Fossil free within one generation

VATTENFALL

The future is fossil free

At Vattenfall we exist to help our customers power their lives in ever climate smarter ways. The goal is to be free from fossil fuels within one generation.

Market trends

Sustainability and customer focus

Electrification

More decentralised energy solutions

Digitalisation

New ways of working are driving value and growth

Vattenfall is passionate about driving the transformation of the energy sector. Low electricity prices are putting pressure on traditional business models and spurring innovation. Meanwhile, falling technology costs and greater focus on climate change are accelerating development of renewable energy and incentivising electrification as a means of reducing CO_2 emissions. This entire development is underpinned by digitalisation, enabling companies to work smarter, faster, and more efficiently.

What this means for Vattenfall

Wind power continues to grow in all of Vattenfall's markets, both offshore and onshore.

Hydro power will continue to play a key role as a large-scale, on-demand and renewable energy source.

Energy storage systems such as batteries and pumped storage power plants are helping to manage the challenges presented by renewable and weather-dependent energy like wind and solar power.

Solar power will play an ever-greater role in the future energy system, in both small- and large-scale installations.

Electrification of roads and transportation will contribute to significant reductions in CO_2 emissions and noise in cities.

The city of the future is an emissions-free environment with sustainable heating solutions, solar panels on rooftops, a secure and flexible electricity grid, and electric vehicles on the streets.

Nuclear power will continue to play an important role in Sweden until it is decommissioned in the 2040s as a climate-neutral, cost-effective source of baseload electricity.

Electrification of industries like steel, cement, chemicals, and refineries has the potential to dramatically reduce CO_2 emissions from industrial processes.

Fossil fuels will be phased out within a generation, and we are continuing on our path towards a complete phase-out of coal in our heat portfolio by 2030.

Digitalisation is enabling development of better customer offerings along with more efficient operations and management of assets.

New ways of working are helping us improve our interaction with customers. This is strengthening risk management and operational efficiency, which is driving value and growth.

This is Vattenfall

We are one of Europe's largest producers and retailers of electricity and heat. Vattenfall's main markets are Sweden, Germany, the Netherlands, Denmark, and the UK. The Group has approximately 20,000 employees. The Parent Company, Vattenfall AB, is 100%-owned by the Swedish state, and its headquarters are in Solna, Sweden.

Electricity customers

6,450,000

Heat customers

2,090,000

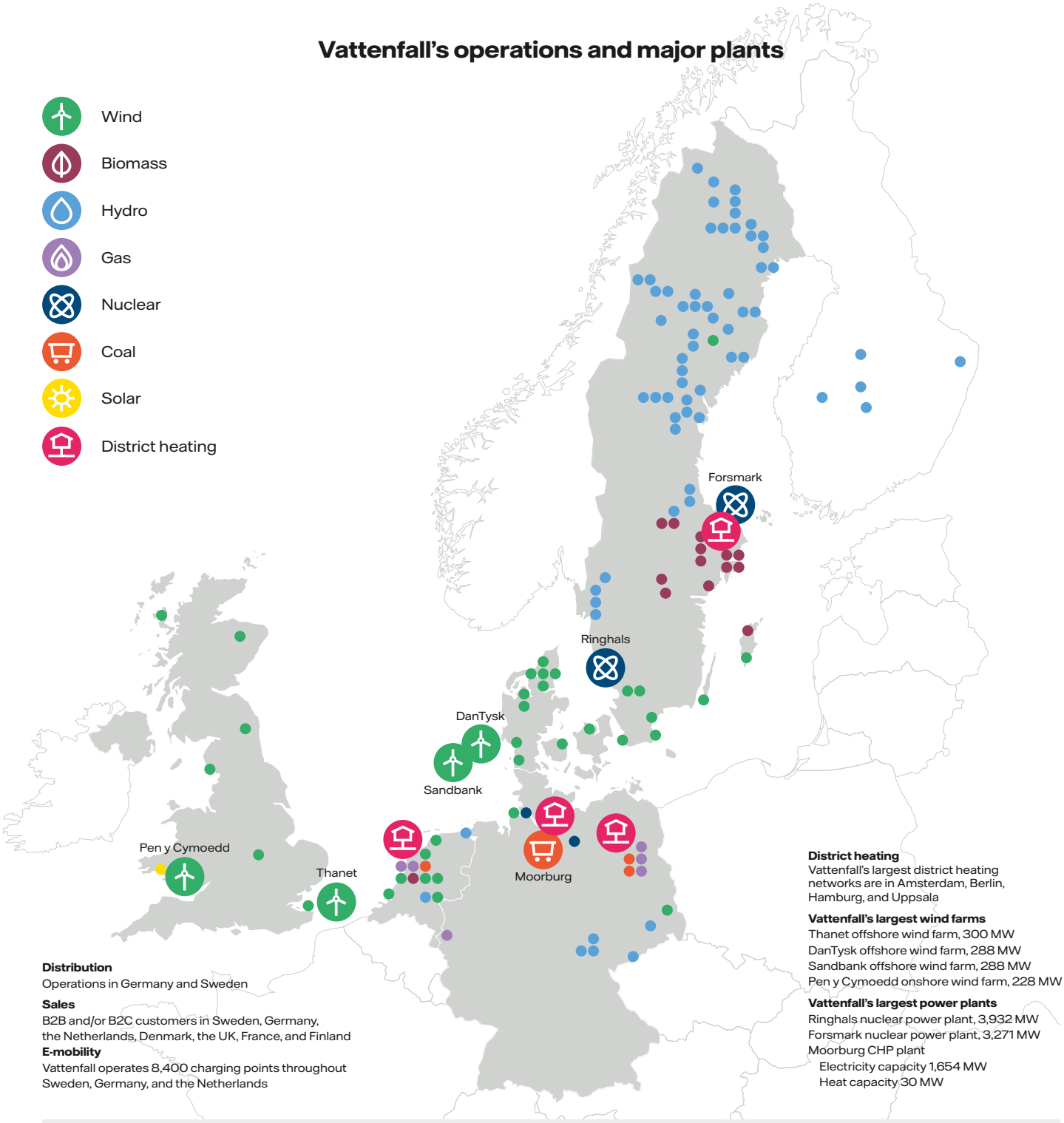
Electricity network customers

3,290,000

Gas customers

2,340,000

Vattenfall's operations and major plants



Distribution
Operations in Germany and Sweden

Sales
B2B and/or B2C customers in Sweden, Germany, the Netherlands, Denmark, the UK, France, and Finland

E-mobility
Vattenfall operates 8,400 charging points throughout Sweden, Germany, and the Netherlands

District heating
Vattenfall's largest district heating networks are in Amsterdam, Berlin, Hamburg, and Uppsala

Vattenfall's largest wind farms
Thanet offshore wind farm, 300 MW
DanTysk offshore wind farm, 288 MW
Sandbank offshore wind farm, 288 MW
Pen y Cymoedd onshore wind farm, 228 MW

Vattenfall's largest power plants
Ringhals nuclear power plant, 3,932 MW
Forsmark nuclear power plant, 3,271 MW
Moorburg CHP plant
Electricity capacity 1,654 MW
Heat capacity 30 MW

Operating segments – percentage share of underlying operating profit[1]

23,323

SEK million

8%	44%	9%	14%	25%
Customers & Solutions	Power Generation	Wind	Heat	Distribution

[1] Underlying operating profit is defined as operating profit excluding items affecting comparability.

Contents

About the report

The 2017 Annual and Sustainability Report for Vattenfall AB (publ) is submitted by the Board of Directors and describes the company's overall targets and strategy as well as the year's results. The administration report and accounts are found on pages 2–5, 8–11, 62–155 and are assured by our auditors. Pages 10–15, 61–65, 76–77, and 161–171 include Vattenfall's statutory sustainability report according to the Swedish Annual Accounts Act. Vattenfall has been reporting in accordance with the Global Reporting Initiative's (GRI) Guidelines annually since 2003 and for 2017 has applied the GRI Standards, "Core" option. Vattenfall uses the GRI framework as a basis for reporting and is inspired by the Integrated Reporting Framework with the ambition that the report will reflect how sustainability is embedded in the overall strategy as well as in the daily work. Vattenfall uses the Annual and Sustainability Report as its Communication on Progress for the UN Global Compact (UNGC).

Further information about Vattenfall's operations and sustainability work can be found at: **vattenfall.com/sustainability**.

● = Administration report and financial statements

The year in brief

Results 2017

Net sales of SEK 135,295 million (139,208)

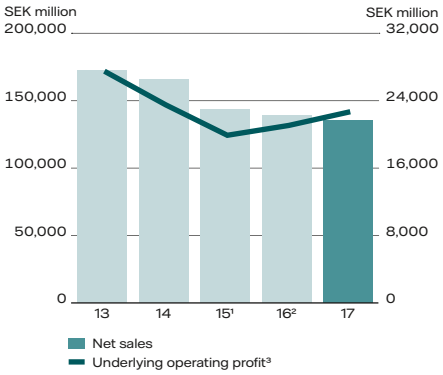
Underlying operating profit[1] of SEK 23,323 million (21,697)

Operating profit of SEK 18,644 million (1,337)

Profit for the year of SEK 9,571 million (-2,171)

[1] Operating profit excluding items affecting comparability.

Net sales and underlying operating profit

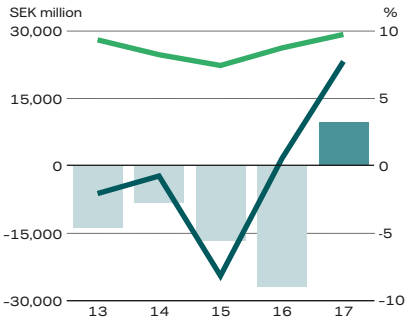


[1] The value for 2015 has been recalculated compared with information published in Vattenfall's 2015 Annual and Sustainability Report. This is because the lignite operations have been divested and are reported as a discontinued operation in accordance with IFRS 5.

[2] The value pertains to continuing operations.

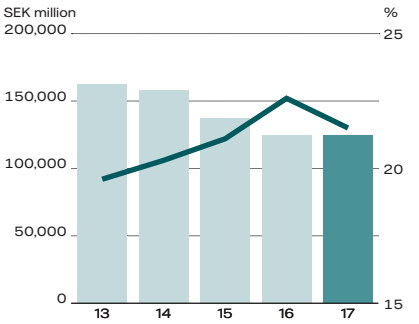
[3] Operating profit excluding items affecting comparability.

Earnings and return

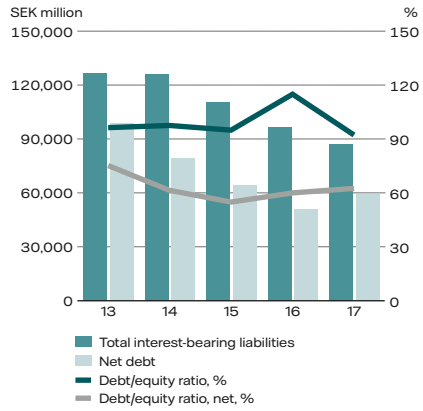


[1] Profit for the year attributable to owners of the Parent Company.

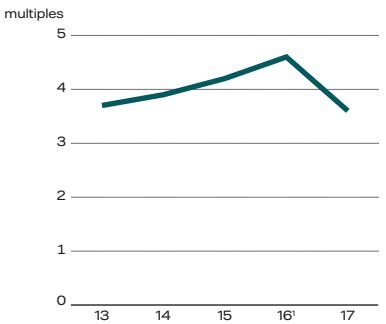
Adjusted net debt



Net debt

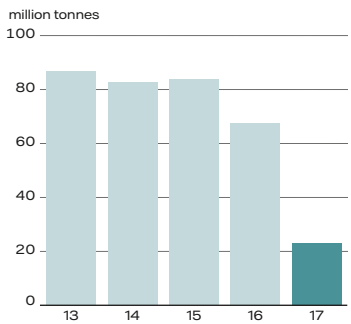


Adjusted net debt/EBITDA



[1] The value pertains to continuing operations.

CO_2 exposure[1]



[1] Absolute CO_2 emissions, pro rata corresponding to Vattenfall's share of ownership. Pertains to Total Vattenfall including the lignite operations.

Sustainable growth guiding Vattenfall into the future

Vattenfall continues to promote a climate-smarter life for its customers with the goal to reduce dependence on fossil fuels. We want to be a driver in this development. A number of important milestones were reached in 2017 on the path away from coal in parallel with substantial growth in renewable generation. At the same time, exciting developments are taking place in sales, heating, distribution and electric vehicle charging infrastructure. Through collaboration between our various business units we are meeting customers' needs for new energy solutions and demonstrating the value of being an integrated energy company.

A profitable company again

For 2017 Vattenfall reported a positive result for the first time in five years, with a net profit of SEK 9.6 billion and an underlying operating profit of SEK 23.3 billion. The Board of Directors proposes a dividend of SEK 2 billion. Our customer-centric strategy focused on sustainability, flexibility and cost control is leading us in the right direction and is now generating results. After a prolonged period of strained market conditions and large write-downs of asset values, Vattenfall today is a stronger and more resilient company. Our production portfolio is dominated by climate-neutral energy sources. New innovative products, services and partnerships are helping our customers lower their carbon emissions. During the year we delivered on our investment projects and cost-cutting at the same time that availability at our production plants increased. The capital structure is stable, and profitability has improved significantly. In many respects Vattenfall is a transformed company, and the task now at hand is to continue driving development forward through a high pace of investment but also strict cost control.

