-reinforced ceramic structure with a high cell density.

"With Scania, we have moved from being a supplier of components to being a development partner."

***Michael Dennis Knudsen**, General Manager, automotive sales and marketing, Haldor Topsoe*

A vanadium-based solution
The system uses Topsoe's vanadium-based SCR catalysts to achieve optimal emission reduction without compromising fuel efficiency. Since vanadium is known to have emission issues of its own at high temperatures, the system is designed to keep operating temperatures low enough to avoid this problem. This temperature management with delicately controlled operating temperatures adds to the excellent fuel economy and ensures effective regeneration (cleaning) of the particulate filter at the same time.

According to Fredrik Swartling, extensive real-life driving tests have proven that the vanadium catalyst continues to perform optimally for the entire life of a long-haul diesel truck, which must hold up to at least 700,000 kilometers on the road:
"The Topsoe catalyst actually performs better after it has been used than when it was new. I'm very confident about this product."

Ready for the future
In other words, the SCR-only line of diesel trucks that can now be viewed at Scania headquarters in Södertalje has placed Scania exactly where it wants to be: at the forefront of innovation. In light of the fact that the next set of EU regulations is expected to focus on fuel economy, the fuel efficiency of the SCR-only solution is already oriented towards future requirements.

"We have to be one step ahead of the game and go even deeper in our understanding of what we can do after Euro VI," says Fredrik Swartling. "And we hope to go on having a close cooperation with Topsoe."

Topsoe to work with Scania in Brazil

Topsoe's new Brazilian automotive catalyst factory is expected to open by mid-2015.

In 2014 a new level of cooperation between Topsoe and Scania began to take form when Topsoe took steps to establish an automotive catalyst factory in Brazil. The facility will strengthen Topsoe's presence in Latin America while enabling Scania to use locally-produced catalysts at its own Brazilian manufacturing facilities.

Within the automotive industry, Brazil represents huge growth opportunities. There are close to 40 million passenger cars, trucks and busses on the Brazilian roads today, and Brazil is by far the largest manufacturer of heavy-duty vehicles in the Latin American region. About 25% of Scania's total production takes place in Brazil; last year, the company sold some 20,000 vehicles there.

Topsoe's Brazilian factory is expected to be up and running by mid-2015.

TRUCKS/ OFF ROAD VEHICLES

BIO FUELS

Ensuring **optimal** plant performance

Topsoe's cooperation with ORYX GTL in Qatar is a story of ambitious goals, technical advances and shared determination.

The highway from the Qatari capital of Doha shoots northwards across the desert for 80 kilometers before arriving at Ras Laffan Industrial City, a vast industrial hub where Topsoe has helped realize a national ambition.

Here we find ORYX GTL, a joint venture between the state-owned Qatar Petroleum (51%) and the South African-based energy and chemicals company Sasol Ltd (49%). Topsoe's proprietary equipment, catalysts, service, engineering design and licensed technology are all involved in the ORYX Gas-to-Liquid (GTL) facility inaugurated at Ras Laffan in 2006 by the Emir of Qatar.

At the time, the plant carried a price tag of around a billion dollars and was the largest of its kind – a first step towards Qatar's stated ambition of becoming the 'GTL capital of the world'.

"And today Qatar is the world's GTL center," says Business Development Manager Albert Van Wyk, who works for ORYX GTL in Qatar. "Ninety per cent of the world's GTL fuel is made in this country."

Optimal performance – on the road and in the plant

GTL Diesel is the primary product of the ORYX GTL plant, which also produces GTL Naphtha and liquefied petroleum gas (LPG). The feedstock for these products comes from Qatar's enormous offshore reserve of natural gas, which is brought up from below the Gulf north of Qatar and transferred into the industrial city at Ras Laffan.

As a transportation fuel, GTL Diesel is known as a premium product with a high cetane number, a low content of sulfur and aromatics and good cold flow characteristics. Its high quality makes it well suited to modern diesel engines; vehicles that run on GTL Diesel have substantially fewer emissions and much less engine wear. And while ORYX GTL produces fuels that perform optimally on the road, Topsoe is working with ORYX GTL to ensure optimal performance at the production plant.

Shutdowns can cost millions of dollars every day

Topsoe's main contribution to the ORYX GTL facility is the plant's syngas technology, including the autothermal reformer (ATR) in which natural gas is catalytically converted to synthesis gas.

After this reforming, the synthesis gas is converted to wax using a process called low-temperature Fischer-Tropsch (a technology licensed by Sasol). Finally, the long

About Ras Laffan Industrial City

Nearly 300 sq.km in size, the Ras Laffan Industrial City is located 80 kilometers northeast of Doha and is the hub of Qatar's natural gas based industries. ORYX GTL was the first (but no longer the only) gas-to-liquid production facility here; the production of liquid natural gas (LNG) is another major activity at Ras Laffan.

Ras Laffan also encompasses an array of support functions including power plants, emergency services, a world-class port and a huge seawater cooling system used by all the industrial plants here.

A daily stream of buses and cars bring in a work force representing more than 50 different nationalities. Visitors and employees alike pass through strict security checkpoints before entering the city.

"Haldor Topsoe is instrumental in achieving our goals by focusing on technical enhancement to lengthen the operational lifetime of each component."

***Albert Van Wyk**, Business Development Manager, Oryx GTL*

carbon chains of the wax are hydrocracked (a technology licensed by Chevron) to become high-quality GTL Diesel and other liquefied products.

Topsoe's gas reforming process is very important to the ORYX GTL plant. If something goes wrong with the ATR (or any other major element in the syngas process), it can shut down the entire operation while repairs are made. And that means loss of revenue while production stands still.

"Every day of production means literally millions of dollars," says Albert.

"ORYX GTL is highly profitable, even by Middle Eastern standards."

Addressing "teething problems" and unplanned stops

As the first commercial-scale facility of its kind in the world, the ORYX GTL plant experienced what Albert calls →

About Qatar
The State of Qatar is a 4,416 sq mi. peninsula that extends into the Persian Gulf from the eastern side of the Arabian Peninsula. It shares a border to the south with Saudi Arabia and has a population of about 2.27 million, of which approximately 15% are Qatari nationals.

A former pearl fishing center, Qatar has in recent years experienced explosive growth and is now one of the richest countries in the world, thanks in large part to its enormous oil and gas fields. The capital city of Doha is, among many other things, home to the satellite TV station Al-Jazeera; in 2022, Qatar will host the FIFA World Cup football tournament.

Under the leadership of the country's current Emir, Sheikh Tamim bin Hamad al-Thani, Qatar is realizing a broad national development strategy that includes a diversification of the oil and gas industry. ORYX GTL complements this diversification by adding gas-to-liquid (GTL) products to the country's energy mix, which also includes liquid natural gas, crude oil, condensates, natural gas plant liquids and other hydrocarbon liquids.

Sources: BBC News Middle East, Qatar Profile 2014 World Population Review, Qatar population

"There is no doubt that our approach to customer support and the way in which we assist our customers has played a crucial role in our cooperation with ORYX GTL."

***Thomas S. Christensen**, Technology Supervisor, Haldor Topsoe*

"teething problems" to begin with. During the commissioning of the plant, Topsoe worked closely with ORYX GTL to monitor and interpret data collected from the plant, and technical experts at Topsoe offices in Denmark were on call to provide quick response to technical queries.

Topsoe designed the ATR to operate with a low steam to carbon ratio in order to create an optimal syngas quality. One of the initial challenges, however, involved an ATR component called a CTS burner that suffered material loss due to corrosion. This reduced the operating time of the syngas unit.

Today, a redesigned burner has been optimized to perform successfully for 2-3 years, and the learnings from this experience have been implemented at another GTL project in Escravos, Nigeria.

Going forward, Topsoe and ORYX GTL continue to investigate new optimization possibilities, often with the help of plant simulations.

An example of how unplanned stops are being minimized is a Topsoe innovation that can automatically place the ATR in a so-called 'safe mode' if operational problems begin to develop. The 'safe mode' slows down operations to 90-95% of full capacity before the problem becomes critical, allowing technicians to make necessary adjustments without a full-scale plant shutdown.

Minimizing costs of a turnaround
Unplanned and relatively short production shutdowns of the type

described above are one thing. Another optimization challenge has to do with what is known as a 'turnaround': a planned shutdown of up to 50 days or more, during which time maintenance is performed, components are replaced and the plant is thoroughly checked.

Turnarounds are hugely expensive, both in terms of logistics and lost production time. They are also a fact of life in this business – but Topsoe is currently supporting ORYX GTL with an optimization project to extend the normal time between turnarounds from two years to three. It's a long-term and highly ambitious goal that involves optimizing every critical plant component for maximum life.

For Topsoe, this means that each critical component in the ATR portion of the plant is regularly tracked using a color-coded system to indicate whether it is living up to its projected life expectancy. As component performance is optimized, the graphic expression of this tendency moves from red to yellow to green.

Albert is pleased with Topsoe's increasingly 'green' contribution to the turnaround goal:

"Haldor Topsoe is instrumental in achieving this goal by focusing on technical enhancement to lengthen the operational lifetime of each component. The ATR technology is on track to increase the shutdown intervals from 2016 onwards," he says.

A new customer agreement makes good cooperation better

In May 2013, the cooperation between Topsoe and ORYX GTL was further strengthened with a five-year customer service agreement. In it, ORYX GTL is guaranteed fast, 24-7 access to Topsoe's technical support team at an agreed-upon rate. Topsoe, meanwhile, is kept aware of planned maintenance projects at ORYX GTL, and can therefore also guarantee a ready supply of spare parts and catalysts.

Regular optimization meetings are held in Qatar and Denmark in which management and technicians can keep each other aware of any problems that need to be addressed. The meetings are also designed to keep ORYX GTL aware of any new technological breakthroughs achieved at Topsoe that could improve performance at the Qatari plant. Access to any and all such improvements is guaranteed in the new contract.

"Continuous improvement is one of the values of ORYX GTL," says Albert.

Albert Van Wyk in front of the plant's office building at Ras Laffan.

"Optimizing the plant is always an ongoing priority in the quest to improve overall plant efficiency."

***Albert Van Wyk**, Business Development Manager, Oryx GTL*

"Optimizing the plant is always an ongoing priority in the quest to improve overall plant efficiency."

And Topsoe of course remains firmly committed to making optimal performance possible.

Brimming with activity

Successful new HyBRIM™ catalysts enhance refinery performance and address a number of industry challenges.

Expectations were running high in 2013 when Topsoe's Refinery Business Unit launched the first of its new-generation HyBRIM™ catalysts, the TK-609 HyBRIM™. And today it's safe to say that the company has not been disappointed.

"The TK-609 HyBRIM™ is a great success," says product manager Allan Uldam, who is responsible for the technical side of Topsoe's diesel hydrotreating catalysts. "The industry acceptance of TK-609 HyBRIM™ has been remarkable."

In February 2015, two years after launch, the TK-609 HyBRIM™ had already been sold to an impressive 55 hydroprocessing units. Allan Uldam points out that this is an even better launch than Topsoe's all-time best-selling catalyst, the TK-578 BRIM®:

"Within its first two years on the market, the TK-578 BRIM® had achieved about 30 references, which is impressive in itself," he notes. "I'd also like to point out that one of the reasons the new HyBRIM™ catalyst has been so successful is that it builds on the success of the BRIM® technology, and we expect that both the BRIM® and the HyBRIM™ catalysts will enjoy continued success."

Designed to meet customer needs

In developing the HyBRIM™ catalyst, Topsoe has paid close attention to the needs of its refinery customers. Compared to BRIM® catalysts, the HyBRIM™ provides a level of activity

Topsoe's new TK-609 HyBRIM™ catalyst.

that is up to 40% higher. The increased activity can be leveraged to obtain:

- a longer catalyst life
- a higher liquid volume swell
- the ability to effectively upgrade even the heaviest feedstocks

Depending on customer requirements, the processes in which the HyBRIM™ catalyst is used can be designed to maximize one or more of the above characteristics – or the process can be designed to achieve a perfect balance between all performance parameters.

Whatever the case, the overall goal is to optimize performance in accordance with the needs of the individual refinery.

Addressing industry challenges
The new HyBRIM™ catalyst addresses two major challenges that affect Topsoe's customers in the refining industry.

One of these is an ever-increasing demand for cleaner fuels, driven by a worldwide pollution burden that has spread from the Western world to emerging economies in countries such as China, Russia, India and Brazil. Low-sulfur fuels are needed to power the modern diesel engines that have been designed to meet government-imposed emission standards.

A related and worldwide challenge is the diminishing supply of high-quality feedstocks. The crude oil that is being pumped out of the ground today is becoming heavier and has a higher content of sulfur and aromatics, both of which create an increased need for cost-effective upgrading.

Topsoe has been developing catalysts for many years to help refineries produce cleaner fuels, even as the supply of lighter feedstocks is diminishing. The characteristics of the HyBRIM™ catalyst, however, make it one of the company's most attractive solutions to date.

Optimal ULSD production
Like its predecessor in the BRIM® series, the TK-609 HyBRIM™ can be used as a hydroprocessing catalyst to effectively remove sulfur from diesel fuel. This is vital for refineries that produce ultra-low sulfur diesel (ULSD), a premium product for which the worldwide demand is increasing.