The market trend supports our transformation

The energy landscape that Vattenfall works in continues to change at a fast pace, as investments in renewable genera-

tion continue to take hold. Both the wind and solar power industries have matured considerably, with sharply falling costs and growing competitiveness as a result. The change in Vattenfall's business portfolio and greater growth in renewable energy production have contributed to a changed risk profile, which is also reflected in our new financial targets.

While development of renewable production has benefited from state support, technological progress and economies of scale are the main reasons that wind and solar have taken giant leaps forward in recent time and become more competitive. The marginal cost for these renewable energy sources is negligible and indirectly affects fossil-fired plants, which are increasingly left idle from production. Parallel with this, the cost of batteries continues to fall, and their capacity is improving. The prospects for electric-powered cars are thereby very favourable. Added to this, the entire distribution infrastructure must be adapted to new conditions. In short, it is an exciting time to be active in the energy industry.

To adapt to the future, Vattenfall is going through a fundamental transformation. Owing to the rapid pace of development, our need to develop and renew our competence in areas such as decentralised, customer-centric solutions and digitalisation is more acute than ever.

In 2017 Vattenfall InHouse was launched – a new energy solution that clearly embodies how we can be expected to work differently in the future. Large property owners and tenant-owner associations in Sweden are being offered sustainable solutions for electricity, heat and electric vehicle charging together with system optimisation. The concept is a result of close cooperation between our various business units, which have come up with a holistic solution to a distinct customer need. We are also running one of the first pilot projects for microgrids at the same time that we are developing new offerings in both solar and batteries in the Continental markets, such as solar panels for apartment buildings in Berlin.

Good progress in our investment projects

During the year a number of important investment projects were successfully completed. The Sandbank (288 MW) offshore wind farm in Germany was finished three months ahead of schedule. Our largest onshore wind farm in the UK, Pen y Cymoedd (228 MW), began operating at full capacity. We also made good progress in the investment programme for the distribution operations in both Sweden and Germany. On top of all this, we continued our expansion of electric vehicle infrastructure, where the InCharge network now includes more than 4,000 charging points.

The national energy agreement in Sweden in 2016 set the stage for a long-term positive future for nuclear power in Sweden. Investment decisions for independent core cooling have been made for both Forsmark and Ringhals, which means that we can ensure operation until the 2040s and enable a cost-effective shift to a renewable system. The Swedish Radiation Safety Authority (SSM) now also recommends that the government grant a licence for a final repository for spent nuclear fuel in Forsmark, but wants to see additional documentation from SKB regarding the canisters for spent nuclear fuel.

> "The climate is a central issue for Vattenfall that strongly influences our strategic decisions. Our company shall enable a fossil-free society."

Parallel with this, hydro power must adapt to more modern environmental requirements. Toward this end, together with eight other hydro power owners we have taken the initiative to establish an environmental fund to finance related measures.

Working for a smaller carbon footprint

The climate is a central issue for Vattenfall that strongly influences our strategic decisions. Our company shall enable a fossil-free society. As part of our action plan for reduced CO_2 emissions, in 2017 we proceeded with our phase-out of coal-fired power generation in Berlin with the conversion of a lignite-fired power station, Klingenberg, to natural gas, and took the decision to close a hard coal–fired plant, Reuter C.

More long-term, however, we can make the biggest difference by enabling the electrification of transport, heating and industrial processes. We are working together with customers and partners in a number of R&D projects focusing on energy solutions to achieve a smaller carbon footprint.

Responsibility to respect human rights

Apart from the climate issue, human rights are reflected as a distinct part of the UN's 17 Sustainable Development Goals. During 2017 our focus was on strengthening our internal level of knowledge and continuing to integrate human rights in our processes and daily work. An update of the Code of Conduct for Suppliers was an important step, since we have identified that our greatest risks related to human rights lie in purchases of fuel and other products and services from high-risk countries. Among other measures taken during the year, we performed an evaluation of our supply chain for purchases of hard coal from Colombia. We identified risk areas and are now engaged in a dialogue on how to help the mining companies strengthen their obligation to respect human rights.

Our people make the difference

As already mentioned, a lot is happening in the world around us and in our company, but it is at the individual level that we will really make a difference going forward. The power to drive Vattenfall into the future lies with our employees. Although we have a lot of work ahead of us, it is gratifying to note that we achieved a considerably improved engagement score in our annual employee survey. I want to take this opportunity to thank all our employees for their exceptional work during the past year.

Fossil-free within a generation

The path forward for Vattenfall is clear, ambitious and inspiring. It's not enough to be efficient – we must also be innovative in our ways of working. It's not enough to invest in renewables – we must tap into the full potential that exists in electrification and digitalisation. This is how we can help our customers live and work entirely without fossil fuels. We want to make it possible within one generation. It is toward this purpose that we act in practice – today and in the future.

Magnus Hall, President and CEO

Important events

Q1 2017

New gas-fired combined heat and power (CHP) plant in Berlin – Decision taken to invest EUR 305 million to construct a new climate-smart combined heat and power plant in the Berlin district of Marzahn-Hellersdorf. It is a gas-fired CHP with a capacity of 260 MWel and 230 MWth. Commissioning is expected in 2020.

Gold rating for sustainability performance – Vattenfall received a Gold rating for its corporate social responsibility (CSR) performance by EcoVadis, an independent agency that provides CSR ratings and scorecards.

Supply contract for batteries with BMW Group – Vattenfall and the BMW Group signed a contract for delivery of up to 1,000 lithium-ion batteries, the same battery used in the BMW i3. Vattenfall will use the new batteries in storage projects – the first of which will be built at the Princess Alexia onshore wind farm in the Netherlands. The storage will have a capacity of 3 MW.

Vattenfall and the BMW Group have signed an agreement for the BMW Group to deliver up to 1,000 lithium-ion batteries for new storage projects.

Collaboration between Preem and Vattenfall on large-scale biofuel project – Vattenfall and the fuel company Preem concluded an agreement to investigate the potential of using climate-smart hydrogen gas in large-scale production of biofuel for the Swedish market.

New initiative to capture excess heat – Vattenfall initiated a new concept, SamEnergi, focused on teaming up with new partners to capture surplus heat from industrial and commercial facilities and feed it into the district heating network.

Q2 2017

Geothermal solutions for private customers – Vattenfall acquired a 35% share in BrainHeart Energy Sweden, the largest supplier of geothermal solutions to private customers in Sweden. Together the parties will develop and deliver climate-smart energy solutions for private customers.

Renewable energy to British customers – Vattenfall began selling renewable energy to British customers for the first time, focusing primarily on large B2B customers seeking to reduce their carbon footprint.

Vattenfall will invest nearly EUR 100 million in the coming two years in a new heat storage facility at the Spandau power-to-heat plant in Berlin.

New heat production in Berlin – Decision taken to invest nearly EUR 100 million in the coming two years in a new power-to-heat plant with complementary natural gas-fired heat boilers in Berlin's Spandau district. The plant will have a thermal capacity of 120 MW, and commissioning is planned for 2019.

Vattenfall strengthens efficiency through partnering – Vattenfall partnered with Accenture and Capgemini to modernise its administrative systems and tools. Vattenfall will outsource part of its HR administration to Accenture and its Finance and Procurement functions to Capgemini.

Joint venture for fossil-free steel between SSAB, LKAB and Vattenfall – The three companies formed a joint venture company to drive the HYBRIT initiative forward, with the goal to develop a steel making process that emits water instead of carbon dioxide.

Support on Cementa's path to zero emissions – Vattenfall and Cementa are together investigating the possibility to electrify the cement making process in order to reduce its environmental impact.

Q3 2017

Acquisition of iSupplyEnergy – Vattenfall acquired the fast-growing electricity and natural gas supply company iSupply-Energy in the UK. At the time of acquisition the company had 120,000 gas and electricity customers.

Inauguration of Ray wind farm – Vattenfall inaugurated Ray wind farm in Northumberland, UK in July. The onshore wind farm consists of 16 turbines with total capacity of just over 54 MW and will be able to supply 30,000 UK households with electricity.

Inauguration of Sandbank offshore wind farm – The Sandbank offshore wind farm, a cooperation between Vattenfall and Stadtwerke München, was inaugurated in July. The wind farm consists of 72 turbines and has installed capacity of 288 MW. The wind farm will provide 400,000 German households with renewable energy.

Inauguration of Pen y Cymoedd onshore wind farm – During the quarter Vattenfall inaugurated its largest onshore wind farm, Pen y Cymoedd, in Wales. The wind farm consists of 76 turbines, has installed capacity of 228 MW, and can supply 188,000 households with renewable energy.

400,000

German households are provided with renewable energy from the Sandbank offshore wind farm

Participates in EV100 initiative – Vattenfall and nine other multinational companies joined forces in an initiative called EV100 to push for the transition to electric vehicles. The aim is to make electric vehicles the new normal. Vattenfall will transition its entire fleet of 3,500 cars to EV in the coming five years.

Acquisition of 118 MW onshore wind project in the Netherlands – Vattenfall acquired the Wieringermeer Extension project and will build an additional 32 wind turbines with a capacity of 118 MW next to the company's existing Wieringermeer wind farm. Commissioning is expected in 2020.

Launch of Vattenfall InHouse – Vattenfall launched InHouse, an innovative concept of smart energy services for tenant-owner housing associations and property owners in Sweden. The concept combines local energy with customers' own energy solutions to offer a range of customised services in the areas of heating, electricity, charging, controlling, optimising, measuring, and billing.

Q4 2017

New CFO appointed – Anna Borg was appointed as the new CFO of Vattenfall, replacing Stefan Dohler who left the company.

Repowering and expansion of largest Dutch wind farm – Vattenfall decided to invest more than EUR 200 million to repower and expand the Wieringermeer onshore wind farm in the Netherlands. Vattenfall will replace the wind farm's 50 existing wind turbines with the latest technology to a capacity of 180 MW by 2020. Together with the recently acquired neighbouring Wieringermeer Extension project, the combined facility will reach a total capacity of 298 MW.

298 MW

Planned capacity at Wieringermeer & Wieringermeer Extension by 2020

Major wind power supply deal with Microsoft – Vattenfall signed a ten-year agreement to power Microsoft's international data centre operations in the Netherlands with wind power from the Wieringermeer wind farm. Microsoft will buy 100% of the energy output from the wind farm.

Establishment of electricity network operations in the UK – During the quarter Vattenfall formed Vattenfall Networks Ltd, a new unit that will own and operate electricity networks in the UK. The operating licence was granted on 1 November, and operations are expected to start in 2018.

Safety upgrade at Ringhals – Vattenfall took the decision to invest SEK 900 million in independent core cooling in reactors 3 and 4 at the Ringhals power plant. This is a safety upgrade required by the Swedish Radiation Safety Authority to enable operations to continue beyond 2020. A corresponding investment decision for Forsmark was made in 2016.

New financial targets – On 12 December 2017 Vattenfall's owner adopted new financial targets. The targets reflect a change in market conditions as the renewable energy sector has matured considerably. See page 11 for further information.

Major supply and energy management agreement with AkzoNobel – Vattenfall signed an agreement to supply 1.5 TWh of electricity on an annual basis to AkzoNobel.

Targets and target achievement

At Vattenfall we aspire to contribute to a sustainable energy system in all parts of the value chain. Our goal is to be a truly customer-centric company as we change over to a long-term sustainable production portfolio. Vattenfall's Board of Directors has set six strategic targets, and Vattenfall's owner has set three financial targets for the Group.

Strategic targets

Vattenfall's strategy is built upon four strategic objectives. Vattenfall will be 1) Leading towards Sustainable Consumption and 2) Leading towards Sustainable Production. To achieve this, we must have 3) High Performing Operations and 4) Empowered and Engaged People. Vattenfall's Board of Directors adopted the six strategic long-term targets to better reflect our strategy, and they took effect on 1 January 2016.

Strategic objective	Strategic targets for 2020	Outcome 2017	Comment
Leading towards Sustainable Consumption	Customer engagement, Net Promoter Score relative[1] (relative customer satisfaction): **+2**	+2	The Customers & Solutions operating segment continued its positive trend with a +2 (+7) relative NPS in 2017 and absolute improvements in the end customer market in all four core markets. Relative NPS decreased, however, as competitors made larger improvements.
Leading towards Sustainable Production	Commissioned new renewables capacity 2016–2020: **≥2,300 MW**	652 MW[2]	A total of 354 MW (298) of new renewable capacity was installed in 2017. The new capacity consists of the Sandbank offshore wind farm in Germany (72 MW of total 288 MW), and the Ray (54 MW) and Pen y Cymoedd (228 MW) onshore wind farms in the UK. Another 7 GW is in the project development pipeline.
	Absolute CO_2 emissions pro rata: **≤21 Mt**	22.6 MT	CO_2 emissions of 22.6 Mtonnes (23.2) in 2017 were slightly lower than in 2016. Higher production from certain fossil-based plants in Germany was balanced by lower production from plants in the Netherlands.
High Performing Operations	Return On Capital Employed (ROCE): **≥8%**[3]	7.7%[4]	The return on capital employed was 7.7% (0.5%). The improvement is mainly related to large impairment losses in 2016.
Empowered and Engaged People	Lost Time Injury Frequency[5] (LTIF): **≤1.25**	1.5	Lost Time Injury Frequency (LTIF) was lower than a year ago, at 1.5 (2.0), reflecting the focus that safety is a guiding principle in daily operations.
	Employee Engagement Index:[6] **≥70%**	64%	The Employee Engagement Index was 64% (57%) in 2017. The improvement can be credited to a clearer strategy and purpose to drive change.