In recent years, ULSD has in fact replaced conventional diesel throughout most of Europe and North America and is therefore an extremely important product.

For Topsoe's customers, the efficiency and volume swell associated with the TK-609 HyBRIM™ catalyst translate into optimal hydroprocessing per- →

formance in the ULSD segment. Moreover, the TK-609 HyBRIM™ is the first in a new generation of HyBRIM™ catalysts that can be put to equally good use in other important segments of the refinery business.

Enhancing the hydrocracking process

As the first catalyst in this emerging HyBRIM™ family, the TK-609 HyBRIM™ is also designed for use in the hydrotreating section of a hydrocracking unit. Hydrocracking is a highly profitable process that enables refineries to upgrade inexpensive heavy oils to high-end petroleum products such as diesel, jet fuel and gasoline.

In this context, the TK-609 HYBRIM™ is used to remove sulfur, nitrogen and metals from the heavy oil before it is fed to the hydrocracking unit. This pretreatment is absolutely essential, because a hydrocracking unit will not function properly if the feedstock contains these substances.

With the improved HYBRIM™ characteristics, the pretreatment process is dramatically optimized, thereby also improving the yield, the quality and the profitability of the end product.

New launches – new enhancements

In 2014, Topsoe launched two new members of the HyBRIM™ generation – the TK-565 and the TK-569 – for use in pretreatment of the feedstock to another refinery process called fluidized catalytic cracking (FCC). This process is primarily used to upgrade heavy oil products to high quality gasoline.

The two new HyBRIM™ catalysts are designed to remove sulfur, nitrogen and metals and to saturate aromatics from heavy-oil feedstocks before sending them on to the FCC unit. This pretreatment is not essential, but it greatly improves FCC performance, optimizing the end result in the same way as the TK-609 HyBRIM™ does in connection with hydrocracking.

Immune to oil price fluctuation

Falling oil prices in 2014 have had a negative effect on the economies of many oil-exporting nations, but this trend does not seem to have affected the demand for Topsoe's HyBRIM™

About the Refinery Business Unit

Topsoe's Refinery Business Unit was officially created in 2013, but the company has been providing the refining industry with catalysts, processes, hardware, engineering and customer support for decades.

Catalysts and technology for the production of ultra-low sulfur diesel (ULSD) is the foundation of Topsoe's current refinery business; a full 40% of the world's ULSD is produced with the help of Topsoe catalysts, making Topsoe the market leader in this segment.

In recent years, the company has developed technology, know-how and catalysts in the area of hydrocracking and fluidized catalytic cracking, both of which are processes that involve upgrading inexpensive, heavy petroleum products to premium fuels.

"The constrained economy means that some refineries can no longer afford to build new facilities or upgrade existing ones. But our catalysts help them make the most of what they have."

***Allan Uldam**, Product Manager, Haldor Topsoe*

catalysts, says Allan Uldam.

"There is still a need for high-quality petroleum products," he notes. "The constrained economy means that some refineries can no longer afford to build new facilities or upgrade existing ones. But our catalysts help them make the most of what they have."

HyBRIM™ sales in the US and China
Market conditions in the US and China have made Topsoe's HyBRIM™ catalysts particularly attractive in these countries.

"A great deal of our new HyBRIM™ catalyst sales is taking place in China and the US," Allan Uldam notes.

Henrik Rasmussen, vice president of Catalyst and Technology in Topsoe's US organization, points out that a high demand for gasoline in the US has created a solid market for the TK-565 HyBRIM™ and TK-569 HyBRIM™. As mentioned earlier, both of these are pretreatment catalysts that are used in connection with gasoline-producing FCC units.

The TK-569 HyBRIM™ was developed with a particular view to the US market, Henrik Rasmussen adds.

"This catalyst is designed to perform optimally with the type of FCC feedstock that is widely used in the US," he says. "This maximizes pretreatment efficiency."

Significantly tighter government limits on the sulfur content of gasoline will be implemented in the US in 2017, a fact that Henrik Rasmussen expects will create an even greater demand for Topsoe's FCC pretreatment catalysts. And he points to yet another factor that can make all the HyBRIM™ pretreatment catalysts attractive in the US: the fact that US refinery customers have access to inexpensive hydrogen, which is derived from the country's huge supply of shale gas.

"The HyBRIMTM catalysts promote a higher consumption of hydrogen to achieve greater volume swell and a lower content of aromatics," Henrik Rasmussen remarks. "In this context, a lower hydrogen price adds even greater value to the end product. "

In the Chinese market, meanwhile, Alland Uldam notes that HyBRIM™ demand is affected by the fact that much of the country's crude oil is exceptionally 'tough' (meaning heavy and difficult to refine). At the same time, the Chinese government is increasingly determined to solve its massive pollution problems and continues to tighten its emission regulations. This in turn creates a greater demand for cleaner fuels:

"The versatile HyBRIM™ catalysts speak to both of these challenges and have stimulated considerable interest," Allan Uldam says.

New launches are planned
So what's next for the HyBRIM™ family? Frank Johansson, program leader in Refinery Research and Development, provides the answer to this question:

"We'll continue to develop better HyBRIM™ catalysts to fulfill our customer's needs. We already have new HyBRIM™ catalysts in the pipeline, and we expect new launches within the next few years," he says.

"Meanwhile, we expect that sales within our existing BRIM® and HyBRIM™ portfolio will continue to grow."

Topsoe's ECO-Jet solution has been tested on this vessel, the MS Queen Victoria.

New technology to clean the engine exhaust from ships

In 2014, Haldor Topsoe A/S and its Italian partner Ecospray Technologies S.r.l. launched a groundbreaking catalytic process technology called ECO-Jet that can significantly reduce harmful emissions from marine vessels.

When Topsoe in November 2014 launched a new catalytic process to reduce harmful emissions from ships powered by heavy fuel oil products (bunker fuel), it provided the global shipping industry with an entirely new option to overcome a huge and long-time challenge.

The product, named ECO-Jet, was co-developed with Topsoe's Italian partner Ecospray Technologies S.r.l. and represents more than five years of intense development efforts. It was tested on a large cruise ship, the M/S Queen Victoria, in close collaboration with the vessel's owner, Carnival Corporation, one of the world's largest cruise companies.

Once installed aboard a ship that uses heavy fuel oil, the process eliminates up to 95% of soot emissions while also removing poisonous hydrocarbons and a wide range of heavy metals including vanadium, iron, nickel, silicon and sodium.

Furthermore, the ECO-Jet technology can be combined with a so-called scrubber process that removes sulfur. This is highly necessary, since heavy fuel oil may contain as much as 3.5 per cent sulfur. Sulfur removal is particularly relevant in a number of coastal emission control zones around the world, where the International Maritime Organization (IMO) has recently imposed stricter sulfur limits.

Black smoke and global warming

While pollutant emissions from land-based sources are gradually being reduced in many places around the world, shipping emissions continue to increase. Although air pollution from ships does not have the direct cause

and effect associated with, for example, an oil spill incident, it has a cumulative effect that contributes to air quality problems and to environmental problems such as acid rain and smog.

"When they put out to sea, large ships using bunker fuel emit harmful black smoke. This represents a large source of air pollution globally. Emissions of particulate matter, including soot and NOx from ships, are known to cause lung and respiratory disease and lead to smog over cities," explains Senior Scientist in Topsoe, Keld Johansen.

lenge for the maritime industry, because it imposes many extra requirements on engine exhaust systems. Due to the lack of an available and operational technology, the International Maritime Organization (IMO) has been reluctant to impose stringent limits on particulate emissions.

"In Europe, North America and an increasing number of other places around the world, a truck working in a harbor area must fulfill stringent particulate emission regulations. But the ship at the quay has no particulate regulatory limitations whatsoever. This is highly paradoxical and is linked to the fact that the shipping industry has lacked efficient particulate matter removal technology," says Keld.

"With Topsoe's new ECO-Jet process, we have an operational technology in place that is able to reduce emissions of soot and heavy metals."

***Keld Johansen**, Senior Scientist, Haldor Topsoe*

"What's more, the elementary carbon in ship emissions is graphitic and leads to so-called 'black carbon', which has a high global warming impact. Its downfall on glacier surfaces, for example, reinforces ice melting,"

Providing new options for regulators

While land-based diesel vehicles that run on low-sulfur diesel fuel have had the possibility for particulate removal for many years by means of proven technology, the development of a marine version for ships powered by heavy fuel oil has been a major chal-

In November 2014, Topsoe won the Danish Engineering Product Award for its new ECO-Jet solution. The prestigious award, presented annually by the Danish technical journal Engineering Weekly, honors technological products with significant news value based on substantial technical expertise.

Operational technology in place

"With Topsoe's new process, we have an operational technology in place that is able to reduce emissions of soot and heavy metals. The process has interesting environmental perspectives and, for Topsoe, promising commercial perspectives as well," he continues.

As previously mentioned, the heavy fuel oil or bunker fuel used in the shipping sector contains up to 3.5% sulfur and several hundred ppm of different heavy metals such as vanadium, iron, copper, nickel, calcium, cobalt and sodium. According to Keld Johansen, ships could sail on environmentally friendly marine fuel with a content of sulfur less than 0.1%. The problem, however, is that converting to this fuel is still far too expensive:

"For many years now, the maritime industry has discussed using environmentally friendly fuel. The problem is that the global refinery capacity is still too small to replace bunker fuel. That is why we have to treat the exhaust from bunker fuel in another way. And with our catalytic process, this is feasible now," he says.

Topsoe's new emission process is the result of several pilot projects. The largest pilot was the huge cruise ship MS Queen Victoria, which can accommodate more than 2,000 passengers. The ECO-Jet process was tested here with promising results under tough, real-life conditions.

The issue of marine pollution

Ocean-borne commerce has increased steadily over the past few decades and is expected to continue to play a crucial role in the globalized world economy. This growth will add to air quality problems and global climate change risks unless ship emissions are controlled. Today, however, these emissions remain largely unregulated.

Local and regional air quality problems associated with ship emissions, especially in coastal areas, are a concern because of their public health impacts, smog and greenhouse gas emission. Port communities are additionally burdened by their proximity to shipping facilities. In particular, air pollution emitted from port-related activities adversely affects the health of port workers and those who live near port areas.

Because their air pollutant emissions have been comparatively unregulated, ships and port facilities are now among the world's most polluting combustion sources per ton of fuel consumed. To address these issues, the shipping and port industries have adopted new technologies to improve fuel quality and ship engine technology, while operational changes at ports are reducing the air pollution from port-related activities.

In contrast, the reduction of emissions from commercial marine vessels still represents a major political and legal challenge.

Our **leadership**

"Driven by our **passion for science**, we contribute to a **profitable and sustainable future** for our customers, their businesses, and their communities."

Haldor Topsoe A/S Board of Directors

Henrik Topsøe
Chairman

Christina Topsøe
Member

Nils Bernstein
Member

Jens Kehlet Nørskov
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Oluf Engell
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Jørgen Huno Rasmussen
Member

Aino Irene Saldo
Employee representative

Martin Østberg
Employee representative

Henrik Topsøe
Chairman of the Board

Henrik Topsøe joined Haldor Topsoe A/S research laboratories in 1974 and became Manager of R&D Department in 1992. Over the years, Henrik Topsøe has received many honors and awards and in 2000, he was awarded the François Gault Lectureship from the European Federation of Catalysis Societies. In 2005, he received the Eugene J. Houdry Award in Applied Catalysis from the North American Catalysis Society and in 2010, he received the American Chemical Society Petroleum Division Distinguished Research Award.

Henrik Topsøe became a member of the Executive Managing Committee of Haldor Topsoe A/S in 1986 and in 2008, he was appointed Executive Vice President of Haldor Topsoe A/S. He became member of the Board of Haldor Topsoe A/S in 1993 and in 2012, he became Vice Chairman and was appointed Chairman of the Board in May 2013, following his father, Dr. Haldor Topsøe.

In 2007, he was appointed Chief Executive Officer of Haldor Topsøe Holding A/S.

Henrik Topsøe graduated as chemical engineer from the Danish Engineering Academy in January 1967 and holds a Ph.D. from Stanford University in November 1972.

Henrik Topsøe is the author of more than 180 scientific publications and in 2013, he was elected Foreign Associate of the National Academy of Engineering.

Nils Bernstein *[top left-1],* ***Jeppe Christiansen*** *[top left-2],* ***Aino Irene Saldo*** *[top middle-1],* ***Martin Østberg*** *[top middle-2],* ***Jens K. Nørskov*** *[top right-1],* ***Jørgen Huno Rasmussen*** *[top right-2],* ***Oluf Engell*** *[middle left],* ***Søren Toft*** *[middle],* ***Jette Søvang Christiansen*** *[middle right],* ***Christina Topsøe*** *[bottom left],* ***Jakob Haldor Topsøe*** *[bottom middle],* ***Henrik Topsøe*** *[bottom right].*

Company leadership

Haldor Topsoe A/S has a two-tier leadership structure consisting of the Board of Directors and the Executive Committee.

The Board of Directors is responsible for the overall strategic management of Haldor Topsoe A/S. The Board of Directors supervises the performance of the company, its management and the organization on behalf of the shareholders.

The Executive Committee, in turn, has responsibility for the company's daily operations. As such, the Executive Committee proposes future strategy and key objectives, and following the Board of Directors approval hereof, holds responsibility for the implementation of the strategy and the concrete realization of objectives.