1 NPS is a tool for measuring customer loyalty and for gaining an understanding of customers' perceptions of Vattenfall's products and services. The target is a positive NPS in absolute terms +2 compared to Vattenfall's peer competitors.
2 Pertains only to wind farms completed and commissioned between 1 January 2016 and 31 December 2017.
3 The target for Return on Capital Employed (ROCE) was changed from 9% to 8% by Vattenfall's owner at an extraordinary general meeting in December 2017.
4 The key ratio is based on average capital employed.
5 Lost Time Injury Frequency (LTIF) is expressed in terms of the number of lost time work injuries (per 1 million hours worked), i.e. work-related accidents resulting in absence longer than one day, and accidents resulting in fatality. The ratio pertains only to Vattenfall employees.
6 Documentation for measurement of target achievement is derived from the results of the My Opinion employee survey, which is conducted on an annual basis.

Financial targets

The financial targets pertain to profitability, capital structure and the dividend policy, and were set by Vattenfall's owner at an extraordinary general meeting in December 2017.

These targets are intended to ensure that Vattenfall creates value and generates a market rate of return, that the capital structure is efficient, and that financial risk is kept at a reasonable level.

Financial targets	New targets over a business cycle[1]	Old targets over a business cycle[1]	Outcome 2017	Comment
Profitability	Return on capital employed: **≥8%**	Return on capital employed: **≥9%**	7.7%[2]	The return on capital employed was 7.7% (0.5%).
Capital structure	FFO/adjusted net debt: **22%-27%**	FFO/adjusted net debt: **22%-30%**	21.5%	FFO/adjusted net debt decreased slightly compared with 2016, to 21.5% (21.6%). Adjusted net debt was stable, while FFO decreased slightly mainly due to higher interest paid in 2017 as a result of a partial repurchase of a bond maturing in 2039.
Capital structure		Debt/equity ratio[3]: **50%-90%**	63.0%	The debt/equity ratio increased to 63.0% (60.5%) compared with 2016, mainly due to a reclassification of SEK 15.7 billion in nuclear power provisions to debt, which was partly offset by a positive net cash flow of SEK 7.1 billion after investments.
Dividend policy	Dividend: **40%-70% of the year's profit after tax**	Dividend: **40%-60% of the year's profit after tax**	2 billion[4]	The Board of Directors proposes payment of a discretionary dividend of SEK 2 billion for 2017.

1 5-7 years.
2 The key ratio is based on average capital employed.
3 The target for debt/equity ratio was removed at an extraordinary general meeting in December 2017 when new financial targets were set by Vattenfall's owner.
4 The proposed dividend will be voted on at the Annual General Meeting on 25 April 2018.

Vattenfall's value chain

Value creation process

Vattenfall is an integrated energy company. We create value by producing and distributing electricity and heat to our customers. Within sales, we also offer gas and energy solutions to our customers. We generate value beyond our products and services, by providing jobs for employees, contracting suppliers, paying taxes, and driving technological development and innovation with partners, to name just a few examples. The following section describes our business model and value chain. It is illustrated by applying the six capital inputs of the International Integrated Reporting (IR) Framework and describing our operational activities and the value we generate for our stakeholders. On pages 14 and 15 we describe our total impacts and our contributions to the UN's Global Sustainable Development Goals.

Inputs

The items listed in the "six capitals" below represent the resources we use in our business activities that enable us to create value for our stakeholders.

Natural capital
- Hydro power
- Wind power
- Coal and gas
- Uranium
- Biomass, waste
- Solar power

Financial capital
- Growth investments in renewables
- Maintenance investments (e.g. in safety)
- Investments in energy transformation and smart grids

Human capital
- Engineering and service skills
- Trading and raw material market knowledge
- Market analysis
- Digital competence
- Meteorology (weather- dependent sources)
- Business development
- Technical innovation

Manufactured capital
- Hydro power plants
- Wind power plants
- Thermal heat and power plants
- Small-scale PV plants
- Electricity networks
- Nuclear power plants
- Decentralised solutions (e.g. heat pumps, batteries, and smart appliances)

Intellectual capital
- Sustainability framework and integration of sustainability in operations
- New ways of working
- Values and brand recognition
- Structures and processes
- Research and development

Social and relationship capital
- Customers with increasing sustainability expectations
- Individualisation of customer relationships via digital platforms
- Responsible relationships with suppliers
- Active dialogue with local communities, stakeholder organisations, investors, etc.

Core businesses

Vattenfall is an integrated energy company with business activities in five core areas that reflect our strategy and our operating activities.

Production
Vattenfall produces electricity from hydro power, nuclear power, coal, natural gas, wind power, solar power, biomass, and waste. We are actively phasing out fossil-based production and investing in a greater share of renewable generation.

District heating
We are one of Europe's largest producers and distributors of district heating, supplying households and industries in metropolitan areas. In partnership with cities and regions we are driving the transformation towards fossil-free heating solutions, such as by integrating surplus or waste heat from third parties in our district heating networks.

Sales of electricity, heat and gas
Vattenfall sells electricity, heat and gas to consumers and business customers. We focus on optimising the customer experience by offering various price and service models and by giving customers opportunities to reduce their environmental impact.

Electricity distribution
Being able to guarantee secure supply requires well-functioning distribution networks and development of smart network solutions. Vattenfall enables customers to feed self-generated electricity into the grid, thereby becoming so-called prosumers who both buy and sell electricity. Vattenfall conducts electricity grid operations in Sweden and Germany. Electricity distribution is a regulated monopoly business that is supervised by national grid authorities.

Energy services and decentralised generation
Vattenfall offers energy services, including battery storage, network services, charging solutions for electric vehicles, solar panels, heat pumps and smart meters. We also provide marketplaces and access to marketplaces where customers can buy and sell electricity, optimise their energy use, and access convenient and smart energy solutions.

Outputs

Vattenfall gives its customers and society tools for a climate-smarter life. We provide reliable and cost-effective energy solutions. Our operations are also essential for society – both economically and by driving development towards a fossil-free world. Following are some examples of value we create for our customers, society, our owners and our employees.

For society
- Approximately 95 TWh of fossil-free electricity
- SEK 10.8 billion in tax payments
- Support and encouragement to local suppliers by organising supplier education and encouraging participation in tenders
- Partnering with cities and regions to develop and implement climate neutrality plans
- Providing expertise to drive the energy transformation and sustainability issues
- Participation in local environmental and biodiversity conservation projects

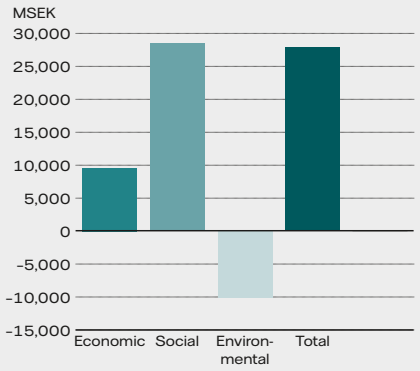
For customers and partners
- Supplying safe, stable, affordable and low-CO_2 energy to a large number of customers in seven countries
- 10%–30% fewer electricity outages during the last five years
- Offering decentralised solutions, such as solar power, heat pumps, and e-mobility, to enable our customers to participate in the energy transformation
- Powering electricity intensive industries with fossil-free electricity and promoting electrification of industry, such as through collaborations with companies in the steel, cement and refinery industries
- Leading the electrification of transport, operating more than 8,400 charging points, and an internal commitment to electrify Vattenfall's entire fleet

For Vattenfall's owner and employees
- Providing a livelihood for some 20,000 employees with an emphasis on inclusion, diversity and safety
- Approximately 1.8 days of training per employee every year, and numerous employee development and leadership programmes
- Dividend of SEK 2 billion proposed by the Board of Directors to our owner for 2017

Outcomes

Vattenfall's total value creation

During the year we made a first attempt to quantify our actual impacts on society – both positive and negative. Vattenfall's total value creation is based on an estimation of the value we have created from economic, social, and environmental perspectives. For the first time, we have tried to measure effects where relevant and possible, as shown in the diagram at right. We estimate our total value creation during 2017 to be SEK 27.9 billion. We intend to refine and develop our approach to calculating our total value creation over time, as it is increasingly integrated into the company's decision-making processes and influences how we contribute toward various sustainability initiatives, such as the UN's Global Sustainable Development Goals.



Economic

Our economic calculation follows standard accounting procedures and is based on net sales with remaining items deducted. Although "cost of products sold" consists of sales revenue for other companies, it is treated as a negative in our calculation as it is reflected in the income statements of our suppliers. Similarly, both taxes and wages are deducted from net sales and are treated as positive contributions from the social perspective. The net economic contribution of Vattenfall recorded here is equal to the company's profit[1].

Economic value = SEK 9,571 million
Net sales – Cost of products sold – Other income and expenses – Financial expense and income tax

Social

In the social dimension, we aim to capture our impacts on people and society, although the social value we create and the costs we incur can be difficult to quantify. We have included taxes and wages from the ordinary reporting as well as costs for accidents in the calculation and have quantified the cost of an employee or contractor involved in a traffic accident as SEK 1 million per accident and SEK 25.4 million per fatality (based on figures from the Swedish National Traffic Authority).

The indirect social values are harder to quantify and have not been included in the calculation. These include the economic value generated by the spending power of our employees, the value of contracts awarded to the communities we operate in, and the value of investments in community improvements. Nor have we factored in local disturbances that affect neighbours of our facilities or the potential negative impacts our facilities may have on quality of life, including people's health or the beauty of nature.

Social value = SEK 28,400 million
Taxes + wages – (Number of accidents (LTI) x cost per accident) – (Number of fatalities x cost of fatality)

Environmental

In our environmental calculation, as a first step we have focused on our direct (Scope 1) emissions, as this is our most material environmental aspect. We aim to improve the methodology in the coming years. We have calculated the negative costs related to our emissions based on the CO_2 price in the EU and the ETS. The value given here is an additional negative value.

In 2017 Vattenfall generated 44 TWh of renewable electricity and added 354 MW of new renewable capacity, but we have not included these net benefits in terms of emission reductions, nor have we included the benefits of our environmental projects or our contributions to biodiversity and ecosystem research. Similarly, we did not include monetary amounts for potential negative impacts including land use, ecosystem alterations, resource depletion, or other emissions.

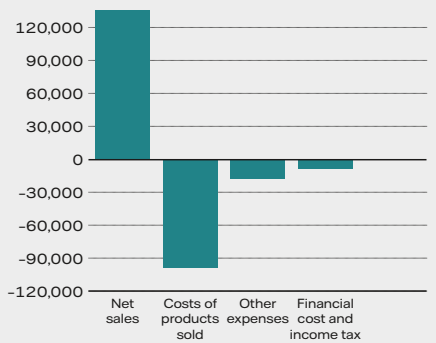
The damage-related costs of CO_2 emissions depend on the development of global emission levels in society, as greater emissions reductions reduce damage costs. Typical damage costs range from SEK 200–1,000/tonne[2]. Based on a medium to high emissions scenario, we have used SEK 500/tonne as a baseline value.

Environmental value = SEK -10,077 million
– SEK 500/tonne CO_2 x CO_2 emissions + cost of purchased emission allowances

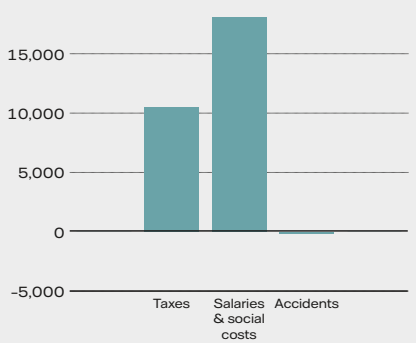
[1] For more information on taxes and wages, see Note 15 and page 166, and Note 46 respectively.

[2] Ecofys, "Subsidies and costs of EU energy", 2014.

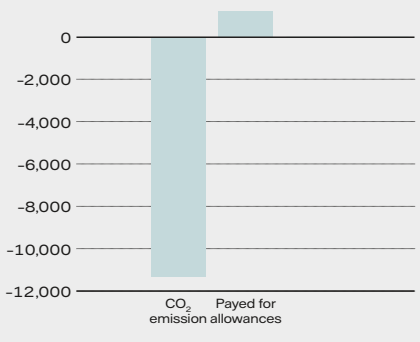
Economic



Social



Environmental



The UN's Global Sustainable Development Goals

Vattenfall's activities and value creation also contribute to the UN's Sustainable Development Goals (SDGs), which are a collection of 17 global goals that were adopted in 2015 by more than 150 countries. We understand that businesses and industries play a decisive role in the extent to which these goals are achieved. Based on an updated materiality analysis and an analysis of our strategic objectives along with the results of internal dialogues and workshops, we have identified six SDGs that are most relevant for Vattenfall and where we can have the greatest global impact. These goals are: 7 – Affordable and clean energy, 9 – Industry, innovation and infrastructure, 11 – Sustainable cities and communities, 12 – Sustainable consumption and production, 13 – Climate action, and 17 – Partnership for the goals. Vattenfall also contributes to other SDGs at the local level, including 5 – Gender equality, 8 – Decent working conditions and economic growth, 14 – Life below water, and 15 – Life on land. In addition, the following SDGs are relevant through our suppliers: 6 – Clean water and sanitation, and 10 – Reduced inequality[1].