The two entities are separate, and no person serves as a member of both.

The Executive Committee operates a number of other committees e.g. Regional Business Committee, whose purpose is to secure a globally aligned business strategy implementation and explore new business opportunities in the regions. Moreover, a Business Support Committee secures aligned cross-organizational initiatives in order to support Topsoe's overall business and strategy implementation.

Haldor Topsoe A/S is headquartered in Lyngby, just outside Copenhagen in Denmark.

Bjerne S. Clausen
CEO

Bjerne S. Clausen joined Haldor Topsoe in 1979 and has worked extensively with R&D in the fields of surface science and heterogeneous catalysis. Bjerne S. Clausen was appointed member of the Executive Management in 2006 as Director of the R&D Division.

In 2008, he was appointed Executive Vice President and Head of the Technology Division. Bjerne S. Clausen was appointed President and CEO in 2011.

Bjerne S. Clausen is Chairman of the Board of iNANO, the Interdisciplinary Nanoscience Center at the University of Aarhus and member of the Advisory Board of the Department of Chemical Engineering at the Technical University of Denmark. He is also Member of the Board of the Danish Energy Industries' Federation within the Confederation of Danish Industry as well as member of the Danish Academy of Technical Sciences (ATV). Bjerne S. Clausen has served on numerous research and industrial boards and committees.

Bjerne S. Clausen holds a M.Sc. in Material Physics and a Ph.D. in Materials Science from the Technical University of Denmark (DTU). He is adjunct professor in Surface Physics at the Institute of Physics and Astronomy, University of Aarhus, and adjunct professor in Physics at DTU Physics, the Technical University of Denmark. In 2012, Bjerne S. Clausen was appointed Visiting Professor at Business School of Nankai University, and in 2014 he was appointed Honorary Doctor at the Technical University of Denmark (DTU).

Peter Rønnest Andersen
Executive Vice President and Chief Financial Officer (CFO)

Peter Rønnest Andersen joined Haldor Topsoe in January 2013 to take over the position as CFO. Before joining Haldor Topsoe, Mr. Andersen worked for more than 20 years for the A.P. Moller-Maersk Group, including 15 years as CFO and member of the executive leadership team of various Business Units within A.P. Moller-Maersk Group, including Maersk Line.

In Haldor Topsoe, Mr. Andersen is responsible for Finance, IT and Facility Management, and is part of the group executive leadership team.

Mr. Andersen has a MSc in Economics (cand. oecon) from the University of Aarhus and an Executive MBA from IMD, Switzerland, and has obtained leadership training at Cranfield School of Management, Penn State University and Harvard University.

Jesper Nerlov
Executive Vice President and Chief Technology Officer (CTO)

Jesper Nerlov joined Haldor Topsoe in 1998 as research specialist in R&D within the area of fundamental catalytic science. He has had several managerial responsibilities within Haldor Topsoe R&D over the years, and in 2006 he was appointed vice president for Chemicals R&D.

In 2008 he was appointed vice president for Chemicals & Environmental R&D. In 2008 Jesper Nerlov was appointed executive vice president and chief technology officer. In this role he is overall responsible for the global research and development activities at Haldor Topsoe.

Mr. Nerlov has a MSc in Chemistry from University of Copenhagen, Denmark, from 1992, from where he also received his PhD in Physical Chemistry in 1996. Before joining Haldor Topsoe he held a position as assistant professor at the Center for Individual Nanoparticle Functionality at the Technical University of Denmark.

Ulrik Federspiel
Executive Vice President, Amb. Chief Strategy Officer (CSTO)

Ulrik Federspiel joined Haldor Topsoe in 2009 as Vice President for Global Affairs and became Executive Vice President and Chief Strategy Officer in 2012.

In 2013 he also joined the Board of Karnapuli Fertilizer Company(KAFCO) in Bangladesh. He is member of the Advisory Board of the President of the University of Copenhagen and of the University of Aarhus, school of Business and Social Sciences.
Mr. Federspiel has been Chairman of the European DME association since 2011, where he also became a member of the Bilderberg Steering Committee.

Before joining Haldor Topsoe Ambassador Federspiel held Senior government positions for almost twenty years. He has twice as State Secretary been heading the Danish diplomatic services and Foreign Ministry and been Danish Ambassador to the United States of America for almost six years. Before that he was Danish Ambassador in Ireland. From 1993-97 he was heading the Danish Prime Ministers department as Permanent Secretary and Secretary to the Queen in Council.

Ambassador Federspiel is M.Sc. in political science from Aarhus University and M.A. in international relations from University of Pennsylvania, Philadelphia.

Per K. Bakkerud
Group Vice President
Chemical Business Unit

Per K. Bakkerud graduated from The Technical University of Norway in 1980 and served in various positions for Det Norske Veritas, Norwegian Petroleum Consultants and Exxon Mobil until 1990 where he joined Haldor Topsoe A/S

Per K. Bakkerud has worked as process engineer and project manager for many of Topsoe's technologies around the world and has been posted in Argentina, Bangladesh, Japan and China. In 2002, Per K. Bakkerud was appointed Head of Syngas Process Engineering, in 2006 Vice President for Technology and Engineering and in 2009 Vice President for New Technologies in the Technology Division before taking up the position as Managing Director for Haldor Topsoe's Chinese operations in 2011.

From November 2014, Per K. Bakkerud has been appointed as Group Vice President for the Chemical Business Unit. He is the President of Energy Frontiers International; he also serves on the Board of Directors of Natural Gas Conversion Board.

Morten Schaldemose
Group Vice President
Refinery Business Unit

Morten Schaldemose joined Haldor Topsoe A/S the first time in 1997. Before joining the company, Morten Schaldemose worked with Kuwait Petroleum International, holding positions as Plant Engineer and Production Planner.

From 1997-2007, he worked as Process Engineer and Sales Manager for the Refining Technology and in 2007, he was appointed Head of the Refinery Technology Marketing and Sales.

In 2008, Morten Schaldemose decided to pursue his own ventures within the clean tech sector and served as both COO and CEO in companies within the alternative energy sector. In February 2013, however, Morten Schaldemose rejoined Haldor Topsoe, and was appointed Group Vice President of our Refinery Business Unit.

Morten Schaldemose graduated from the Technical University of Copenhagen in 1994 with a M.Sc. in Chemical Engineering and holds an EMBA with Distinction from INSEAD (2007).

Peter Thoft Knudsen
Group Vice President
Environmental Business Unit

Peter Thoft Knudsen joined Haldor Topsoe A/S in 2005 as Manager of the Environmental Technology Sales Group.

Before joining Haldor Topsoe, Peter Thoft Knudsen worked with Elsamprojekt, Anhydro, Novo Nordisk Engineering, and FLS Miljø, holding positions as Manager of Sales and Marketing, Sales Director and Business Unit Manager, among others. He has more than 20 years of international experience working within the energy, environmental, chemical, and pharmaceutical industries.

In 2007, Peter Thoft Knudsen was appointed Director of Project Execution, Technology Division. In June 2009, he became Vice President, Environmental and Refinery, Technology Business Unit. After the internal reorganization, he was in April 2012 appointed Group Vice President of the Environmental Business Unit.

Peter Thoft Knudsen has a lot of experience developing knowledge-based companies in growth. He also has a thorough project sales experience, building relations with customers and cooperation partners on all levels globally.

Peter Thoft Knudsen graduated from the Technical University of Copenhagen in 1987 with a M.Sc. in Mechanical Engineering and holds a Bachelor degree in Business Administration.

Kim Grøn Knudsen
Group Vice President
New Business Unit

Kim G. Knudsen joined Haldor Topsoe A/S in 1996 as research specialist in R&D within the area of refinery catalyst and technology. He has had several managerial responsibilities within Haldor Topsoe R&D over the years, and in 2003 he was appointed head of the Refinery Catalyst and Technology development in the R&D Division.

In 2006, Kim G. Knudsen was appointed Project Director for the company's development of catalysts and processes for the refining industry. At the end of 2008, he was appointed Vice President for the Refinery & Environmental R&D, and in 2010, he was appointed Vice President for the Refinery & Emerging Technologies within Haldor Topsoe R&D.

In 2012, Kim G. Knudsen was appointed Group Vice President and head of the New Business Unit. In this role, he is overall responsible for the company's new and emerging business activities and a member of the Executive Committee.

Kim G. Knudsen holds a M.Sc. in chemical engineering from the Technical University of Denmark (1990), from where he also received his PhD in applied thermodynamics (1992).

Before joining Haldor Topsoe, he held a position as Research Associate Professor at the Technical University of Denmark.

Henrik Guldberg
Group Vice President
Catalyst Production

Henrik Guldberg Pedersen joined Haldor Topsoe A/S in 1998. Until 1999, he worked as a research scientist in R&D. From 1999 until 2004, Henrik Guldberg Pedersen worked as a project manager in the R&D. From 2004-2005 he was posted in Houston, where he worked at the production plant in Bayport.

Until 2006, he worked in R&D as a liaison officer to production plants. In 2006, he was appointed Vice President for research and development of environmental catalysts and processes. He also became member of R&D management. In 2008, he was appointed Vice President of Catalyst and head of the company's catalyst production plant in Frederikssund. He also was appointed member of Catalyst Division management.

Since 2012 Henrik Guldberg Pedersen has been Group Vice President for Catalyst Production and thereby overall responsible for the production plants in Frederikssund and Houston, Bayport. As a result, he has global responsibility of the total catalyst value chain from production planning, raw materials procurement, production, quality control and logistics.

He is also a member of advisory board of Copenhagen Cleantech Cluster. He holds a M.Sc. Chemical Engineering (1995) and a PhD (1998) from the Technical University of Denmark.

Kim Hedegaard
Group Vice President
Engineering Production

Kim Saaby Hedegaard joined Haldor Topsoe in 1999 and has worked extensively within the field of engineering, covering all aspect from development and proposals to project execution and commissioning. In 2009 he was appointed General Manager of technology development covering all Topsoe's commercialized technologies.

In 2012 he was appointed Group Vice President for Engineering Production with the responsibility for Topsoe's global engineering activities out of New Delhi - India, Copenhagen - Denmark, Moscow – Russia and Los Angeles – USA.

Kim Saaby Hedegaard was appointed member of the Executive Management in 2014.

Kim Saaby Hedegaard holds a BA in Chemical Engineering from DTU, an EBA in Management from Copenhagen and the CEL degree in Innovation management from DTU Business.

Financial statements

"Solutions that are **designed to work together**, simply work better."

Consolidated statement of profit and loss

DKK million	Note	2014	2013
Revenue	2	**5,685**	**5,348**
Change in inventories of finished goods and intermediate products		-117	39
Other operating income		63	96
Purchased equipment for contract work		-348	-518
Raw materials and consumables used		-1,624	-1,542
Other external expenses		-1,117	-1,015
Gross profit		**2,542**	**2,408**
Staff expenses	3	-1,613	-1,532
EBITDA		**929**	**876**
Depreciation, amortization and impairment losses for property, plant and equipment as well as intangible assets	4	-366	-175
EBIT		**563**	**701**
Financial income	5	124	106
Financial expenses	6	-110	-127
Profit before tax		**577**	**680**
Tax	7	-137	-127
Net profit		**440**	**553**
Profit attributable to:			
Owners of the parent company		444	553
Non-controlling interest		-4	0
Net profit		**440**	**553**

Consolidated statement of other comprehensive income

DKK million	Note	2014	2013
Net profit		**440**	**553**
Foreign currency translation adjustment		88	-30
Derivative financial instruments used for hedging of future cash flows		-24	7
Tax on this		0	-4
Realized derivative financial instruments transferred to the statement of profit and loss		16	8
Fair value adjustment of available-for-sale financial assets		-21	-32
Tax on this		0	2
Items that may be reclassified to the statement of profit and loss		**59**	**-49**
Actuarial adjustments on pension obligations		-24	28
Tax on this		8	-10
Items that may not be reclassified to the statement of profit and loss		**-16**	**18**
Other comprehensive income		**43**	**-31**
Total comprehensive income		**483**	**522**

Consolidated balance sheet

Assets		December 31	December 31
DKK million	**Note**	**2014**	**2013**
Patents		35	44
Software		32	37
Intangible assets in progress		8	4
Intangible assets	8	**75**	**85**
Land and buildings		705	738
Plant and machinery		941	411
Other fixtures and equipment		262	203
Property, plant and equipment in progress		457	715
Property, plant and equipment	9	**2,365**	**2,067**
Other securities and investments		414	425
Other receivables		42	38
Investments	10	**456**	**463**
Non-current assets		**2,896**	**2,615**
Inventories	11	**1,155**	**1,195**
Trade receivables	12	867	734
Contract work in progress	13	127	170
Receivables from the parent company	14	750	871
Other receivables	15	167	127
Prepayments		40	36
Receivables		**1,951**	**1,938**
Cash		**453**	**384**
Current assets		**3,559**	**3,517**
Assets		**6,455**	**6,132**