We are working together with municipalities, companies, and non-governmental partners to ensure that welfare recipients do not have their electricity or heat service disconnected. We are investing in stable, reliable networks at the same time that we are focusing on strict cost control, improved availability and greater integration of renewable energy sources. In addition, we are investing in technologies and solutions to phase out fossil fuels from heating systems and replace fuel in our power plants to reduce CO_2 emissions.

We are making it possible to further integrate renewable energy in electricity and heating networks through our investments in grids and infrastructure, and we are creating opportunities for partners and consumers to electrify processes using fossil-free electricity and thereby reduce their own emissions.

We are firmly committed to becoming fossil free within one generation. We are collaborating with the cities in which we operate to use our industry knowledge and co-develop ambitious yet feasible city-specific climate neutrality roadmaps.

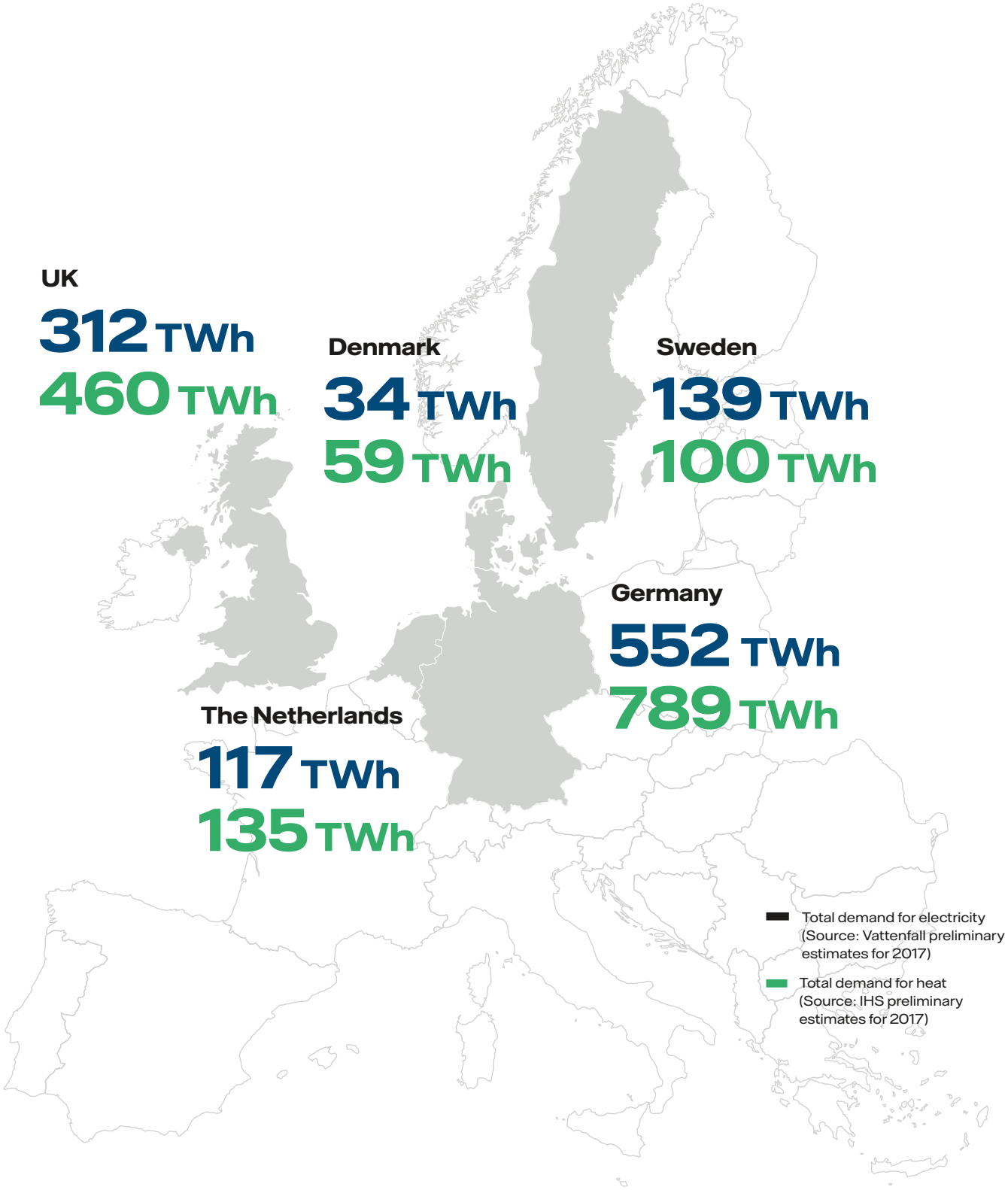
[1] For more information, visit vattenfall.com/sustainability/un-sustainable-development-goals/.

We are making it possible for customers to participate in the energy transition via decentralised solutions like solar power, heat pumps, and micro grids. We recognise that Vattenfall's projects have potential impacts, such as sight, noise and land use, that may be considered as negative by some stakeholders. We are striving to mitigate these impacts by engaging with stakeholders. We are making it possible for cities to reduce their environmental impacts by expanding our district heating networks, developing fossil-free decentralised energy solutions for customers in urban environments, and expanding our e-mobility initiatives.

We are codifying guidelines for responsible purchasing and human rights policies within our supply chain through our Code of Conduct for Suppliers. We are striving to achieve best-in-class efficiency in all our operations and the greatest possible production with the smallest possible use of fuel and chemicals as well the minimum amount of waste. Our Environmental Product Declarations and Life Cycle Assessments enable customers to make smart choices.

We have formed partnerships with energy-intensive industries like the cement industry, refineries, and steel manufacturing to reduce CO_2 emissions. We have also partnered with a food company to use their surplus heat to warm local homes instead of just releasing the heat. Further, we have joined EV100, a global partnership initiative to promote the electrification of transportation.

Markets and regulations



Political outlook

The UN climate change conference was held in Bonn in November 2017, and despite the Trump administration's exit from the Paris agreement, the rest of the world is moving step-by-step away from fossil fuels. One example is "The Powering Past Coal Alliance" initiative, which was launched in Bonn and involves 27 countries, states and cities that have committed to phase-out all coal-fired power plants by 2030.

2017 was a year of general elections in many of the key countries for Vattenfall, including Germany, the Netherlands and the UK. Once the new coalition governments are in place, new national energy policies will be discussed and developed.

In Sweden, the final parts of the energy policy agreement are now being implemented, and focus is now shifting towards the general election in September 2018.

European Union

Clean Energy for all Europeans Package – On 30 November 2016 the European Commission presented its plans for the next steps in the Energy Union to speed up the clean energy transition and boost growth and job creation in the EU. The package pursues three main goals: putting energy efficiency first, cementing the EU's global leadership in renewable energies, and providing a fair deal for energy consumers. It is meant to provide a stronger push for and more clarity on how to reach the 2030 targets (minimum 40% reduction in greenhouse gas emissions, at least 27% of consumed energy should come from renewable sources, and a non-binding energy efficiency target of 27% compared to 2002). The ambitious package is scheduled to be adopted in 2018.

European Framework for reduction of greenhouse gas emissions – The amended Emissions Trading Directive was adopted in the Trilogue meeting in November 2017 and by the EU Parliament in February 2018. The aim is to improve the EU ETS system for the 4th trading period, which starts in 2021.

Decarbonising the transport sector – The Commission set out two targets for transport emissions in its White Paper on Transport: a 20% reduction from 2008 levels by 2030, and a 60% reduction from 1990 levels by 2050. The proposed 2030 EU Climate and Energy policy framework reiterates these goals.

At the end of 2013 the EU adopted new legislation to reduce CO_2 emissions from road transport – specifically new passenger cars and light commercial vehicles (vans). By 2021 average emissions from new cars will need to be reduced by 40% compared with 2007 to a level of 95 gCO_2/km.

In November 2017 the European Commission presented its second Clean Mobility Package, which sets the course forward for reducing CO_2 emissions in Europe's road transport until 2030. Negotiations on this package will take place in 2018 before final adoption.

Sweden

Regulatory framework for hydro power – As one of the last steps in the Swedish energy policy agreement, the government has submitted a proposal on draft legislation which aims to establish a national plan for mitigation measures in the hydro power sector, based on a balance between environmental and energy interests.

According to the proposed legislation, the impact on hydro power generation will be limited, which is important for Sweden's electricity supply. Should the plan be designed to prioritise mitigation measures to maximise environmental benefits, the industry is prepared to set up a financing body to realise the plan.

New electricity retail market design – A supplier centric market model and an electricity market data hub is to be implemented in Sweden in the end of 2020. The aim is to achieve a more integrated Nordic retail market for electricity, a level playing field for suppliers, customer friendliness, and efficient information exchange.

Nuclear fuel and waste management – The Swedish Radiation Safety Authority (SSM) recommends that the government grant a licence for a final repository for spent nuclear fuel in Forsmark. The Land and Environment Court approved the Forsmark site, the encapsulation plant in Oskarshamn and the environmental impact assessment. The court has requested further information from SKB regarding the copper canisters. This information will be sent directly to the government, which is now responsible.

Nuclear Waste Fund – In December 2017 the Swedish government decided on the fee level to be paid into the Swedish Nuclear Waste Fund for the period 2018–2020. The fee will decrease for Forsmark by 0.6 öre/kWh to 3.3 öre/kWh and increase for Ringhals by 1.0 öre/kWh to 5.2 öre/kWh.

Denmark

New political framework for Danish energy policy – The government is expected to propose a political framework for a new energy policy towards 2030 and begin negotiations with parliament in 2018. The starting point for negotiations will be the Paris agreement, along with the government's target that a minimum of 50% of Denmark's energy consumption should be renewable by 2030.

Future for offshore wind power in Baltic and North Seas – A new energy agreement is expected to include a future framework for offshore wind in the Baltic Sea and North Sea. This is expected to cover capacity needs, tendering models, and a screening to identify sites for future offshore wind farms and capacity.

EU target increases need for electrification – Denmark has set a 39% CO_2 reduction target by 2030 compared to 2005 for emissions outside the EU Emissions Trading System, mainly targeting transportation, heating and agriculture. This is likely to increase focus on electrification of transport and residential heating. The government is expected to present a climate plan in 2018 for how it will meet the target.

Netherlands

New government agreement with ambitious CO_2 reduction target of 49% by 2030 – A new government was formed in the Netherlands in October 2017. The government's agreement on climate and energy matters is ambitious, formulating a target of 49% CO_2 reduction by 2030 and aiming to raise the EU's target from 40% to 55%. Topics that will be part of this new agreement are the closure of all coal-fired plants before 2030, a dramatic reduction of industrial CO_2 emissions via carbon capture & storage (CCS), and a plan to impose a national CO_2 price for the power sector that will climb from approximately EUR 18 to EUR 43 per tonne of CO_2.

Dutch government opens offshore wind tender for zero subsidy bids – The Dutch Energy Agreemment calls for the expansion of offshore wind power by 3,500 MW. Falling bid levels prompted the government to change the tender process to enable zero subsidy bids, which in turn triggered major changes in the legislative framework. The 2017 tender opened at the end of the year and is based on qualitative criteria. A new offshore wind target for 2030 was indicatively set (and affirmed by the new coalition agreement) at a minimum of 11.5 GW total. This translates to an increased roll-out of 1 GW/year starting in 2024 up to 2030 in addition to the current roll-out of 700 MW/year up to 2023 (leading to 4.5 GW by then).

Heating transition – Approximately 90%–95% of homes and buildings in the Netherlands are heated by natural gas–fired boilers. To reach the CO_2 reduction targets of the Paris agreement, the Netherlands will have to phase out natural gas in the built environment. In dialogue with multiple stakeholders, in 2017 the government introduced a transition path for low temperature heating. Sustainable alternatives being considered are district heating based on sustainable energy sources (biomass, geothermal, residual heat), fully electric heat, and CO_2-free gas (green gas or hydrogen).

UK

Clean Growth Strategy – In autumn 2017 the UK set out its policies to deliver deep cuts in carbon emissions by 2032 and maintain the trajectory of emissions reductions needed to meet the climate change obligations by 2050. It closely links clean growth to economic expansion and industrial strategy. The expected continued growth of renewables and storage capacity in the power sector, the decarbonisation of heat, and rapid growth in e-mobility build on the UK's existing strength in renewables, particularly offshore wind.

Smart, digitalised energy consumption – Following a major roll-out of smart meters in the UK, public policy is now being developed around smart, digitalised energy consumption, enabling consumers to exercise greater control over how they produce and consume energy in their homes and businesses.

Brexit – The UK's decision to exit the EU points to an uncertain economic future against a background of relatively weak productivity. UK government organisations have suggested that the country's exit from the EU will result in slower economic growth for a period of time than would otherwise have been the case.

Germany

Nuclear phase-out – Following EU approval, the law on the financing of nuclear phase-out took effect in June 2017, and the nuclear operators transferred an agreed sum of EUR 24.1 billion into a public fund. The responsibility for nuclear waste repositories now lies with the German government, while the operation remains with the companies. Vattenfall received a first permit to start building a repository at Brunsbüttel.

The International Center for Settlement of Investment Disputes (ICSID) has not yet decided on Vattenfall's case in which Vattenfall is asking for fair compensation for the accelerated nuclear phase-out in Germany. Separately, in late 2016 the German Federal Constitutional Court concluded that the revised nuclear law severely discriminated against the Krümmel plant. A decision by the legislator on how to remedy these breaches of the German Constitution is expected by 30 June 2018.

Berlin's energy networks – A decision by the City of Berlin on the grant of the electricity grid concession is possible by late 2018.

On 30 June 2017 the Berlin Administrative Court dismissed a suit by the City of Berlin, demanding a clarification that the expired electricity concession agreement does not pertain exclusively to Stromnetz Berlin assets, but gives the city the right to take over the district heating network as well. The City of Berlin has requested an appeal, and a decision on this request is expected in 2018.

Electricity regulation – The Grid Fee Modernisation Act took effect in July 2017. Starting in 2018 lost grid charges will be calculated based on a reduced 2016 cost level. The transmission system fees are to be harmonised nationwide until 2023.

Starting in July 2017 a new tenant electricity law provides new subsidies for rooftop solar panels on residential buildings delivering electricity directly to the end users.

Climate Protection Act planned – According to the coalition agreement of the new government, the already existing climate action plan for the various CO_2-emitting sectors will be made obligatory and further detailed by a new Climate Protection Act. A new commission will be created to make proposals until end of 2018 for how to achieve the national climate goals, including how to phase out coal in Germany.

Competitive landscape

European decarbonisation and renewable ambitions are growing as more renewables are added to the European energy mix at ever-lower costs. Low electricity prices and the rise of decentralised energy solutions are among the forces transforming the European energy system and making utilities revise their traditional business models built around large, centralised, capital intensive plants. "Prosumers" – customers that both consume and produce energy – are on the rise, enabled by decentralisation, technological advances, regulations for self-produced electricity from solar and wind power, and economic support systems. Utilities will need to lead the development of the future energy system by combining efficient, large-scale production with decentralised solutions that are close to the customers.

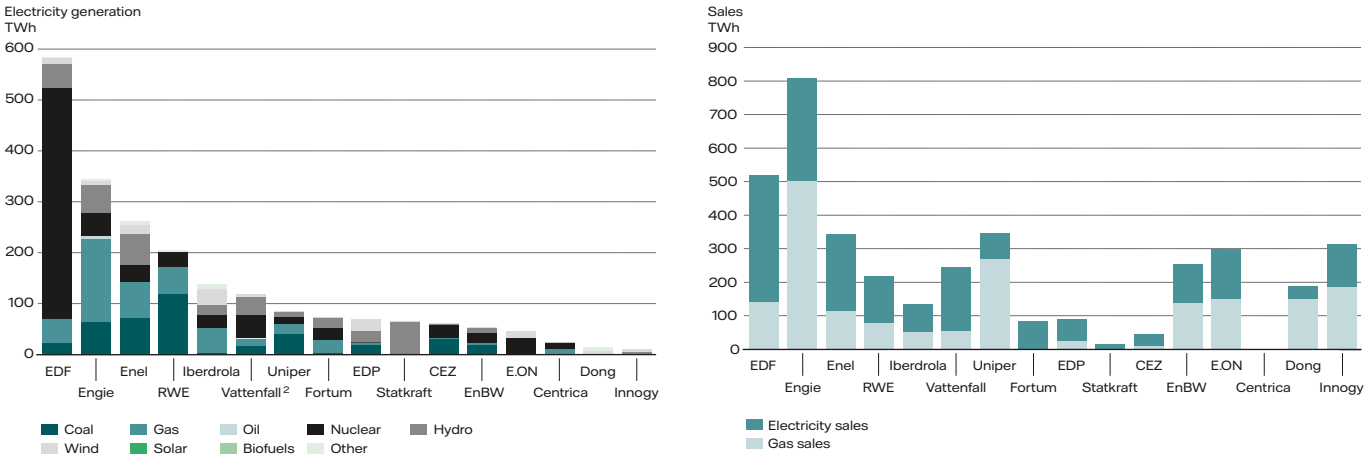
Driven by a switch from subsidised feed-in tariffs to progressive incentive mechanisms such as auctions, competition in European renewable energy projects has intensified, and the cost of renewable generation has reduced dramatically, leading to the first subsidy-free bids in auctions. Low-price renewable electricity has also driven electrification in several industries. Reducing emissions in the transportation industry is a main driver of the rapid growth of electric vehicles as well as vehicles powered by renewably produced hydrogen. The electrification of industry and transport is giving rise to new, potential business models and partnership opportunities for utilities.

Electrified roads powered by fossil-free electricity are one example of how electrification can decarbonise transport.

Technological advancements in areas such as machine learning and artificial intelligence, and lower costs for batteries and solar panels, are enabling improvements and new business models in energy production as well as in distribution and consumption. This is prompting utilities to develop new offerings to customers in areas like energy services, electric vehicle charging and decentralised solutions. The growing number of niche players across the energy value chain, as well as companies from other sectors taking more space in the European energy market, is leading to stiffer competition but also opportunities for partnering.

Vattenfall's purpose – to Power Climate Smarter Living – fits well with the transition that is currently taking place. With focus on our 6.5 million electricity customers, 3.3 million electricity network customers, 2.3 million gas customers, and 2.1 million heat customers, our commitment to sustainability, and our drive to use electrification to reduce CO_2 emissions beyond the energy sector, Vattenfall is taking a leading role in the transformation to a sustainable energy system.

Europe's largest producers of electricity (energy mix), and sales of electricity and gas[1]



1 Source: Company annual reports for 2016.
2 Excluding lignite operations.

Market trends

Below we highlight five major trends that will shape the energy sector going forward and which Vattenfall is basing its strategy on. Understanding these trends will allow us to unlock opportunities to grow and thrive in an increasingly fast-moving and competitive marketplace.

Five major trends that are shaping the energy sector

Sustainability and customer focus

Sustainability is key to attracting customers, talent and investors. Customers are increasingly considering climate impact, social and environmental performance, and energy efficiency when choosing energy solutions and suppliers. Customers want to minimise their carbon footprint both directly, through their choices in transportation and energy supply, and indirectly, through the businesses they support and engage with. Strong values, with a focus on sustainability and customers, will attract not only customers but also the talent and investments needed for Vattenfall to drive the energy transformation.

Electrification

Electrification represents an opportunity to reduce carbon emissions in the transportation, heating, and industrial sectors. In the Nordic countries, electricity generation is already fossil-free, while on the Continent fossil fuels need to be phased out from the electricity system in parallel with further electrification. The key driver for electrification is a combination of cost efficiency and sustainability. Electricity has an increasingly important role to play in society in the future, and suppliers of renewable electricity and heat play a key role in the work on combating climate change. We believe that widespread electrification in transport and industry can increase electricity demand by up to 100 TWh per year by 2030 in our core markets alone.

More decentralised energy solutions

The future energy system will consist both of central and decentralised energy solutions. Cost reductions and increased functionality are driving this shift, which is creating opportunities for new competitors and business models along various parts of the energy value chain. New, flexible technologies, such as batteries, are entering the market, and market shares for conventional, central generation are decreasing. Clear regional differences can be observed in what kind of decentralised solutions are adopted by the market. Solar photovoltaic has already become an established energy source in Germany and accounts for approximately 7% of net electricity generation. In Sweden solar is in an early stage of development with only 0.1% of net electricity production, however, the market is growing by 60% to 70% per year. Heat pumps, however, are a mature decentralised technology in Sweden that has been adopted by more than 60% of single family houses. Overall, decentralised solutions are likely to continue to rapidly gain market share.

Vattenfall's climate coach gives expert advice on what you can do to achieve a climate-smarter lifestyle. Read more at: corporate.vattenfall.se/hallbarhet/klimatcoach/.

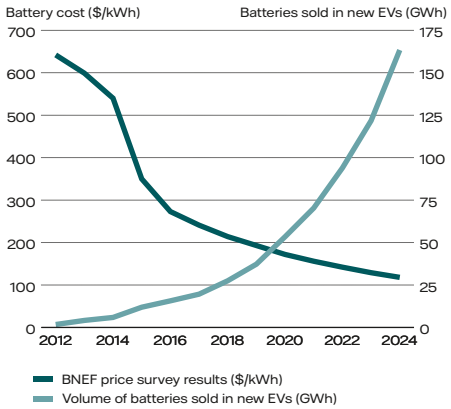
Digitalisation

The entire energy value chain is becoming digitalised. Energy consumption is becoming increasingly smart, and new technologies are enabling a steadily increasing amount of consumption to be steered to times when energy supply is high and the price is low. Efficient operation of energy utilities will require better data on the status of various appliances, sophisticated forecasting techniques and more powerful and complex algorithms for turning data into intelligence and control. Customers expect instant information and feedback via smart phones or the internet, and customer service and interaction will move from call centres to sophisticated applications and internet-based solutions. Digitalisation and control of advanced data analytics are a prerequisite for all of this.

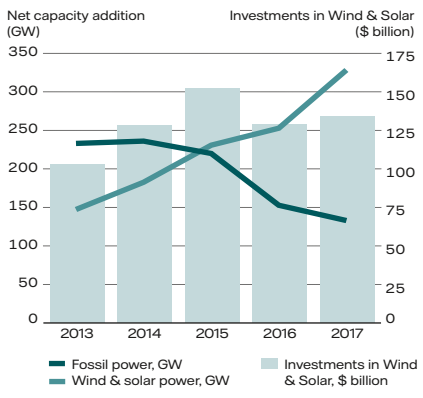
New ways of working are driving value and growth

Continued pressure on margins is expected in the coming decade. Electricity prices will continue to be volatile and will remain at low average levels for a long time, and competition will increase from non-utility actors. Companies expected to succeed in this environment will be strong in digitalisation, risk management, and operational excellence. Lean players will be able to grow and consolidate. Innovative companies will take advantage of the changing energy landscape. In summary, new ways of working are required for value creation and growth.

Global battery cost in relation to EV battery growth[1]



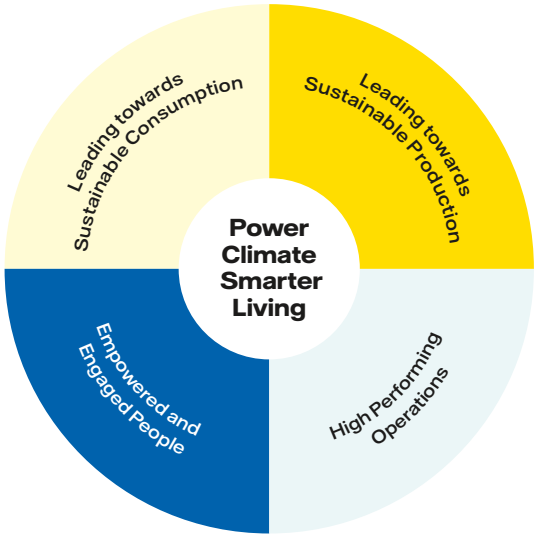
Global trends in renewable investments and capacity growth[1]



[1] Source: Bloomberg New Energy Finance (BNEF).

Strategy

Vattenfall's goal is to offer all customers climate-smart energy and enable a life free from fossil fuels within one generation.



The world urgently needs to find new and alternative solutions for a climate-smart and clean energy supply for businesses, cities and homes. And although this transformation is already in progress, the pace of change must be accelerated. The solution is energy that is 100% free from fossil fuel and that powers all aspects of people's lives, including heating, transportation and industry. Vattenfall is committed to accelerating and driving this transition through further electrification and greater reliance on renewable energy. Accordingly, we have defined our purpose – to Power Climate Smarter Living. This embodies the shift to a fossil-free society, starting with ourselves and extending to actors across our value chain.

The strategy starts with our purpose
Our strategy and our purpose reflect the UN's Agenda 2030, in particular the Sustainable Development Goals for Affordable and clean energy (#7), Industry, innovation and infrastructure (#9), Sustainable cities and communities (#11), Responsible consumption and production (#12), Climate action (#13), and Partnerships for the goals (#17).

The UN's 17 Global Sustainable Development Goals

Our strategic objectives

Vattenfall's strategy emanates from our purpose and the five major market trends that we have identified along with the external requirements that we have on our operations. We put strong focus on our customers, integration of sustainability targets, and the continuing development of decentralised energy solutions. Strict cost control and a stable capital structure are also prerequisities for success.