Consolidated balance sheet

Liabilities and equity		December 31	December 31
DKK million	**Note**	**2014**	**2013**
Share capital	16	376	376
Revaluation reserve	17	222	222
Foreign currency translation reserve	17	47	-41
Reserve for unpaid share capital	17	241	241
Reserve for value adjustment of hedging instruments	17	-14	-6
Reserve for value adjustment of available-for-sale financial assets	17	282	303
Retained earnings		677	549
Equity attributed to the owners of the parent company		**1,831**	**1,644**
Non-controlling interest		94	0
Total equity		**1,925**	**1,644**
Pension obligations and similar obligations	19	71	43
Deferred tax	20	432	409
Provisions	21	196	208
Bonds	22	996	1,012
Mortgage debt	22	81	92
Credit institutions	22	617	624
Deferred income	22	8	0
Other payables	23	7	8
Long-term liabilities		**2,408**	**2,396**
Bonds	22	17	4
Mortgage debt	22	10	10
Credit institutions	22	215	186
Deferred income	22	3	6
Prepayments from customers	24	437	296
Contract work in progress	13	660	693
Trade payables		350	418
Corporation tax		29	20
Other payables	23	401	459
Short-term liabilities		**2,122**	**2,092**
Liabilities		**4,530**	**4,488**
Liabilities and equity		**6,455**	**6,132**

Consolidated statement of changes in equity

DKK million	Share capital	Reserves	Retained earnings	Total
Equity at January 1, 2014	**376**	**719**	**549**	**1,644**
Net profit	0	0	444	444
Other comprehensive income	0	59	-16	43
Comprehensive income	**0**	**59**	**428**	**487**
Dividend	0	0	-300	-300
Transactions with owners	**0**	**0**	**-300**	**-300**
Equity attributed to the parent company at December 31, 2014	**376**	**778**	**677**	**1,831**
Non-controlling interest	0	98	-4	94
Total equity at December 31, 2014	**376**	**876**	**673**	**1,925**

DKK million	Share capital	Reserves	Retained earnings	Total
Equity at January 1, 2013	**55**	**527**	**840**	**1,422**
Net profit	0	0	553	553
Other comprehensive income	0	-49	18	-31
Comprehensive income	**0**	**-49**	**571**	**522**
Increase of share capital	321	241	-241	321
Dividend	0	0	-621	-621
Transactions with owners	**321**	**241**	**-862**	**-300**
Equity at December 31, 2013	**376**	**719**	**549**	**1,644**

Consolidated cash flow statement

DKK million	**Note**	**2014**	**2013**
Net profit		440	553
Adjustments for non-cash items	32	456	216
Change in working capital	33	-6	-182
Cash flows from operating activities before financial items and tax		**890**	**587**
Interest received, etc.		124	106
Interest paid, etc.		-109	-126
Cash flows from ordinary activities		**905**	**567**
Corporation tax paid		-97	-84
Cash flows from operating activities		**808**	**483**
Purchase of intangible assets		-28	-44
Purchase of property, plant and equipment		-600	-664
Fixed asset investments		-11	-13
Cash flows from investing activities		**-639**	**-721**
Raising of long-term loans		186	1,000
Repayment of long-term loans		-205	-296
Increase of share capital		97	80
Dividend		-300	-621
Cash flows from financing activities		**-222**	**163**
Change in cash and cash equivalents		**-53**	**-75**
Cash and cash equivalents at January 1		934	1,009
Exchange adjustment		39	0
Cash and cash equivalents at December 31		**920**	**934**
Cash		453	384
Deposits with the parent company (cash-pool)		467	550
Cash and cash equivalents at December 31		**920**	**934**

Notes to the consolidated statements

List of notes

Notes to the consolidated 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 (IFRSs), as adopted by the EU, as well as additional Danish requirements applying to presentation of annual reports of large enterprises of reporting class C.

The Financial Statements are presented in DKK 1,000,000.

Implementation of new and amended standards and interpretations

In the financial year 2014, the following new reporting standards have been implemented:

- IFRS 10 "Consolidated Financial Statements". Clarification of the definition of control over another entity. Control requires that the following conditions are met:
  a. Power over the entity;
  b. Exposures or rights to variable returns from the entity
  c. Ability to affect the returns through power over the entity
- IFRS 11 "Joint arrangements". Joint arrangements are classified as either joint operations whereby each party recognises its share of assets, liabilities, income and expenses or as joint ventures where recognition is made under the equity method in accordance with IAS 28. Arrangements structured through independent legal entities giving the parties direct access to assets and obligations for liabilities are considered joint operations. If this is not the case, the joint arrangement is classified as a joint venture.
- IFRS 12 "Disclosure of interests in other entities". The disclosure requirement relates to the reporting entity's ownership interests in other entities, including subsidiaries, joint operations, joint ventures, associates and structured entities.
- Amendment to IAS 36 "Impairment of assets". The amendment involves roll-back of the 2013 requirement for when to disclose the recoverable amount of assets or cash-generating units and a clarification of the disclosures to be made. The amendment removes the requirement for disclosing the recoverable amount for each cash-generating unit for which the carrying amount of goodwill or other intangible assets with indefinite lives is material in proportion to the total carrying amount of the entity's goodwill or other intangible assets with indefinite lives.
- IAS 32 "Financial instruments – presentation". The amendment provides further guidance as to when financial assets and liabilities should be offset. The amendment does not change the general principle for when to offset financial assets and liabilities.
- Amendment to IFRS 10, IFRS 12 and IAS 27. The amendment provides exemption from the consolidation requirement (subsidiaries) for entities defined as investment entities. Instead the investments should be recognised at fair value through profit and loss in the consolidated financial statements.
- Amendment to IAS 39 "Financial instruments: Recognition and measurement" (Novation of derivatives and continuation of hedge accounting). The amendment entails that novation of a hedge through transfer to a so called clearinghouse (CCP) is not to be considered expiry or termination of the hedge if the transfer is required by current or new legislation. The amendment is specifically directed at the EMIR regulation effective in Europe and similar regulations.
- IFRIC 21 " Levies". The interpretation includes provisions on when an entity is to recognise levies which the entity is obliged to pay to public authorities and which are treated in accordance with IAS 37, Provisions, contingent liabilities and contingent assets.

Haldor Topsoe has assessed the effect of the new IFRS standards and interpretations. Haldor Topsoe has concluded that none of the standards and interpretations effective for financial years beginning on or after 1 January 2014 are relevant to the Haldor Topsoe Group or of material importance to the Financial Statements of the Haldor Topsoe Group.

Adopted IFRS standards and interpretations not yet effective

The following amended IFRS standards and interpretations which may be relevant to the Haldor Topsoe Group, have been adopted by the IASB and the EU. The standards become effective at a later date and, there-fore, they will not be implemented until the Annual Reports for 2015 and 2016.

- Amendment to IAS 19, "Staff benefits". The amendment establishes that employee benefits should be treated as a reduction of the service costs for the period if the employees pay a fixed percentage of their salaries independent of seniority and salary level.
- Annual improvements 2010–2012. Clarifications and minor revisions of IFRS 2, IFRS 3, IFRS 8, IFRS 13, IAS 1, IAS 7, IAS 12, IAS 16, IAS 24 and IAS 36.
- Annual improvements 2011–2013. Clarifications and minor revisions of IAS 1, IFRS 1, IFRS 13 and IAS 40.

Haldor Topsoe has assessed the effect of the new IFRS standards and interpretations. Haldor Topsoe has concluded that all standards and interpretations that became effective for financial years beginning on or after 1 January 2015 are either irrelevant to the Haldor Topsoe Group or are not expected to have any material impact on the Financial Statements of the Haldor Topsoe Group.

IASB has issued the following amendments to standards and new interpretations which might be relevant to Haldor Topsoe but which have not yet been adopted by the EU:

- IFRS 9 "Financial instruments". New standard on financial instruments which replaces IAS 39. The standard introduces new requirements for the classification of financial instruments and new re-quirements for hedge accounting. Finally, a new expected loss impairment model is introduced.
- IFRS 11, "Joint arrangements". Clarification of the accounting treatment of a joint operator's acquisition of a share in a joint arrangement which constitutes an activity.
- IFRS 14 "Regulatory deferral accounts". New common standard on regulatory assets (over-/understated) upon transition to IFRS.

Notes to the consolidated statements

Note 1
Accounting policies (continued)

- IFRS 15 "Revenue from contracts with customers". New standard on recognition of revenue which may affect the recognition of revenue in a number of areas, including:
  - The timing of the revenue recognition;
  - Recognition of variable consideration;
  - Allocation of revenue from composite contracts;
  - Recognition of revenue from licence rights;
  - Contract acquisition costs;
  - Additional disclosure requirements.

  The effect of the standard on the Annual Report of Haldor Topsoe is being considered.
- Amendment to IAS 1, including requirements for subtotals in the income statement and additional requirements for Management's assessment of materiality and the presentation order of notes in the financial statements.
- IAS 16 "Property, plant and equipment" and IAS 38 "Intangible assets". Depreciation and amortisation of property, plant and equipment and intangible assets cannot be based on revenue generated by the assets.
- IAS 27 "Consolidated and separate financial statements". Parent entities may apply the equity method when recognising investments in subsidiaries, associates and joint ventures.
- Clarifications and minor revisions of IFRS 10, IFRS 12 and IAS 28. It is clarified, among other things, that intermediate parent entities are not to prepare consolidated financial statements if it is itself a subsidiary of an investment entity which prepares consolidated financial statements.
- Amendments to IFRS 10 and IAS 28 "Sales or contributions of assets between an investor and its associate/joint venture". Full gain or loss resulting from the sale/contribution of an entity as defined by IFRS 3 should be recognised. If the transaction does not involve a business, a proportionate share of the profit may be eliminated.
- Annual improvements 2012-2014. Clarifications and minor revisions of IFRS 5, IFRS 7, IAS 19 and IAS 34.

Haldor Topsoe expects that these standards and interpretations will be implemented when they become effective.

Haldor Topsoe has thoroughly considered the impact of the IFRS standards, amended standards and IFRIC interpretations not yet effective, and it is estimated that these standards and interpretations are deemed to exert no material impact on the Consolidated Financial Statements in the coming years.

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 available-for-sale.
- 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 Annual Report comprises 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.

The Annual Reports included in the Consolidated Financial Statements have been presented in accordance with the Group's accounting policies. The Consolidated Financial Statements have been prepared based on the Annual Reports of the Parent Company and group enterprises by combining items of a uniform nature.

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.

Functional currency 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 which is the functional currency and presentation currency of the Parent Company.

Translation policies
Transactions in foreign currencies are translated to the functional currency at the exchange rates at the dates of transaction. Foreign currency monetary items are translated to the functional currency at the exchange rates at the balance sheet date.
Financial statements of group enterprises with another functional currency than Danish kroner are translated to Danish kroner using the exchange rates of the balance sheet date for items of the balance sheet and average exchange rates for statement of profit and loss 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 hedge of future cash flows which are recognized in equity under reserve for value adjustment of hedging instruments. In addition, the following currency translation differences are recognized, translated into the exchange rates of the balance sheet date, directly in equity under the foreign currency translation reserve:

- Translation of group enterprises' net assets at the beginning of the financial year.
- Translation of group enterprises' statements of profit and loss from average exchange rates to the exchange rate at the balance sheet date.
- Translation of long-term intercompany balances that are considered an addition to the net investment in group enterprises.

Notes to the consolidated statements

Note 1
Accounting policies (continued)

Derivative financial instruments
Derivative financial instruments are initially recognized in the balance sheet at cost 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 directly in equity. Amounts recognized in equity are transferred to the statement of profit and loss in the period when the hedged item affects the statement of profit and loss.

Changes in the fair values of derivative financial instruments that do not qualify as hedges are recognized in the statement profit and loss.

The fair values of derivative financial instruments are determined based on prices obtained from stock exchanges or other reliable data sources.

Statement of profit and loss

Revenue
Revenue from sale of finished goods is recognized in the statement of profit and loss when delivery and transfer of risk have been made before year end and when the income can be measured reliably and is expected to be received. Revenue is recognized exclusive of VAT and net of discounts relating to sales.

Contract work in progress is recognized at the rate 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 and expenses of a secondary nature to the Group's core activities, including government grants provided for research projects.

Raw materials and consumables used
Expenses for raw materials and consumables comprise the 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.

Staff expenses
Staff expenses comprise wages and salaries as well as other employee related expenses.

Amortization, depreciation and impairment losses
Amortization, depreciation and impairment losses comprise amortization, depreciation and impairment of intangible assets and property, plant and equipment.

Government grants
Government grants received for research and development costs are recognized in "other operating income" as the projects are completed. Grants received for investment in property, plant and equipment are recognized systematically over the useful life of the asset in the item "other operating income".

Leases
Rental expenses are recognized in the statement of profit and loss on a straight-line basis over the lease term. The liability related to non-cancellable leases is disclosed in the notes.

Financial income and expenses
Financial income and expenses comprise interest, dividends and realized and unrealized foreign currency translation adjustments.

Tax
Tax consists of current tax for the year, deferred tax as well as any adjustments to prior years. The tax attributable to the profit for the year is recognized in the statement of profit and loss, whereas the tax attributable to equity transactions is recognized directly in equity.

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

The key figures and financial ratios have been calculated as follows

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

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

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

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

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

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

Notes to the consolidated statements

Note 1
Accounting policies (continued)

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 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 statement of profit and loss as incurred.

Other intangible assets
Patents are measured at cost less accumulated amortization and impairment losses. 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 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 statement of profit and loss under other operating income and expenses.