Vattenfall's strategy is based on four strategic objectives:

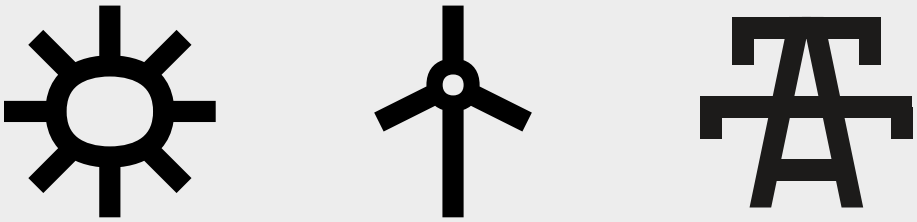
- **Leading towards Sustainable Consumption,** with focus on increasing customer centricity, building a strong position as a provider of decentralised energy solutions and promoting electrification and a climate-smart society
- **Leading towards Sustainable Production,** which entails growing in renewables and implementing our CO_2 roadmap to become fossil free within one generation
- Having **High Performing Operations,** which encompasses improving operational efficiency at our plants, in our networks and in our customer service centres through increased digitalisation and by taking social and environmental responsibility throughout the value chain
- Having **Empowered and Engaged People,** which means being an attractive employer, promoting an engaging culture, and securing the right competence that reflects the diversity of society as a whole

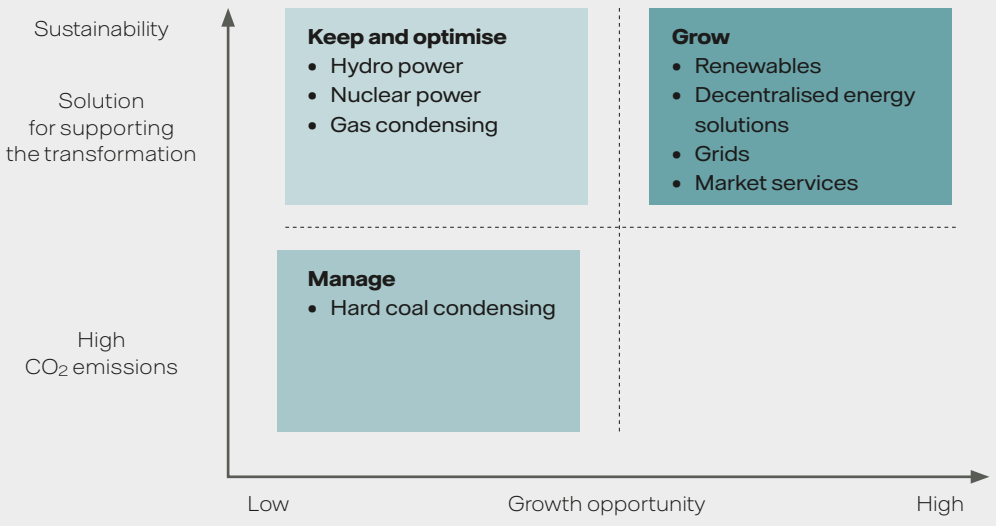
Achieving our strategic objectives will require that we accelerate our work in a number of important areas. Maintaining a competitive edge and financial strength are key prerequisites in this work. We will need to meet customers' needs faster, increase our efficiency ambitions, and raise the bar with respect to sustainability.

Transforming our portfolio

The energy market is currently undergoing a shift towards a more climate-neutral system with a high share of renewable energy, more engaged customers and a higher share of decentralised energy generation. Ongoing technological development is contributing to an energy system that combines central with decentralised generation, is cost-effective and fossil-free, and an increasingly electrified society in which electricity – often renewable – is replacing fossil fuels for heating, transportation, and industry. With the customer in focus, we are investing in areas where we have or can build a competitive advantage and develop a diversified and sustainable portfolio. We will continue to operate along the entire value chain in the energy system by optimally developing, operating and managing assets, and by interacting more with our customers. Our geographical focus is Northwest Europe, where we have built up a strong position with long-term potential. In tandem with this shift in the energy market, Vattenfall is transforming its business portfolio toward sustainabile technologies and climate-smart energy solutions. We see attractive growth opportunities in areas such as renewable power generation, decentralised solutions, power and heat grids, and market services. In addition, Vattenfall is operating and optimising businesses and technologies that support the climate goals and provide financial stability, including hydro and nuclear power. Our hard coal–based operations will either be phased out or converted to biomass as part of the transition to a fossil-free future.

Vattenfall's portfolio in transition





Vattenfall is engaged in a partnership with Cementa to reduce CO_2 emissions in cement production.

Key actions for achieving the strategic objectives

Following is an account of seven of the most important actions we have identified for achieving our strategic objectives:

1. Further improve the customer's digital experience and digital solutions – We are expanding our digital capabilities and developing new communication solutions for our customers. This involves providing improved services for customers in our distribution business through a new outage management concept along with automated processes between customer service and operations. We are also forging closer contacts with our heat customers to help them actively manage their use and increase energy efficiency. Altogether this requires greater customer focus and that we follow up, analyse and optimise the customer's experience using the Net Promoter Score (NPS) as a benchmark.

2. Become the leader in providing solutions for electrification of industrial processes through partnerships – Vattenfall is investing in an R&D programme and has entered into partnerships with major industrial players in Sweden to drive this development forward. Projects in progress to date are focusing on CO_2-free steel production (SSAB/LKAB), reduced CO_2 emissions in cement production (Cementa), and reduced emissions from refineries for the production of biodiesel (Preem). The potential reduction in carbon footprint from electrification in these three areas corresponds to 15%–20% of Sweden's total CO_2 emissions. With the knowledge gained from these partnerships, Vattenfall will continue to explore the potential for collaboration also in other sectors and markets.

3. Allocate resources and capital to achieve a leading position in e-mobility charging solutions – We are helping our customers lower their transport-related emissions by providing e-vehicle charging infrastructure. Vattenfall will play a central role in the transition to electric road transport by being one of the leaders in Europe's e-mobility charging market.

4. Phase out coal from our production and become fossil free within one generation – We are actively phasing out coal from our heating portfolio and aim to complete this transition by 2030, at the same time that we are growing our heat business with more customers. We are doing this through Third Party Integration (TPI), where we are sourcing a greater amount of heat from third parties, building combined heat and power plants that can be run on natural gas or renewable gas, and replacing fossil fuels in CHP plants with biomass (for more details see page 49).

5. Set a level of ambition for renewable production for 2025 and devise a plan to achieve our ambition in a highly competitive, low-subsidy market – The cost of renewable power generation has fallen dramatically. During the past year we saw auction results with zero subsidies, which means that we are approaching a market environment where renewable production is competitive without subsidies. This is great news for the world and efforts to mitigate climate change, and Vattenfall is committed to be among the leaders driving this development. However, maintaining continued growth in solar and wind power generation will be a challenge as the market is becoming fiercely competitive, and succeeding in this market will require innovation, sustainability and highly efficient operation.

6. Further integrate CSR aspects in our evaluations of suppliers and devise an overall action plan for human rights – Together with our suppliers, we continue to map risks in the value chain including social, environmental, and strategic aspects. As persistent demands for cost efficiency drive us to source in new markets, we must ensure we clearly understand the risks we face in order to manage them effectively and responsibly.

Further, our aim is to integrate human rights impact assessments into supply chain due diligence processes. Ensuring that human rights are adequately assessed will help Vattenfall reduce its risk of contributing directly or indirectly to human rights violations and will give us the opportunity to develop action plans with our suppliers to avoid, mitigate and remedy their negative impact on people while securing our supply and increasing trust.

7. Recruit and retain the right competencies with focus on diversity and leadership – Securing key competencies and fostering employee engagement are crucial for success in our business. We will increase digital capabilities, build up entirely new competencies, and take the next step to accelerate the digital transformation through agile work processes. We will also redesign our leadership development programmes to include new leadership aspects such as transformational leadership, change management, innovation, and digitalisation.

Actions for reducing the carbon footprint across the entire value chain

Climate change is one of the most urgent challenges facing the world today. We acknowledge the role our fossil-based assets play in contributing to the problem, and we take our responsibility to act seriously, which is why we have committed to being fossilfree within a generation. For us this means that we not only eliminate fossil fuels from our own operations, but that we also address emissions in other parts of the value chain and work together with suppliers as well as customers to reduce their environmental impact.

Our own emissions (~23 Mtonnes per year[1]) – fossil free within one generation
Vattenfall has a roadmap in place to reduce its CO_2 emissions by 75% by 2030 and be fossil free within one generation. A first step is to strive for best-in-class operational performance for all of our plants, regardless of their fuel source, in order to maximise production efficiency and cash flows. In addition, by 2030 we will phase out coal from our heating portfolio while steadily growing our heat business with new customers. Plans for achieving this are being developed in close cooperation with our city partners in Germany, the Netherlands and Sweden. We will achieve this sharp reduction in emissions through a number of measures, including:

- Third Party Integration (TPI): augmenting the district heating network with surplus heat from industrial facilities and commercial operations owned by third parties
- Efficient gas plants: build combined heat and power (CHP) gas plants that can be run on natural gas (during a transition period) or renewable gas
- Conversion to biomass
- Digitalising operations and gathering data about customers' consumption to optimise heat production and reduce fuel consumption

Starting in 2030, the remaining emissions from heating will be addressed, and natural gas will be phased out as a fuel. This will be possible through a greater supply of renewable electricity, which can also be used for heating. We are currently developing and testing various technologies for this, such as power-to-heat, which entails converting electricity to heat using electric boilers combined with hot water storage, synthetic gas produced by electricity, and heat pumps. In 2017 we began construction of a power-to-heat

plant in Berlin that will use electricity to produce heat, allowing for the decommissioning of a coal-fired power plant in 2019/20.

Vattenfall also plans to phase out its fossil-based condensing portfolio and has a roadmap in place to achieve this. An example of this is the agreement signed in 2017 to conduct a pilot project aimed at replacing natural gas with hydrogen in part of our Magnum plant in Holland.

Supplier emissions (~5 Mtonnes per year[1])
Vattenfall is also engaging in efforts to help its suppliers reduce their greenhouse gas emissions, primarily associated with coal mining, gas production and nuclear fuel, as well as in the supply of components and maintenance. With the support of emissions data from Life Cycle Assessments and ongoing dialogues with suppliers, we are making a concerted effort to reduce these emissions. We are targeting strategic suppliers and requiring information on management of climate aspects while looking for reduction opportunities in connection with new contracts. We support joint initiatives to reduce emissions and are setting clear requirements for suppliers and contractors to reduce their environmental impacts and set targets for reducing their carbon footprints.

Customer emissions (~15 Mtonnes per year[1])
Vattenfall's gas customers also account for a significant amount of greenhouse gas emissions. We are working to make it easy and affordable for customers to adopt climate-smarter living habits. This means that we are continuously developing our portfolio of decentralised energy solutions like solar panels, heat pumps, and batteries, and we are making it easier for customers to make informed, economically beneficial, and climate-smart decisions for their heating needs.

In addition to offering fossil-free heating alternatives to our gas customers, we are innovating other ways in which we can help customers reduce their carbon footprints. Electrification offers great potential to reduce emissions from both heavy industry and transport, provided it is done using fossil-free energy. We have formed a number of partnerships to drive this positive development, such as our collaboration with the fuel company Preem to develop biofuels based on a by-product from the pulp and paper industry and fossil-free hydrogen gas.

In the transportation sector we continue to invest and develop our e-mobility offerings in all of our markets at the same time that we are steadily connecting and expanding the number of charging points in the InCharge e-vehicle charging network. We continue to dedicate resources to strategic partnerships and are scaling up solutions based on electrification of transportation and industry. This is crucial for achieving the national climate goals in these two sectors[2].

[1] See page 167 for more information.
[2] See Preem case study on page 57 and e-mobility case study on page 53.

Investment plan

Vattenfall continues to invest heavily in growth within renewable production and electricity grids, enabled mainly by successful efforts to reduce costs and achieve a stable debt position, alongside improved conditions for our Swedish nuclear and hydro power operations.

Total investments in 2018 and 2019 are expected to amount to SEK 46 billion, with growth investments accounting for 47% (SEK 22 billion). The investment strategy reflects our commitment to drive the transition to a fossil-free society. This is also visible in the investments to transform our existing assets, with planned maintenance and replacement investments of SEK 24 billion in 2018 and 2019.

We are investing in both central solutions – like a biomass-fired heat plant in Uppsala – and decentralised solutions – like solar and e-mobility – that will enable both us and our customers to reduce our carbon footprint.

Growth in our renewable capacity is well on track, with investments in 2018 and 2019 focusing on wind power (SEK 13 billion) and solar energy (SEK 1 billion). Construction of the Horns Rev 3 (407 MW) offshore wind farm in Denmark has started. In addition, we are re-powering the Wieringmeer wind farm (180 MW) and plan to install another 32 turbines nearby (118 MW).

Vattenfall is diversifying its renewable energy portfolio by increasing investments in solar power.

We are modernising the heat portfolio to be fossil free within one generation. This entails converting a 120 MWth heat plant in Uppsala to biomass, investing in two highly efficient gas-fired CHP plants in Berlin (in total 560 MWel, 452 MWth), and building the largest power-to-heat storage plant in Germany (120 MWth).

We continue to invest in the infrastructure of the new energy landscape by improving the quality and flexibility of our electricity networks in Sweden and Berlin (SEK 12 billion). This includes restructuring our pumped hydro storage in Germany (2,500 MW) to ensure these assets can continue to balance intermittent supply from wind and solar in a profitable manner.

Further, we are securing the safe operation of our Swedish nuclear and hydro power plants (SEK 6 billion) by completing the nuclear safety measures at Ringhals and Forsmark by 2020, and upgrading our hydro power plants to maintain availability and dam safety.