Property, plant and equipment

Property, plant and equipment are measured at cost with addition of revaluations and less accumulated depreciation and impairment losses. Property, plant and equipment in progress are measured at cost.

Cost comprises the cost of acquisition and expenses directly related to the acquisition up until the time when 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. Interest expenses related to construction of major property, plant and equipment are recognized in cost over the period of construction.

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.

Revaluations which primarily concern the properties in Frederikssund, Ravnholm and Houston are performed on the basis of Management's estimate of fair value that is based on an independent valuation. Revaluations less deferred taxes are transferred to the revaluation reserve under equity.

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 statement of profit and loss under other operating income and expenses.

Other securities and investments

Investments are measured at fair value at the balance sheet date.

Unrealized fair value adjustments are recognized directly in equity under the reserve for value adjustment of available-for-sale financial assets. On realization, value adjustments are transferred from equity to the statement of profit and loss. Impairment losses are recognized in the statement of profit and loss.

Securities in the form of loans are measured in the balance sheet at the lower of amortized cost and net realizable value, which corresponds to nominal value less write-down for bad and doubtful debts.

Inventories

Inventories are measured at the lower of cost under the FIFO method and net realizable value. The net realizable value of inventories is calculated as the total of future sales revenue expected to be generated in the process of normal operations and determined by allowing for marketability, obsolescence and development in expected sales sum less selling expenses.

The cost of goods for resale, raw materials and consumables equals landed costs. The cost of finished goods and work in progress comprises the cost of raw materials, consumables and direct labor with addition of indirect production costs. Indirect production costs comprise the cost of indirect materials and labor, maintenance and depreciation of the machinery, factory buildings and equipment used in the manufacturing process as well as costs of factory administration and management. Any borrowing costs relating to the manufacturing period are not recognized.

Notes to the consolidated statements

Note 1
Accounting policies (continued)

Receivables
Receivables are measured in the balance sheet at the lower of amortized cost and net realizable value, which corresponds to nominal value less provisions for bad debts. Provisions for bad debts are determined on the basis of an individual assessment of each receivable.

Contract work in progress
Contract work in progress is measured at the selling price of the work performed calculated on the basis of the stage of completion. The stage of completion is measured by the proportion that the contract expenses incurred to date bear to the estimated total contract expenses. Where it is probable that total contract expenses will exceed total revenues from a contract, the expected loss is recognized as an expense in the statement of profit and loss.

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 short-term liabilities.

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

Prepayments
Prepayments comprise prepaid expenses concerning the subsequent financial year. They typically include rent, insurance premiums, subscriptions and interest.

Cash
Cash comprises cash in hand and bank deposits.

Share capital
The share capital constitutes the nominal value of the enterprise's share capital.

Reserves
The revaluation reserve includes reserve for revaluation of land and buildings.

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

Unpaid share capital reserve comprises the deviation between the amount the share capital has been increased and the amount paid.

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 value adjustment of financial assets available-for-sale comprises the accumulated net change in the fair value of financial assets classified as financial assets available-for-sale. The reserve is dissolved as the financial assets in question are sold.

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

Pension obligations and similar obligations
Costs of defined contribution plans are recognized in the statement of profit and loss 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 equity. Plan assets are only recognized to the extent that the Group is able to obtain future economic benefits by way of reimbursement from the plan or reduction of future contributions.

Costs related to other long-term 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 used. Deferred tax is measured on the basis of the tax rules and tax rates expected to be in force when temporary differences are reversed. Any changes in deferred tax due to changes to tax rates are recognized in the statement of profit and loss with the share attributable to the results for the year and directly in equity with the share attributable to entries to 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 economic benefits must be given up to settle the obligation. Provisions are measured at Management's estimate of the discounted amount expected required to repay the obligation.

Financial debts
Loans such as bonds, mortgage loans and loans from credit institutions which are expected held to maturity 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 statement of profit and loss over the loan period. Other debts are measured at amortized cost, substantially 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.

Notes to the consolidated statements

Note 1
Accounting policies (continued)

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.

Cash flows from operating activities are calculated as the net profit for the year adjusted for items with no cash flow effect, paid net financials, paid corporation taxes and changes in working capital.

Cash flows from investing activities comprise payments in connection with acquisition and divestment of enterprises and acquisition and disposal of property, plant and equipment as well as intangible assets.

Cash flows from financing activities comprise cash flows from the raising and repayment of loans, increase of share capital and payment of dividends.

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 Danish Society of Financial Analysts' "Recommendations and Financial Ratios 2010".

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 on 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.

Properties
The Group's properties 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.

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.

Inventories and production costs
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 as well as maintenance and depreciation of machinery, factories and equipment used in the production process, in addition to administrative and management expenses related to the factories.

Standard cost
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.

Technology revenue
In Management's opinion, the Group's sale of technology is to a high degree individually adjusted, and contract work in progress is consequently measured at the selling price of the performed work 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 is to a high degree based on historical experience.

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 statements

Note 2
Revenue

The Group's activities are in the business 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 Group's revenue can be specified as follows:

DKK million	**2014**	**2013**
Sale of products	4,964	4,815
Sale of services	721	533
Total revenue	**5,685**	**5,348**

Of the total revenue 25% (2013: 22%) derives from North America and 75% (2013: 78%) from the rest of the world.

Government grants for research and development amounting to DKK 49 million (2013: DKK 94 million) have been recognized in the statement of profit and loss.

Note 3
Staff expenses

DKK million	**2014**	**2013**
Wages and salaries	1,348	1,291
Pensions – contribution plan	140	131
Pensions – defined benefit	9	10
Other social security expenses	143	128
Total	**1,640**	**1,560**
Capitalization of work performed on property, plant and equipment	-27	-28
Total staff expenses	**1,613**	**1,532**
Executive Management salary	9	13
Executive Management pension	1	2
Board members fee	4	2
Total remuneration to Executive Management and Board members	**14**	**17**
Average number of employees	2,694	2,430

Note 4
Depreciation, amortization and impairment losses for property, plant and equipment as well as intangible assets

DKK million	**2014**	**2013**
Patents	21	9
Software	15	9
Land and buildings	112	25
Plant and machinery	113	85
Other fixtures and equipment	105	64
Assets in progress	0	-17
Total depreciation, amortization and impairment losses	**366**	**175**

Impairment cost of DKK 123 million relating to the closure of Topsoe Fuel Cell A/S is included in the above figures.

Notes to the consolidated statements

Note 5
Financial income

DKK million	2014	2013
Income from other investments	54	60
Interest received from the parent company	18	15
Interest income	1	4
Gains on derivative financial instruments (currency)	4	5
Foreign currency translation adjustment	45	21
Other financial income	2	1
Total financial income	**124**	**106**

Note 6
Financial expenses

DKK million	2014	2013
Interest expenses	59	59
Loss on derivative financial instruments (interest)	9	11
Loss on derivative financial instruments (currency)	11	2
Foreign currency translation adjustment	27	48
Other financial expenses	4	7
Total financial expenses	**110**	**127**

Note 7
Tax

DKK million	2014	2013
Current tax for the year	101	61
Change in deferred tax for the year	63	105
Change in corporate tax rate	-30	-13
Adjustments to prior years	3	-26
Total tax	**137**	**127**

%	2014	2013
Danish corporation tax rate	24.5	25.0
Non-deductible expenses	0.2	0
Income not subject to tax	-0.5	-1.7
Differences in foreign tax rates	4.3	1.7
Adjustments relating to prior years	0.6	-3.9
Change in corporate tax rate	-5.5	-1.9
Other adjustments	0.2	-0.6
Effective tax rate	**23.8**	**18.6**

Notes to the consolidated statements

Note 8
Intangible assets

DKK million	Patents	Software	Intangible assets in progress
Cost at January 1, 2014	110	129	4
Additions for the year	14	5	9
Disposals for the year	-27	0	0
Transfers for the year	0	5	-5
Cost at December 31, 2014	**97**	**139**	**8**
Amortization and impairment losses at January 1, 2014	66	92	0
Amortization for the year	9	14	0
Impairment losses for the year	12	1	0
Reversal of amortization and impairment losses on sold assets	-25	0	0
Amortization and impairment losses at December 31, 2014	**62**	**107**	**0**
Carrying amount at December 31, 2014	**35**	**32**	**8**
Research and development costs expensed in 2014			605

DKK million	Patents	Software	Intangible assets in progress
Cost at January 1, 2013	96	91	12
Additions for the year	14	24	6
Transfers for the year	0	14	-14
Cost at December 31, 2013	**110**	**129**	**4**
Amortization and impairment losses at January 1, 2013	57	83	0
Amortization for the year	9	9	0
Amortization and impairment losses at December 31, 2013	**66**	**92**	**0**
Carrying amount at December 31, 2013	**44**	**37**	**4**
Research and development costs expensed in 2013			607

Notes to the consolidated statements

Note 9
Property, plant and equipment

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment in progress
Cost at January 1, 2014	938	2,178	726	715
Foreign currency translation adjustment	16	80	4	21
Additions for the year	6	116	63	415
Disposals for the year	-29	-143	-34	0
Transfers for the year	60	526	108	-694
Cost at December 31, 2014	**991**	**2,757**	**867**	**457**
Revaluation at January 1, 2014	310	8	0	0
Foreign currency translation adjustment	15	0	0	0
Revaluation at December 31, 2014	**325**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2014	510	1,775	523	0
Foreign currency translation adjustment	13	76	4	0
Depreciation for the year	35	111	75	0
Impairment losses for the year	77	2	30	0
Reversal of depreciation on sold and scrapped assets	-24	-140	-27	0
Depreciation and impairment losses at December 31, 2014	**611**	**1,824**	**605**	**0**
Carrying amount at December 31, 2014	**705**	**941**	**262**	**457**
Carrying amount at December 31, 2014 under the depreciated cost model	523	941	262	457
Interest expenses capitalized in 2014				0

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

Notes to the consolidated statements

Note 9
Property, plant and equipment (continued)

DKK million	**Level 1**	**Level 2**	**Level 3**
Office buildings in Denmark	0	0	286
Production plants in Denmark and US	0	0	354
Excess land in US	0	65	0
Distribution of assets stated at fair value at December 31, 2014	**0**	**65**	**640**

DKK million	**Level 1**	**Level 2**	**Level 3**
Office buildings in Denmark	0	0	251
Production plants in Denmark and US	0	0	429
Excess land in US	0	58	0
Distribution of assets stated at fair value at December 31, 2013	**0**	**58**	**680**

Level 1: Quoted prices (unadjusted) in an active market for the identical assets.
Level 2: Inputs other than quoted prices included within level 1 that are observable for the asset, either directly (that is, as prices) or indirectly (that is, derived from prices).
Level 3: Input for assets that are not based on observable market data (that is, unobservable inputs).

There has been no transfers between level 1 and 2 during the year.

Fair value of office buildings in Denmark have been derived using a market approch primarily based on rental per sq.m. for comparable buildings and an interest rate. The rental per sq.m. is set at DKK 400-850 depending on the use. Fair value of production plants have been derived using a cost approach, which reflects the cost of constructing simular buildings at an equivalent age and use. Excess land in US are valuated 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 105 thousands.

The current use of the 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	**2014**	**2013**
Fair value of level 3 assets at January 1	680	687
Additions	65	24
Disposals	-4	0
Included in Statement of profit and loss as depreciation	-112	-25
Foreign currency translation adjustment	11	-6
Fair value of level 3 assets at December 31	**640**	**680**

Notes to the consolidated statements

Note 9
Property, plant and equipment (continued)

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment in progress
Cost at January 1, 2013	919	2,153	615	269
Foreign currency translation adjustment	-5	-28	-3	-1
Additions for the year	22	14	53	575
Disposals for the year	0	-3	-23	0
Transfers for the year	2	42	84	-128
Cost at December 31, 2013	**938**	**2,178**	**726**	**715**
Revaluation at January 1, 2013	315	8	0	0
Foreign currency translation adjustment	-5	0	0	0
Revaluation at December 31, 2013	**310**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2013	489	1,719	485	17
Foreign currency translation adjustment	-4	-26	-3	0
Reversal of impairment losses	0	0	0	-17
Depreciation for the year	25	82	64	0
Impairment losses for the year	0	3	0	0
Reversal of depreciation on sold and scrapped assets	0	-3	-23	0
Depreciation and impairment losses at December 31, 2013	**510**	**1,775**	**523**	**0**
Carrying amount at December 31, 2013	**738**	**411**	**203**	**715**
Carrying amount at December 31, 2013 under the depreciated cost model	461	411	203	715
Interest expenses capitalized in 2013				0

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

Notes to the consolidated statements

Note 10
Investments

DKK million	Other securities and investments	Other receivables
Cost at January 1, 2014	123	55
Foreign currency translation adjustment	0	2
Additions for the year	9	7
Disposals for the year	0	-5
Cost at December 31, 2014	**132**	**59**
Value adjustment at January 1, 2014	302	-17
Value adjustments for the year	-20	0
Value adjustment at December 31, 2014	**282**	**-17**
Carrying amount at December 31, 2014	**414**	**42**

DKK million	Other securities and investments	Other receivables
Cost at January 1, 2013	123	43
Foreign currency translation adjustment	0	-1
Additions for the year	0	16
Disposals for the year	0	-3
Cost at December 31, 2013	**123**	**55**
Value adjustment at January 1, 2013	334	-17
Value adjustments for the year	-32	0
Value adjustment at December 31, 2013	**302**	**-17**
Carrying amount at December 31, 2013	**425**	**38**

Karnaphuli Fertilizer Limited, Bangladesh (KAFCO)
The Group has a shareholding in KAFCO of nominally BDT 692 million, which equals 15.01% of the shares in KAFCO. The shares are measured at an estimated market 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 determined at 12% after tax. The growth rate in the terminal period has by Management been estimated at 0%. The discount rate is slightly higher than in 2013 and the growth rate corresponds to the 2013 rate. Based on these criteria the KAFCO shares have been written down by DKK 25 million.

Chambal Fertilizer and Chemical Ltd., India
The Group has an investment in Chambal Fertilizer and Chemicals Ltd., India, corresponding to 0.5% of the share capital. The investment is measured at fair value based on listed market value.

Fatima Fertilizer Co. Ltd., Pakistan
The Group has an investment in Fatima Fertilizer Co. Ltd., Pakistan, corresponding to 0,05% of the share capital. The investment is measured at fair value based on listed market value.

Faradion Ltd., United Kingdom
The Group has an investment in Faradion Ltd., England, corresponding to 19,07% of the share capital. The investment is measured at fair value based on market value.

Notes to the consolidated statements

Note 11
Inventories

DKK million	2014	2013
Raw materials and consumables	294	253
Work in progress	140	130
Finished goods	721	812
Inventories at December 31	**1,155**	**1,195**
Cost of sales for the year	2,386	2,112
Impairment losses for the year	92	68
Reversed impairment losses for the year	-48	-42

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

Note 12
Trade receivables

DKK million	2014	2013
Trade receivables, gross	**878**	**747**
Provision for bad debts at January 1	-13	-21
Provision for bad debts for the year	0	-1
Reversal of bad debts, prior years	2	9
Provision for bad debts at December 31	**-11**	**-13**
Trade receivables at December 31	**867**	**734**
Realized losses for the year	3	0
Of this, due after more than 1 year	0	0

Receivables, gross due at December 31 have the following aging in %	2014	2013
1-90 days	26	19
91-180 days	3	0
181+ days	5	4

Notes to the consolidated statements

Note 13
Contract work in progress

DKK million	**2014**	**2013**
Selling price of work performed at the balance sheet date	5,157	5,741
Payments received on account	-5,690	-6,264
Contract work in progress at December 31	**-533**	**-523**
Contract work in progress recognized in assets	127	170
Contract work in progress recognized in liabilities and equity	-660	-693
Contract work in progress at December 31	**-533**	**-523**

Note 14
Receivables from the parent company

DKK million	**2014**	**2013**
Deposit with the parent company	467	550
Unpaid share capital	241	241
Other receivables	42	80
Receivables from the parent company at December 31	**750**	**871**

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

Note 15
Other receivables

DKK million	**2014**	**2013**
VAT and tax receivable	93	88
Fair value of derivative financial instruments	1	5
Receivable dividend	26	0
Government grants	8	9
Other receivables	39	25
Other receivables at December 31	**167**	**127**
Of this, due after more than 1 year	0	0

Note 16
Share capital

Number of shares	**2014**	**2013**
Shares of a nominal value of DKK 376,000,000	**376,000**	**376,000**

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

There has been no change in the share capital in 2014.

The following shareholder is recorded in the Parent Company's register of shareholders as holding at least 5% of the votes or at least 5% of the share capital: Haldor Topsøe Holding A/S, Lyngby, Denmark

Notes to the consolidated statements

Note 17
Reserves

DKK million	Revaluation value	Foreign currency translation reserve	Unpaid share capital reserve	Reserve for value adjustment of hedging instruments	Reserve for value adjustment of available-for-sale financial assets	Total
Reserves at January 1, 2014	222	-41	241	-6	303	719
Foreign currency translation adjustment	0	88	0	0	0	88
Derivative financial instruments used for hedging of future cash flows	0	0	0	-25	0	-25
Realized derivative financial instruments transferred to the statement of profit and loss	0	0	0	16	0	16
Fair value adjustment of financial assets available-for-sale	0	0	0	0	-20	-20
Tax on this	0	0	0	1	-1	0
Reserves attributed to the parent company at December 31, 2014	**222**	**47**	**241**	**-14**	**282**	**778**
Non-controlling interest	98	0	0	0	0	98
Total reserves at December 31, 2014	**320**	**47**	**241**	**-14**	**282**	**876**

DKK million	Revaluation value	Foreign currency translation reserve	Unpaid share capital reserve	Reserve for value adjustment of hedging instruments	Reserve for value adjustment of available-for-sale financial assets	Total
Reserves at January 1, 2013	222	-11	0	-17	333	527
Foreign currency translation adjustment	0	-30	0	0	0	-30
Derivative financial instruments used for hedging of future cash flows	0	0	0	7	0	7
Realized derivative financial instruments transferred to the statement of profit and loss	0	0	0	8	0	8
Fair value adjustment of financial assets available-for-sale	0	0	0	0	-32	-32
Reserve for unpaid share capital	0	0	241	0	0	241
Tax on this	0	0	0	-4	2	-2
Reserves at December 31, 2013	**222**	**-41**	**241**	**-6**	**303**	**719**

Note 18
Dividend

Proposed dividend constitutes DKK 200 million (2013: DKK 250 million) corresponding to DKK 531.91 (2013: DKK 664.89) per share.

Interim dividend of DKK 50 million regarding 2014 and dividend of 250 million regarding 2013 has been paid during the year (2013: DKK 321 million) corresponding to DKK 132.98 (2013: DKK 853.72) per share.

Dividend policy

The Haldor Topsoe Group has since 2007 financed the operations of Haldor Topsøe Holding A/S through dividend payments in order for this company to operate. The liquidity effect of the expected future dividend payments has been incorporated in the cash flow forecasts of Haldor Topsoe.

Notes to the consolidated statements

Note 19

Pension obligations and similar obligations

The Group has entered into pension plans with a considerable number of the Group's 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 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 relate to certain employees in the Group's American 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 are performed annually.

DKK million	**2014**	**2013**
Pension costs	7	7
Interest expenses	11	8
Interest income	-9	-5
Total pension recognized in staff expenses	**9**	**10**

Applied actuarial assumptions in %	**2014**	**2013**
Discount rate	3.50	4.50
Future pay increases	4.00	4.00

A change in the discount rate of -0.5% or + 0.5% respectively would impact the defined benefit obligation by +4% or -4% respectively.
A change in the future pay increase of -0.5% or +0,5 respectively would impact the defined benefit obligation by -2% or +2% respectively.

The weighted average duration of the defined benefit obligation is 10 years.

%	**2014**	**2013**
US	42	37
International	22	29
Global	3	3
Shares	**67**	**69**
US investment grade	11	9
High yield	12	9
Inflation protected	1	2
Other	1	3
Bonds	**25**	**23**
Real estate	3	4
Other	5	4
Distribution of assets to cover the obligation at December 31	**100**	**100**

Notes to the consolidated statements

Note 19
Pension obligations and similar obligations (continued)

DKK million	2014	2013
Present value of pension obligations	293	234
Fair value of pension plan assets	-222	-191
Net obligation at December 31	**71**	**43**
Present value of pension obligations at January 1	234	247
Foreign currency translation adjustment	31	-10
Pension costs	7	7
Interest expenses	11	8
Actuarial gains and losses, demographic assumption	11	-2
Actuarial gains and losses, financial assumption	9	-9
Pension paid	-10	-7
Present value of pension obligations at December 31	**293**	**234**
Fair value of pension assets at January 1	191	169
Foreign currency translation adjustment	25	-7
Interest on pension assets	9	6
Return on plan assets excl. amounts incl. in interest	-1	19
Paid by the company	8	11
Pension paid	-10	-7
Fair value of pension plan assets at December 31	**222**	**191**
Expected pension payments by the Group in 2014		17

Notes to the consolidated statements

Note 20
Deferred tax

DKK million	**2014**	**2013**
Deferred tax at January 1	409	347
Tax on equity items	-6	15
Tax for the year	59	90
Tax previous years	-30	-43
Deferred tax at December 31	**432**	**409**
Intangible assets and property, plant and equipment	145	97
Inventories	-7	8
Work in progress	336	324
Provisions	-59	-26
Other	17	6
Deferred tax at December 31	**432**	**409**
Of this, due after more than 1 year	298	409

Note 21
Provisions

DKK million	**2014**	**2013**
Provisions at January 1	208	307
Reversal in the year	-22	-99
Provisions for the year	10	0
Provisions at December 31	**196**	**208**
Warranty provision for catalysts and technology projects	191	201
Waste disposal	1	3
Other provisions	4	4
Provisions at December 31	**196**	**208**
Of this, due after more than 1 year	196	208

Notes to the consolidated statements

Note 22
Long-term liabilities

DKK million	2014	2013
Bonds		
After 5 years	500	499
Between 1 and 5 years	496	513
More than 1 year	**996**	**1,012**
Less than 1 year	17	4
Bonds at December 31	**1,013**	**1,016**
Mortgage debt		
After 5 years	40	51
Between 1 and 5 years	41	41
More than 1 year	**81**	**92**
Less than 1 year	10	10
Mortgage debt at December 31	**91**	**102**
Credit institutions		
After 5 years	167	125
Between 1 and 5 years	450	499
More than 1 year	**617**	**624**
Less than 1 year	215	186
Credit institutions at December 31	**832**	**810**
Deferred income		
After 5 years	7	0
Between 1 and 5 years	1	0
More than 1 year	**8**	**0**
Less than 1 year	3	6
Deferred income at December 31	**11**	**6**

Notes to the consolidated statements

Note 23
Other payables

DKK million	**2014**	**2013**
Staff related items	239	283
Fair value of derivative financial instruments	20	21
Tax related items	7	9
Other payables	142	154
Other payables at December 31	**408**	**467**
Less than 1 year	401	459
More than 1 year	7	8
Other payables at December 31	**408**	**467**

Note 24
Prepayments from customers

DKK million	**2014**	**2013**
Prepayments related to licence agreements	15	63
Prepayments related to sale of goods	422	233
Prepayments from customers at December 31	**437**	**296**

Note 25
Assets provided as security

For the Group, non-current assets (land and buildings) with a carrying amount of DKK 405 million (2013: DKK 390 million) have been provided as security. The remaining balance of the loans secured by non-current assets as of December 31, 2014 was DKK 91 million for the Group (2013: DKK 101 million). Non-current assets are provided by means of real estate mortgage deeds and owners' mortgage deeds. The nomial value of these is DKK 127 million (2013: DKK 127 million) for the Group.

Furthermore, all assets of Haldor Topsoe Inc. have been provided as security for loan amounting to DKK 195 million (2013: DKK 173 million).

Assets are provided as security for mortgage debt and 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 we may have towards such parties.

Note 26
Guarantees

The outstanding balance as of December 31, 2014 for guarantees given by banks and credit insurance institutions on the Group's behalf for contract work, etc. amounted to DKK 620 million (2013: DKK 712 million). Other guarantees given by banks on the Group's behalf amounted to DKK 242 million (2013: 389 million) being guarantees for long-term loans from the European Investment Bank. Total bank and insurance guarantees given on the Group's behalf amounted to DKK 862 million (2013: DKK 1,101 million).

The outstanding balance as of December 31, 2014 for bank guarantees received by the Group from suppliers for contract work etc. amounted to DKK 98 million (2013: DKK 99 million).

The outstanding balance as of December 31, 2014 for letters of credit issued in favor of the Group as security for payment under various supply contracts amounted to DKK 468 million (2013: DKK 472 million).

DKK million	**2014**	**2013**
Less than 1 year	579	535
Between 1 and 5 years	253	550
After 5 years	30	16
Guarantees at December 31	**862**	**1,101**

Notes to the consolidated statements

Note 27
Contractual obligations

DKK million	2014	2013
Less than 1 year	90	82
Between 1 and 5 years	268	251
After 5 years	501	532
Contractual obligations at December 31	**859**	**865**
Payments for the year recognized as operating lease expenses	77	85

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

Note 28
Contingent liabilities

The Group's property in Frederikssund, Denmark, is found to be contaminated. The Group has been ordered to prepare a proposal for remediation of the contamination. Management assesses that the remediation costs will not be significant.

Note 29
Related parties

Control	**Basis**
Haldor Topsøe Holding A/S, Lyngby, Denmark	Shareholder

DKK million	2014	2013
Interest received from the parent company	18	15
Receivables from the parent company at December 31	750	871

Other interests

Oluf Engell, Skodsborg, Denmark	Member of the Board, Lawyer

Significant influence

Executive Management and Board of Directors

Other interests and the estate "boet efter Haldor Topsøe"

DKK million	2014	2013
Legal fees	1	4
Property rent	9	9
Outstanding at December 31	0	0

Intercompany transactions have been eliminated in the Consolidated Financial Statements.