Vattenfall's investment plan 2018-2019

Total investments per type

- Growth investments, 22
- Maintenance investments, 16
- Replacement investments, 8

Growth investments per technology

- Wind power, 13
- Distribution, 3
- Heat grids, 2
- Solar energy, 1
- New businesses,[1] 3

Growth investments per country

- Denmark, 8
- Germany, 4
- Netherlands, 3
- Sweden, 2
- UK, 2
- Other (Group, IT, unallocated), 3

[1] Mainly decentralised solutions, energy storage and e-mobility.

Vattenfall continues to invest in both onshore and offshore wind power as well as in solar power in order to meet its renewable energy target.

Major investment projects – decided on and in progress

Project	Country	Type	Capacity	Estimated CO_2 reduction[1] (ktonnes)	Vattenfall's interest	Completion	Total investment	Total investment, SEK million[2]
Aberdeen Bay	United Kingdom	Wind, offshore	93 MW	110	100%	2018	335 MGBP	3,710
Horns Rev 3	Denmark	Wind, offshore	407 MW	440	100%	2019	7,500 MDKK	9,900
Slufterdam	Netherlands	Wind, onshore	29 MW	35	100%	2019	35 MEUR	345
Wieringermeer	Netherlands	Wind, onshore	180 MW	300	100%	2020	215 MEUR	2,115
Lichterfelde CHP	Germany	Gas	300 MWel 222 MWth	170	100%	2018	390 MEUR	3,835
Marzahn CHP	Germany	Gas	260 MWel 230 MWth	350	100%	2020	305 MEUR	3,000
Replacement Reuter C	Germany	Gas/electric	240 MWth	170	100%	2019	95 MEUR	935
Uppsala HVC Bio Conversion	Sweden	Biomass	120 MWth	160	100%	2019	35 MEUR	345

1 Estimated CO_2 reductions are based on expected annual CO_2 reductions from the respective projects in Vattenfall's portfolio or potential reductions outside of Vattenfall. For wind projects the reductions are based on a comparison of expected generation and average CO_2 emissions from the grid, thus representing expected CO_2 reductions in the grid. For heat projects the redictopms are expressed as the expected CO_2 reduction in Vattenfall's portfolio.

2 Year-end exchange rate as per 31 December 2017.

Operating segment overview

Operating segments

We report our operations broken down into the Group's operating segments: Customers & Solutions, Power Generation, Wind, Heat, and Distribution. The operating segments reflect our Business Area organisational structure except for the Power Generation segment, which is divided into the Generation and Markets Business Areas.

Customers & Solutions
Number of employees[1]
3,067

Power Generation
Number of employees[1]
7,413

Wind
Number of employees[1]
773

Heat
Number of employees[1]
3,771

Distribution
Number of employees[1]
2,126

Other
Number of employees[1,2]
2,891

1 Full-time equivalents.
2 Pertains mainly to Staff Functions and Shared Service Centres.

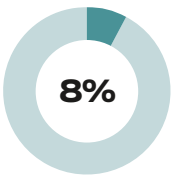
Customers & Solutions

Responsible for sales of electricity, gas and energy services in all of Vattenfall's markets

- Leading position in Sweden with more than 900,000 retail electricity customers
- Leading position in Berlin and Hamburg as an electricity supplier and are one of the leaders in gas
- Market-leading position in electricity and gas in the retail segment in the Netherlands and also one of the leaders in sales to the business segment
- Entered the British retail market with sales of gas and electricity to B2C customers

External net sales, SEK million
67,510

Share of underlying operating profit



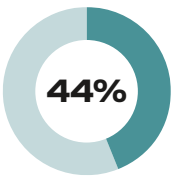
Power Generation

Includes Vattenfall's hydro and nuclear power operations, maintenance services business, and optimisation and trading operations

- Operate a portfolio with 7.3 GW nuclear capacity and 11.6 GW hydro power capacity across Sweden, Finland and Germany
- One of Europe's largest providers of fossil-free electricity, with 35.6 TWh from hydro power and 51.9 TWh from nuclear power
- Took the decision to invest in independent core cooling in Ringhals reactors 3 and 4 to enable operation into the 2040s

External net sales, SEK million
43,648

Share of underlying operating profit



Wind

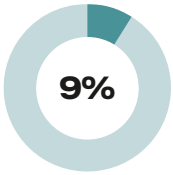
Responsible for development and operation of Vattenfall's wind farms as well as large-scale and decentralised solar power and batteries

- One of the biggest producers of offshore wind power in the world
- One of the biggest producers of onshore wind power in Denmark and the Netherlands
- 354 MW of new renewable capacity installed in 2017
- Began construction of three battery projects with total capacity of 27 MW

External net sales, SEK million

6,669

Share of underlying operating profit



Heat

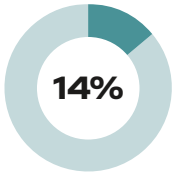
Responsible for Vattenfall's heat operations including sales, and gas- and coal-fired condensing

- One of Europe's largest producers and distributors of heat with more than 2 million end customers
- Supporting the City of Berlin's goal to phase out coal by 2030 by replacing the lignite-fired combined heat and power plant in Klingenberg with a refurbished gas-fired unit

External net sales, SEK million

14,890

Share of underlying operating profit



Distribution

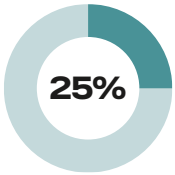
Responsible for Vattenfall's electricity distribution operations in Sweden and in Berlin, Germany

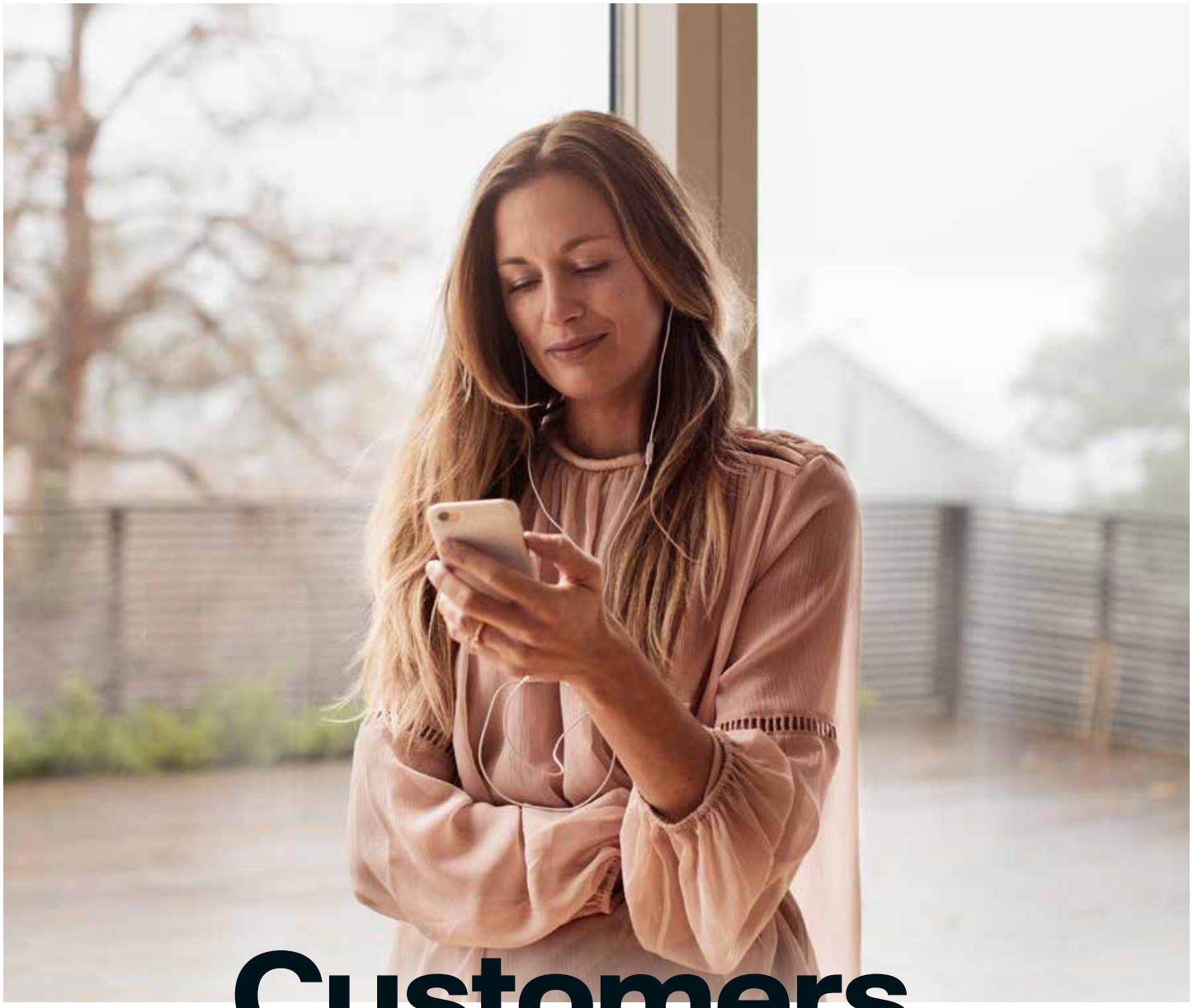
- Leading owner and operator of electricity distribution networks in Sweden
- Approximately 3.3 million business and household customers in Sweden and in Berlin, Germany
- Granted a licence to begin operating electricity networks in the UK

External net sales, SEK million

16,904

Share of underlying operating profit





Customers & Solutions

Operations

Vattenfall's Customers & Solutions business supplies electricity, gas and energy solutions to retail and business customers, with 8.7 million customer contracts EU-wide. We have a market-leading position in the retail segment in Sweden (with over 900,000 electricity contracts) and in the Netherlands (approximately 3.7 million gas and electricity contracts), and are a leader in the business segment in both markets. In Germany we supply gas and electricity to retail customers (3.5 million contracts) as well as to property companies and certain other business segments. In Berlin and Hamburg we are a market leader in electricity retail and in gas retail. In France we sell gas and electricity in selected business segments. In Finland, Denmark and the UK we are a fast-growing challenger. We offer energy solutions in most of our markets, including e-mobility charging, decentralised power generation, and heating solutions. In the Netherlands we are one of the largest providers of energy solutions through our subsidiary Feenstra, with over 800,000 customers.

Key data

	2017	2016
Net sales (SEK million)	69,061	69,230
External net sales (SEK million)	67,510	67,862
Underlying operating profit[1] (SEK million)	1,913	1,830
Sales of electricity (TWh)	84.0	88.9
– of which, private customers	27.1	27.0
– of which, resellers	5.1	5.5
– of which, business customers	51.8	56.4
Sales of gas (TWh)	55.3	53.1
Net Promoter Score (NPS) relative[2]	+2	+7

[1] Underlying operating profit is defined as operating profit excluding items affecting comparability.
[2] NPS was reported for the first time in 2016. For definition, see page 10.

Strategy

Our ambition is to be a leading customer-centric company, supplying a wide range of energy solutions and services to private and business customers.

Our strategic objectives are:

- **Power smarter.** We are optimising the profitability of our commodity sales business by continuing to grow our customer base while reducing the cost to serve. We offer a diversified energy portfolio ranging from renewable energy to products with environmental product declarations (EPD)
- **Climate smarter.** We aspire to help our customers live a climate-smart life by minimising their carbon footprint. Based on our customers' individual energy needs, we offer product and service solutions for sustainable and efficient energy consumption. We focus on areas like smart data-based solutions, decentralised energy solutions such as rooftop PV, and new customer interaction models. We are aiming for a top-3 position in e-mobility charging solutions in Northwest Europe
- **Customer smarter.** We are also striving to optimise the customer experience by accelerating digitalisation and offering bundled, integrated and climate-smarter solutions. We want our customers to enthusiastically promote us in order to maintain and grow our business

Developments in 2017

The increased competition in our markets can be seen by the entry of new players to the electricity retail market, such as the largest railway company in Germany, and by regulatory interventions, such as forced conversions in Sweden from electricity default tariffs to other tariffs.

Total sales of electricity decreased slightly compared with 2016, while sales of gas inched upward. The underlying operating profit increased compared with 2016, mainly owing to lower sales and administrative costs.

Our retail customer base grew by nearly 290,000 contracts during the year. The most significant changes were the growth by 120,000 contracts in Germany and our entry to the UK market through the acquisition of a fast-growing electricity and gas supplier with 195,000 contracts at year-end.

We achieved improvements of our absolute Net Promoter Score (NPS) in several countries and markets. Overall we are a step ahead of our competitors as evidenced by our positive NPS relative score, although the lead is smaller than in 2016.

In 2017 we continued our work on offering smart energy solutions:

- We have grown our e-mobility activities in the Netherlands, Germany and Sweden and now operate 8,400 charging points. In Sweden, the newly launched partnership InCharge has become a leading e-mobility solution provider, offering easy and accessible charging with our network and operator solution. During 2017 we installed eight charging streets and a total of 60 charging points in Stockholm Municipality, in addition to ten fast chargers installed elsewhere in Sweden
- We signed contracts with several major Dutch housing corporations to increase energy efficiency and to install photovoltaic panels on a larger number of residential buildings
- We introduced a white label platform[3] for municipal utilities in Germany for the sale of photovoltaic panels and batteries. We now offer PV solutions to customers in Sweden, Germany and the Netherlands
- We signed a partnership with a start-up to offer state-of-the-art smart home technologies to customers in Germany
- Through the acquisition of a stake in BrainHeart Energy, a major supplier of decentralised energy in Sweden, we can now offer climate-smart geothermal heating and cooling solutions to customers in the Swedish market

[3] A white label platform is not branded as a Vattenfall service, but is instead branded individually, such as by the German municipal utilities that use the platform.