Notes to the consolidated statements

Note 30
Derivative financial instruments

DKK million	Contract amount 2014	Fair value 2014	Contract amount 2013	Fair value 2013
USD forward exchange contract, matures in 2015	86	-10	0	0
EUR forward exchange contract, matures in 2015	24	0	46	0
EUR forward exchange contract, matures in 2014	0	0	185	1
USD forward exchange contract, matures in 2014	0	0	162	4
Forward exchange contracts at December 31	**110**	**-10**	**393**	**5**

The Group uses forward exchange contracts to hedge against changes in exchange rates. The fair value of concluded forward exchange contracts is recognized in the balance sheet in equity. The Group thus applies the rules on hedge accounting.

DKK million	Contract amount 2014	Fair value 2014	Contract amount 2013	Fair value 2013
EUR interest rate swap, matures on December 31, 2021	54	-8	61	-8
USD interest rate swap, matures on March 31, 2015	149	-1	173	-7
Interest rate swaps at December 31	**203**	**-9**	**234**	**-15**

The Group uses interest rate swaps to hedge changes in interest rate levels and to thus reduce the interest rate risk. The fair value of the swaps is recognized in equity in the balance sheet. The Group thus applies the rules on hedge accounting.

DKK million	Contract amount 2014	Fair value 2014	Contract amount 2013	Fair value 2013
Aggregate amount of commodity swaps within metals, matures in 2015	14	1	0	0
Aggregate amount of commodity swaps within metals, matures in 2014	0	0	16	-6
Commodity swaps at December 31	**14**	**1**	**16**	**-6**

The Group uses commodity swaps to hedge against fluctuations in raw material prices of specific production contracts. The fair value of the swaps is recognized directly in the statement of profit and loss.

The cost of raw materials is a significant cost component in our products, and costs can fluctuate considerably. We seek to pass any increased raw material cost on to our customers through escalation clauses in contracts. In addition, we use financial hedging to a certain extent.

Notes to the consolidated statements

Note 31
Financial assets and liabilities

DKK million	2014	2013
Other securities and investments	414	425
Trade receivables	867	734
Other financial receivables	209	165
Cash	453	384
Financial assets at December 31	**1,943**	**1,708**
Bonds, mortgage debt and debt to credit institutions	1,936	1,928
Trade payables	350	418
Other financial liabilities	408	467
Financial liabilities at December 31	**2,694**	**2,813**
Assets available-for-sale	414	425
Financial assets measured at amortized cost	1,528	1,278
Derivative financial instruments	1	5
Classification of financial assets at December 31	**1,943**	**1,708**
Financial liabilities measured at amortized cost	2,674	2,792
Derivative financial instruments	20	21
Classification of financial liabilities at December 31	**2,694**	**2,813**
Bonds, mortgage debt and debt to credit institutions:		
Less than 1 year	242	200
Between 1 and 5 years	987	1,053
After 5 years	707	675
Trade payables:		
Less than 1 year	350	418
Derivative financial instruments:		
Less than 1 year	13	13
Between 1 and 5 years	5	5
After 5 years	2	3
Other financial liabilities:		
Less than 1 year	388	446
Maturity analysis of financial liabilities at December 31	**2,694**	**2,813**

Notes to the consolidated statements

Note 31
Financial assets and liabilities (continued)

DKK million	**Level 1**	**Level 2**	**Level 3**
Other securities and investments	23	0	391
Derivative financial instruments	0	1	0
Distribution of assets stated at fair value at December 31, 2014	**23**	**1**	**391**
Derivative financial instruments	0	20	0
Distribution of liabilities stated at fair value at December 31, 2014	**0**	**20**	**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 10 for information on input to valuation of investments in other enterprises stated at fair value in level 3.

There have not been tranfers between level 1, 2 and 3 during the financial year 2014.

DKK million	**2014**	**2013**
Fair value of level 3 assets at January 1	416	441
Write-down recognized in other comprehensive income	-25	-25
Transfer	0	0
Fair value of level 3 assets at December 31	**391**	**416**

Notes to the consolidated statements

Note 32
Adjustments for non-cash items

DKK million	2014	2013
Financial income	-124	-106
Financial expenses	110	127
Amortization, depreciation and impairment losses, including gains and losses from sale of assets	377	175
Tax	137	127
Other adjustments	-44	-107
Total adjustments for non-cash items	**456**	**216**

Note 33
Change in working capital

DKK million	2014	2013
Change in inventories	90	-13
Change in receivables	-160	-199
Change in contract billing	143	118
Change in suppliers, etc.	-79	-88
Total change in working capital	**-6**	**-182**

Notes to the consolidated statements

Note 34
List of group companies

Name	Registered office	Share capital (thousands)	Voting and ownership share
Haldor Topsoe, Inc.	Houston, USA	USD 5,000	100%
Topsoe Fuel Cell A/S	Lyngby, Denmark	DKK 30,000	100%
Topsoe Energy Conv. & Storage A/S	Lyngby, Denmark	DKK 5,000	100%
Haldor Topsoe India Pvt. Ltd.	New Delhi, India	INR 131,063	100%
Haldor Topsøe (Beijing) Co., Ltd	Beijing, China	CNY 9,643	100%
Haldor Topsøe Catalyst (Tianjin) Co., Ltd.	Tianjin, China	CNY 233,572	55.92%
Haldor Topsøe International A/S	Lyngby, Denmark	DKK 500	100%
ZAO Haldor Topsøe	Moscow, Russia	RUB 3,500	100%
Haldor Topsoe America Latina	Buenos Aires, Argentina	ARS 310	100%
Haldor Topsoe Sdn. Bhd.	Kuala Lumpur, Malaysia	MYR 1,000	100%
Haldor Topsoe Canada Limited	Vancouver, Canada	CAD 100	100%
Haldor Topsoe Catalisadores e Tecnologias do Brasil	Rio de Janeiro, Brazil	BRL 9,143	100%
Subcontinent Ammonia Investment Company ApS	Lyngby, Denmark	DKK 1,000	100%
Haldor Topsoe S.A.	Cape Town, South Africa	ZAR 2,000	100%
Haldor Topsoe Ohio, Inc.	Wilmington, USA	USD 0	100%

Financial statement of Haldor Topsoe A/S

Contents

Statement of profit and loss of Haldor Topsoe A/S

DKK million	Note	2014	2013
Revenue	2	**4,873**	**4,889**
Change in inventories of finished goods and intermediate products		-5	-35
Other operating income		27	10
Purchased equipment for contract work		-330	-461
Raw materials and consumables used		-1,497	-1,031
Other external expenses		-1,053	-1,343
Gross profit		**2,015**	**2,029**
Staff expenses	3	-1,208	-1,181
Depreciation, amortization and impairment losses for property, plant and equipment as well as intangible assets	4	-193	-136
EBIT		**614**	**712**
Income from investments in group enterprises	5	-57	-3
Financial income	6	72	47
Financial expenses	7	-96	-120
Profit before tax		**533**	**636**
Tax	8	-114	-113
Net profit		**419**	**523**
Proposed distribution of profit			
Proposed dividend		200	250
Net revaluation reserve under the equity method		-112	-33
Retained earnings		331	306
Total proposed distribution of profit		**419**	**523**

Balance sheet of Haldor Topsoe A/S

Assets		December 31	December 31
DKK million	**Note**	**2014**	**2013**
Patents		31	28
Software		30	35
Intangible assets in progress		6	4
Intangible assets	9	**67**	**67**
Land and buildings		530	488
Plant and machinery		727	378
Other fixtures and equipment		236	134
Property, plant and equipment in progress		244	515
Property, plant and equipment	10	**1,737**	**1,515**
Investments in group enterprises		1,295	1,034
Receivables from group enterprises		21	16
Other securities and investments		23	9
Other receivables		18	16
Investments	11	**1,357**	**1,075**
Non-current assets		**3,161**	**2,657**
Inventories	12	**773**	**770**
Trade receivables		681	566
Contract work in progress	13	123	164
Receivables from group enterprises	14	975	1,262
Other receivables		123	115
Prepayments	15	24	29
Receivables		**1,926**	**2,136**
Cash		**113**	**183**
Current assets		**2,812**	**3,089**
Assets		**5,973**	**5,746**

Balance sheet of Haldor Topsoe A/S

Liabilities and equity		December 31	December 31
DKK million	**Note**	**2014**	**2013**
Share capital	16	376	376
Revaluation reserve		155	155
Net revaluation reserve under the equity method		199	236
Reserve for unpaid share capital		241	241
Retained earnings		660	386
Proposed dividend		200	250
Equity		**1,831**	**1,644**
Deferred tax	17	420	417
Other provisions	18	183	204
Provisions		**603**	**621**
Bonds		996	1,012
Mortgage debt		81	49
Credit institutions		514	492
Other payables		7	7
Long-term liabilities	19	**1,598**	**1,560**
Bonds	19	17	4
Mortgage debt	19	10	7
Credit institutions	19	169	146
Deferred income		2	5
Prepayments from customers	20	267	251
Contract work in progress	13	656	677
Trade payables		301	326
Payables to group enterprises		66	82
Corporate taxes		107	42
Other payables	21	346	381
Short-term liabilities		**1,941**	**1,921**
Liabilities		**3,539**	**3,481**
Liabilities and equity		**5,973**	**5,746**

Consolidated statement of changes in equity

DKK million	Share capital	Revaluation reserve	Net revaluation reserve under the equity method	Reserve for unpaid share capital	Retained earnings	Proposed dividend	Total
Equity at January 1, 2014	376	155	236	241	386	250	1,644
Paid dividend	0	0	0	0	0	-250	-250
Interim dividend	0	0	0	0	-50	0	-50
Adjustments relating to separate foreign legal entities	0	0	75	0	0	0	75
Fair value adjustment of derivative financial instruments	0	0	0	0	-7	0	-7
Net profit	0	0	-112	0	331	0	219
Proposed dividend	0	0	0	0	0	200	200
Equity at December 31, 2014	**376**	**155**	**199**	**241**	**660**	**200**	**1,831**

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 Annual Report of Haldor Topsøe A/S for 2014 has been prepared in accordance with the provisions of the Danish Financial Statements Act applying to large enterprises of reporting class C.

Risk provision on technology projects amounting to DKK 139 million at December 31, 2014 (DKK 163 million at December 31, 2013) has been reclassified from "contract work in progress" under liabilities to "provisions", since the Company finds this presentation more accurate. The comparative figures have been restated accordingly. The reclassification has no impact on the Company's assets, liabilities, financial position or results.

Except for the above mentioned reclassification the applied accounting policies remain unchanged from previous years.

The applied accounting policies are similar to those of the Group except for the following matters:

Financial income and expenses

Financial income and expenses comprise interest, fair value adjustments, realized and unrealized foreign currency translation adjustments, price adjustment of securities and amortization of mortgage loans.

Other securities and investments

Other investments are recognized at market value or estimated fair value. When the value of an investment cannot be assessed with reasonable certainty, the investment is measured at cost.

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'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 has a legal or constructive obligation to cover the group enterprise's deficit.

The item "Income from investments in group enterprises" in the income statement includes the proportionate share of the profit after tax.

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.

Notes to the financial statements of Haldor Topsoe A/S

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	**2014**	**2013**
Wages and salaries	1,039	1,022
Pensions	123	111
Other social security expenses	71	73
Total	**1,233**	**1,206**
Capitalization of work performed on proterty, plant and equipment	-25	-25
Total staff expenses	**1,208**	**1,181**
Average number of employees	1,945	1,813
Executive management salary and pension	10	15
Board members fee	4	2
Total revenueration to Executive management and Board members	**14**	**17**

Note 4
Depreciation, amortization and impairment losses for property, plant and equipment as well as intangible assets

DKK million	**2014**	**2013**
Patents	4	6
Software	13	8
Land and buildings	29	17
Plant and machinery	94	77
Other fixtures and equipment	53	45
Assets in progress	0	-17
Total depreciation, amortization and impairment losses	**193**	**136**

Notes to the financial statements of Haldor Topsoe A/S

Note 5
Income from investments in group enterprises

DKK million	2014	2013
Share of profit of group enterprises, net	-55	19
Change in intercompany profit	-2	-22
Total financial income	**-57**	**-3**

Note 6
Financial income

DKK million	2014	2013
Income from other investments	1	1
Interest received from group enterprises	25	20
Interest income	0	3
Foreign currency translation adjustment	45	23
Other financial income	1	0
Total financial income	**72**	**47**

Note 7
Financial expenses

DKK million	2014	2013
Interest paid to group enterprises	0	1
Interest expenses	56	56
Foreign currency translation adjustment	36	49
Value adjustments of other investments	0	7
Other financial expenses	4	7
Total tax	**96**	**120**

Note 8
Tax

DKK million	2014	2013
Current tax for the year	105	45
Change in deferred tax for the year	36	108
Change in corporate tax rate	-30	-13
Adjustments to prior years	3	-27
Total tax	**114**	**113**

Notes to the financial statements of Haldor Topsoe A/S

Note 9
Intangible assets

DKK million	Patents	Software	Intangible assets in progress
Cost at January 1, 2014	84	123	4
Additions for the year	10	5	5
Disposals	-3	0	0
Transfers for the year	0	3	-3
Cost at December 31, 2014	**91**	**131**	**6**
Amortization and impairment losses at January 1, 2014	56	88	0
Amortization for the year	4	13	0
Amortization and impairment losses at December 31, 2014	**60**	**101**	**0**
Carrying amount at December 31, 2014	**31**	**30**	**6**

Note 10
Property, plant and equipment

DKK million	Land and buildings	Plant and machinery	Other fixtures and equipment	Property, plant and equipment in progress
Cost at January 1, 2014	657	1,558	569	515
Additions for the year	33	115	90	163
Disposals for the year	-6	-10	-1	0
Transfers for the year	41	328	65	-434
Cost at December 31, 2014	**725**	**1,991**	**723**	**244**
Revaluation at January 1, 2014	198	8	0	0
Revaluation at December 31, 2014	**198**	**8**	**0**	**0**
Depreciation and impairment losses at January 1, 2014	367	1,188	435	0
Reversal of impairment losses	-3	-10	-1	0
Impairment losses for the year	11	0	0	0
Depreciation for the year	18	94	53	0
Depreciation and impairment losses at December 31, 2014	**393**	**1,272**	**487**	**0**
Carrying amount at December 31, 2014	**530**	**727**	**236**	**244**
Carrying amount at December 31, 2014 without revaluation	370	727	236	244

Interest expenses capitalized in 2014 amounted to DKK 0 million (2013: DKK 0 million).

Notes to the financial statements of Haldor Topsoe A/S

Note 11
Investments

DKK million	Other securities and investments	Other receivables
Cost at January 1, 2014	8	33
Additions for the year	8	2
Cost at December 31, 2014	**16**	**35**
Value adjustment at January 1, 2014	1	-17
Value adjustment for the year	6	0
Value adjustment at December 31, 2014	**7**	**-17**
Carrying amount at December 31, 2014	**23**	**18**

DKK million	Investments in group enterprises	Receivables from group enterprises
Cost at January 1, 2014	754	16
Additions for the year	107	6
Disposals for the year	0	-4
Cost at December 31, 2014	**861**	**18**
Revaluations at January 1, 2014	280	0
Exchange adjustment	83	3
Dividend	-55	0
Net profit for the year	-53	0
Other adjustments	-12	0
Investments with negative equity transferred to receivables	191	0
Revaluations at December 31, 2014	**434**	**3**
Carrying amount at December 31, 2014	**1,295**	**21**

Chambal Fertilizer and Chemical Ltd., India
The Group has an investment in Chambal Fertilizer and Chemicals Ltd., India, corresponding to 0.5% of the share capital. The investment is measured at fair value based on listed market value.

Fatima Fertilizer Co. Ltd., Pakistan
The Group has an investment in Fatima Fertilizer Co. Ltd., Pakistan, corresponding to 0,05% of the share capital. The investment is measured at fair value based on listed market value.

Faradion Ltd., United Kingdom
The Group has an investment in Faradion Ltd., England, corresponding to 19,07% of the share capital. The investment is measured at fair value based on market value.

Notes to the financial statements of Haldor Topsoe A/S

Note 11
Investments (continued)

Investments in group enterprises are specified as follows:

Name	Registered office	Share capital (thousands)	Voting and ownership share
Haldor Topsoe, Inc.	Houston, USA	USD 5,000	100%
Topsoe Fuel Cell A/S	Lyngby, Denmark	DKK 30,000	100%
Topsoe Energy Conv. & Storage A/S	Lyngby, Denmark	DKK 5,000	100%
Haldor Topsoe India Pvt. Ltd.	New Delhi, India	INR 131,063	100%
Haldor Topsøe (Beijing) Co., Ltd	Beijing, China	CNY 9,643	100%
Haldor Topsøe Catalyst (Tianjin) Co., Ltd.	Tianjin, China	CNY 233,572	55.92%
Haldor Topsøe International A/S	Lyngby, Denmark	DKK 500	100%
ZAO Haldor Topsøe	Moscow, Russia	RUB 3,500	100%
Haldor Topsoe America Latina	Buenos Aires, Argentina	ARS 310	100%
Haldor Topsoe Sdn. Bhd.	Kuala Lumpur, Malaysia	MYR 1,000	100%
Haldor Topsoe Canada Limited	Vancouver, Canada	CAD 100	100%
Haldor Topsoe Catalisadores e Tecnologias do Brasil	Rio de Janeiro, Brazil	BRL 9,143	100%
Subcontinent Ammonia Investment Company ApS	Lyngby, Denmark	DKK 1,000	100%
Haldor Topsoe S.A.	Cape Town, South Africa	ZAR 2,000	100%
Haldor Topsoe Ohio, Inc.	Wilmington, USA	USD 0	100%

As per December 31, 2014 Haldor Topsoe A/S directly owns 76.01% of Haldor Topsoe America Latina and 23.99% through Haldor Topsoe International A/S.

Note 12
Inventories

DKK million	2014	2013
Raw materials and consumables	170	161
Work in progress	107	95
Finished goods	496	514
Inventories at December 31	**773**	**770**

Note 13
Contract work in progress

DKK million	2014	2013
Selling price of work performed at the balance sheet date	4,734	5,441
Payments received on account	-5,267	-5,954
Contract work in progress at December 31	**-533**	**-513**
Contract work in progress recognized in assets	123	164
Contract work in progress recognized in liabilities and equity	-656	-677
Contract work in progress at December 31	**-533**	**-513**

Notes to the financial statements of Haldor Topsoe A/S

Note 14
Receivables from group enterprises

DKK million	2014	2013
Deposit with the holding company	467	550
Other receivables	508	712
Receivables from group enterprises at December 31	**975**	**1,262**

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

Note 15
Prepayments

Prepayments mainly consist of prepaid property tax, licenses and office rent.

Note 16
Share capital

Number of shares	2014	2013
Shares of a nominal value of DKK 376,000,000	**376,000**	**376,000**

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

There has been no change in the share capital in 2014.

The following shareholder is recorded in the Parent Company's register of shareholders as holding at least 5% of the votes or at least 5% of the share capital: Haldor Topsøe Holding A/S, Lyngby, Denmark

Note 17
Deferred tax

DKK million	2014	2013
Intangible assets and property, plant and equipment	64	60
Inventories	20	24
Work in progress	336	324
Provisions	-26	-9
Other	26	18
Deferred tax at December 31	**420**	**417**
Deferred tax	420	417
Deferred tax recognized in the balance sheet at December 31	**420**	**417**

Note 18
Other provisions

DKK million	2014	2013
Warranty provision for catalysts and technology projects	182	201
Other provisions	1	3
Other provisions at December 31	**183**	**204**
Of this, due after more than 1 year	183	204

Notes to the financial statements of Haldor Topsoe A/S

Note 19
Long-term liabilities

DKK million	2014	2013
Bonds		
After 5 years	500	499
Between 1 and 5 years	496	513
More than 1 year	**996**	**1,012**
Less than 1 year	17	4
Bonds at December 31	**1,013**	**1,016**
Mortgage debt		
After 5 years	40	20
Between 1 and 5 years	41	29
More than 1 year	**81**	**49**
Less than 1 year	10	7
Mortgage debt at December 31	**91**	**56**
Credit institutions		
After 5 years	167	125
Between 1 and 5 years	347	367
More than 1 year	**514**	**492**
Less than 1 year	169	146
Credit institutions at December 31	**683**	**638**
Other payables		
After 5 years	3	3
Between 1 and 5 years	4	4
More than 1 year	**7**	**7**
Less than 1 year	1	1
Other payables at December 31	**8**	**8**

Other payables consist of derivative financial instruments.

Amortization cost included under long-term liabilities, bonds	6	6

Notes to the financial statements of Haldor Topsoe A/S

Note 20
Prepayments from customers

DKK million	2014	2013
Prepayments related to license agreements	15	63
Prepayments related to sale of goods	252	188
Prepayments from customers at December 31	**267**	**251**

Note 21
Other payables

DKK million	2014	2013
Staff related items	206	249
Fair value of derivative financial instruments	11	7
Tax related items	7	8
Other payables	122	117
Other payables at December 31	**346**	**381**

Note 22
Assets provided as security

Non-current assets (land and buildings) with a carrying amount of DKK 202 million (2013: DKK 209 million) have been provided as security. The remaining balance of the loans secured by non-current assets as of December 31, 2014 was DKK 49 million (2013: DKK 56 million). Non-current assets are provided by means of real estate mortgage deeds and owners' mortgage deeds. The nominel value of these is DKK 70 million (2013: DKK 70 million).

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

Note 23
Guarantees

The outstanding balance as of December 31, 2014 for guarantees given by banks and credit insurance institutions on the Company's behalf for contract work, etc. amounted to DKK 620 million (2013: DKK 712 million). Other guarantees given by banks on the Company's behalf amounted to DKK 242 million (2013: DKK 389 million), being guarantees for long-term loans from the European Investment Bank. Total bank/insurance guarantees given on the Company's behalf amounted to DKK 862 million (2013: DKK 1,101 million).

The Company has issued parent company guarantees of DKK 95 million (2013: DKK 95 million) for certain obligations in subsidiaries.

The outstanding balance as of December 31, 2014 for bank guarantees received by the Company from suppliers for contract work etc. amounted to DKK 98 million (2013: DKK 99 million).

The outstanding balance as of December 31, 2014 for letters of credit issued in favor of the Company as security for payment under various supply contracts amounted to DKK 468 million (2013: DKK 472 million).

Notes to the financial statements of Haldor Topsoe A/S

Note 24
Contractual obligations

DKK million	2014	2013
Less than 1 year	62	58
Between 1 and 5 years	190	207
After 5 years	495	525
Contractual obligations at December 31	**747**	**790**

Note 25
Contingent liabilities

The Company's property in Frederikssund, Denmark, is found to be contaminated. The Company has been ordered to prepare proposal for remediation of the contamination. Management assesses that the remediation costs will not be significant.

Note 26
Fee to auditors appointed at the general meeting

DKK million	2014	2013
Statutory audit fee	1	1
Tax assistance	1	2
Other assistance	1	1
Total fee to auditors appointed at the general meeting	**3**	**4**

Note 27
Related parties

Control	**Basis**
Haldor Topsøe Holding A/S, Lyngby, Denmark	Shareholder

Other interests	
Oluf Engell, Skodsborg, Denmark	Member of the Board, Lawyer

Significant influence
Executive Management and Board of Directors

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

Note 28
Consolidated financial statements

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

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

The Executive Management and Board of Directors have today considered and adopted the Annual Report 2014 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, 2014 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 2014 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 Group and the Parent Company, and 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, 2015

Executive Management

Peter Rønnest Andersen
Executive Vice President and CFO

Bjerne S. Clausen
President and CEO

Board of Directors

Henrik Topsøe
Chairman

Jeppe Christiansen
Vice Chairman

Christina Topsøe
Member

Jakob Haldor Topsøe
Member

Nils Bernstein
Member

Oluf Engell
Member

Jens Kehlet Nørskov
Member

Jørgen Huno Rasmussen
Member

Jette Søvang Christiansen
Employee representative

Aino Irene Saldo
Employee representative

Søren Toft
Employee representative

Martin Østberg
Employee representative

To the shareholder of Haldor Topsoe A/S

Report on Consolidated Financial Statements and Parent Company Financial Statements
We have audited the Consolidated Financial Statements and the Parent Company Financial Statements for the financial year January 1 to December 31, 2014 which comprise statement of profit and loss, balance sheet, statement of changes in equity and notes, including summary of significant accounting policies as well as statement of comprehensive income and cash flow statement for the Group. The Consolidated Financial Statements are prepared in accordance with International Financial Reporting Standards as adopted by the EU, and the Parent Company Financial Statements are prepared under the Danish Financial Statements Act. Moreover the Consolidated Financial Statements are prepared in accordance with additional disclosure requirements of the Danish Financial Statements Act.

Management's responsibility for the Consolidated Financial Statements and the Parent Company 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 Danish disclosure requirements and for preparing 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 Consolidated Financial Statements and Parent Company Financial Statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility
Our responsibility is to express an opinion on the Consolidated Financial Statements and the Parent Company Financial Statements based on our audit. We conducted our audit in accordance with International Standards on Auditing and additional requirements under Danish audit regulation. This requires that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the Consolidated Financial Statements and the Parent Company Financial Statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Consolidated Financial Statements and the Parent Company Financial Statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Consolidated Financial Statements and the Parent Company Financial Statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation of Consolidated Financial Statements and Parent Company Financial Statements that give a true and fair view 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 Company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by Management, as well as evaluating the overall presentation of the Consolidated Financial Statements and the Parent Company Financial Statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for an audit opinion.

The audit has not resulted in any qualification.

Opinion
In our opinion, the Consolidated Financial Statements give a true and fair view of the Group's financial position at December 31, 2014 and of the results of the Group's operations and cash flows for the financial year January 1 to December 31, 2014 in accordance with International Financial Reporting Standards as adopted by the EU and additional disclosure requirements of 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, 2014 and the results of the Parent Company's operations for the financial year January 1 to December 31, 2014 in accordance with the Danish Financial Statements Act.

Statement on Management's review
We have read Management's review (page 1–19) in accordance with the Danish Financial Statements Act. We have not performed any procedures additional to the audit of the Consolidated Financial Statements and the Parent Company Financial Statements. On this basis, in our opinion, the information provided in Management's review is consistent with the Consolidated Financial Statements and the Parent Company Financial Statements.

Copenhagen, March 26, 2015

PricewaterhouseCoopers
Statsautoriseret
Revisionspartnerselskab

Kim Füchsel
State Authorized Public Accountant

Jesper Møller Christensen
State Authorized Public Accountant

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HALDOR TOPSØE