Planned activities

We are promoting customer centricity by focusing on customers' experiences and acting on customer feedback. In the Netherlands we are developing a digital platform that will enable a new level of interaction with our private customers. In addition, we plan to accelerate the digital transformation by implementing a new billing solution in Germany that will enable faster billing and higher sales volumes of non-commodity energy solutions. Enhanced data-based services, such as home energy management, will be available with our new Vattenfall analytics platform. Safeguarding the privacy of digital customer data will be paramount.

We will scale our portfolio of solutions by establishing sales channels that support our growth targets coupled with automated low-cost operations. We will also scale Powerpeers in the Netherlands and Alltid.se in Sweden. In Germany the mobile app Enpure will be scaled and extended to gas contracts.

We continue to grow our customer base in our markets and are working on retention initiatives. We will also act upon acquisition opportunities when they arise. In Germany we will optimise contract management during home moving processes for our residential customers and further strengthen our position in Berlin and Hamburg. We will reduce cost to serve, for example by completing the outsourcing of customer service in Germany in 2018 as planned.

We will continue to grow in e-mobility. In 2016 there were about 200,000 hybrid or fully electric vehicles registered in our core markets. By 2030 the number of e-vehicles may need to exceed 10 million to reach the 2030 decarbonisation targets for the transportation sector. A comprehensive policy framework, including tighter emissions targets for new cars, would stimulate the desired development. To capitalise on this opportunity and support the transition, we aim to extend our services to all our current customer markets, capturing significant scale benefits and enhancing value for our customers and key partners, such as leasing companies and car makers.

We will continue to meet and exceed our customers' sustainability expectations by promoting fossil-free energy options to all our customers, enabling them to switch to electric cars, and by taking sustainability into account in our procurement and engaging with internal and external partners to share and learn.

Produce your own climate-smart electricity and heat

Vattenfall InHouse offers customised energy services to property owners and tenant-owned housing cooperatives, including electricity, heating and e-vehicle charging together with system optimisation. Vattenfall installs and maintains the equipment. The subscribers pay a monthly fee based on consumption.

Haus Strom – Vattenfall installs solar panels on the rooftops of apartment buildings, and the electricity generated goes directly to the building tenants without involving the public grid. If more electricity is needed, it is drawn from micro-CHP units that Vattenfall operates in the buildings. If the solar panels generate more electricity than is needed, the surplus is sold to the public power grid.

VIEWS ON VATTENFALL

Smart decentralised solutions

Many property owners and tenant-owner associations are becoming actively engaged in sustainability and are showing interest in both producing and storing their own energy. Vattenfall is making this possible by offering climate-smart solutions and expertise to create reliable and affordable decentralised energy systems in our core markets.

In September 2017, Vattenfall launched the InHouse concept in Sweden, where large property owners and tenant-owned housing cooperatives can subscribe to customised sustainable solutions for electricity (solar power), heat, and electric car charging, together with system optimisation.

Partnering solutions

"Local energy solutions are becoming increasingly climate-smart but at the same time more complex, requiring property owners to acquire new competencies and resources. We can step in as a partner and offer our services to install and optimise systems, and make sure everything works seamlessly. It's a solution based on simplicity and reliability, and allows property owners to concentrate on managing their properties as such," says Mattias Tingvall, who works with business development in Vattenfall's strategy department.

Interest in Vattenfall InHouse has been great, and Tingvall sees future possibilities apart from growing the market in a strictly geographical sense. "The concept is also suitable for single-family houses where the owners are interested in, for example, solar power and e-vehicle charging solutions," says Tingvall.

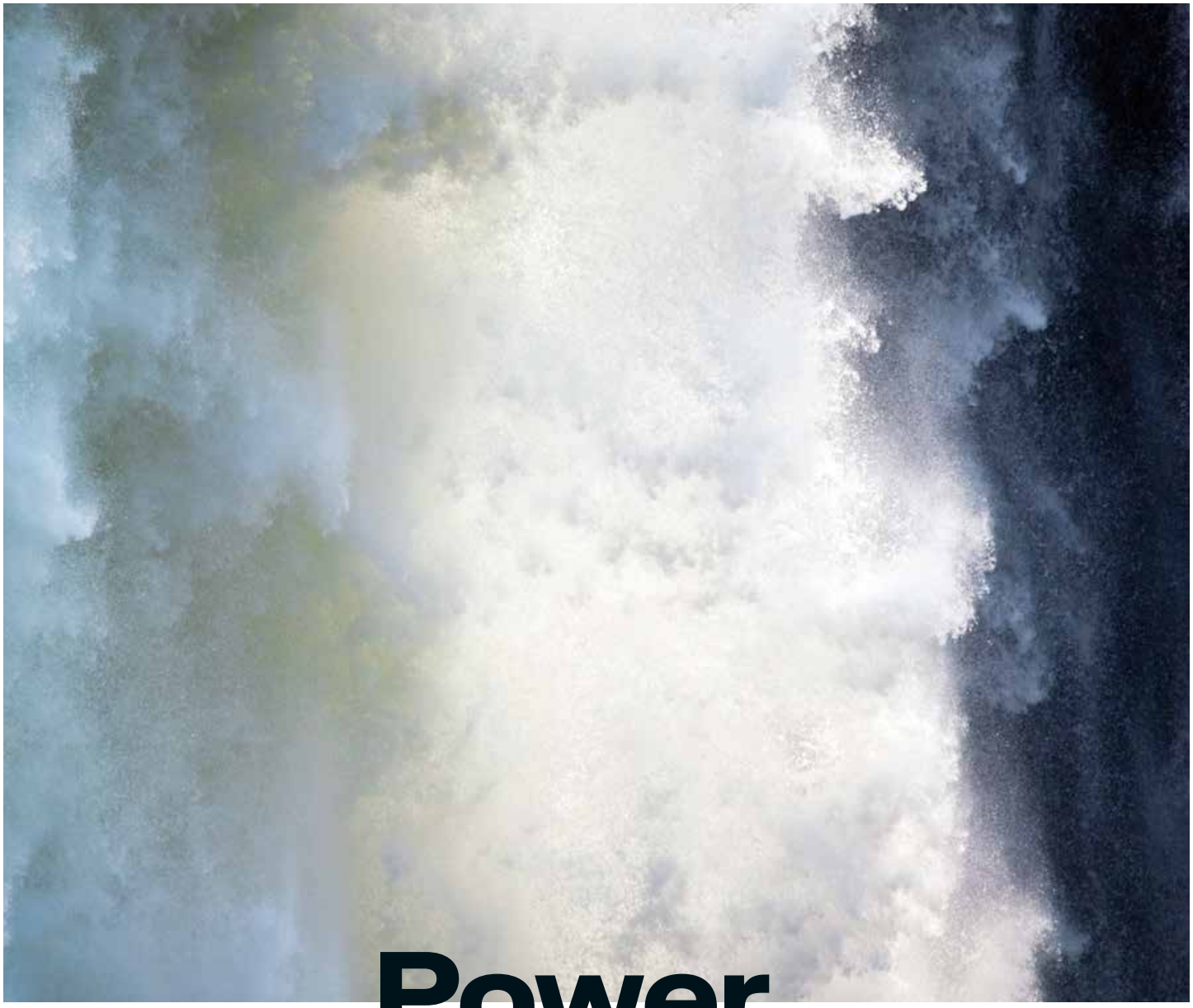
Lennart Jonsson is chairman of a tenant-owned housing cooperative that recently signed a contract with Vattenfall InHouse. "We wanted a tailor-made energy solution for our buildings and 162 apartments," he says. "The result was a combination of geothermal heat pumps, district heating and solar panels. In addition to getting renewable energy, we will reduce our electricity and heating costs by SEK 100,000 per year."

Solar power for tenants

Vattenfall is developing similar decentralised energy solutions in Germany. In our Haus Strom pilot project, which is based on solar panel systems, we offer tenants in Berlin and Hamburg the opportunity to get solar power directly into their wall sockets from their own rooftops without use of the public grid.

"This solution became possible in July 2017 due to legal changes, and since then we have experienced high interest," says Hanno Balzer, responsible for the Haus Strom concept. "We signed our first contract in early November and have already identified about 200 roofs in Berlin and Hamburg that are suitable for an installation. The plan is to install 100–120 systems a year."

The solar panels have been tested in three different pilot projects in Berlin. Manfred Schäffler participated in one of these. "It's great getting solar electricity from your own roof. And it's not only a financial advantage. Vattenfall is also making a strong contribution to improving the environment in Berlin," he says.



Power Generation

Operations

Vattenfall's Power Generation segment is one of the largest providers of fossil-free electricity in Europe. Safe, reliable and efficient production by hydro and weather-independent nuclear power plants provides a backbone of flexible baseload for northern Europe. In 2017 Vattenfall Power Generation produced a total of 87.5 TWh of electricity, corresponding to more than 50% of Sweden's total electric power generation. Optimisation and distribution of reliable and flexible power to the market is provided by the Markets Business Area, which handles hedging, sourcing, and trading to ensure security of supply to Vattenfall's customers. Our service business develops and delivers maintenance services to both internal and external customers in the Nordic energy market.

Key data

	2017	2016
Net sales (SEK million)	94,417	98,997
External net sales (SEK million)	43,648	49,276
Underlying operating profit[1] (SEK million)	10,820	11,410
Electricity generation (TWh)[2]	87.5	81.7
Sales of electricity (TWh)[2]	23.7	33.2
– of which, resellers[2]	20.5	31.6
– of which, business customers[2]	3.2	1.6

[1] Underlying operating profit is defined as operating profit excluding items affecting comparability.
[2] Values have been adjusted compared with information previously presented in Vattenfall's 2016 Annual and Sustainability Report.

Strategy

The Swedish energy agreement reached in 2016 clears the way for our fossil-free and cost-effective nuclear power to play a key role in northern Europe during the transition to a renewable electricity system. This augments our hydro power plants in Sweden and Germany, which already play a key role as a large-scale, flexible source of renewable energy that can balance the influx of intermittent and weather dependent solar and wind power. Apart from the climate benefits of our assets, we must focus on achieving best-in-class operations and cost efficiency to be competitive in a market with low electricity prices and increasing competition.

We have identified the following focus areas for Power Generation:

- Provide safe, reliable, and efficient hydro and nuclear power generation with low environmental impact. The inherent flexibility of our production assets serves as Europe's "northern battery"
- Provide baseload power that enables the phase-out of fossil fuels from the transportation sector and decarbonisation of Sweden's industrial processes
- Perform safe and efficient dismantling of decommissioned nuclear power plants and lead the development of systems and facilities for management of spent nuclear fuel and radioactive waste
- Develop smart services in maintenance and development of the Nordic power grids, which need to be adapted to higher future power demand
- Analyse data to identify customer trends and needs at an early stage and develop profitable data-driven customer solutions

Developments in 2017

Electricity prices recovered slightly in 2017 in a market situation that has been challenging for a number of years. Net sales decreased in 2017, mainly due to unrealised changes in the fair value of commodity derivatives. The financial conditions have improved, as the Swedish energy policy agreement from 2016 has resulted in lower property taxes for Swedish hydro power plants and a reduction in the nuclear capacity tax by 90%. Further reductions in the property tax on hydro power plants are expected in the coming years, in accordance with the energy policy agreement.

Hydro power

Our total installed Nordic hydro power capacity of 8,800 MW generated 33 (32) TWh of electricity in 2017. A rainy summer and autumn secured our Nordic reservoir levels to 65% (52%) of capacity by year-end 2017. The flexibility and regulating capacity of hydro power are becoming increasingly important as the share of weather-dependent energy sources grows. Swedish hydro power generation has already reached a low cost level, allowing us to continue investing in refurbishments and upgrades to increase availability, efficiency, and power generation in parallel with work on improving dam safety.

To support the funding of the transformation to modern environmental conditions, nine of Sweden's largest hydro power companies have drawn up plans to establish a funding body, called Vattenkraftens Miljöfond AB. The fund will be open to all hydro power operators to apply for compensation for costs for environmental mitigation measures and associated production losses in their work on achieving modern, environmental conditions according to a national legal review plan.

In 2017 Vattenfall held discussions with authorities and stakeholders about projects aimed at increasing biodiversity in the Luleälven and Dalälven rivers. Through inventories and analyses the projects will lead to greater knowledge about the rivers' biodiversity, fish populations and adjacent habitats. In conjunction with this we have built a research centre in Älvkarleby to analyse, study and understand how fish behave in natural waters (read more on page 168).

In Germany we conducted a major review of our hydro power operations, consisting mainly pumped storage power plants, and drew up plans on how to adequately adapt the operations to support and provide stability in a market with an increasing share of weather dependent power generation.

Nuclear power

Our nuclear power generation in 2017 amounted to 51.9 TWh (46.9). Average availability was 84.8% (75.4%).

In September and October 2017 the Swedish environmental court held hearings on the Swedish Nuclear Fuel and Waste Management Company's (SKB) application for a licence to build an encapsulation facility in Oskarshamn and a final repository for spent nuclear fuel in Forsmark, in Östhammar Municipality. Read more on page 38.

In November 2017 the decision was taken to invest in independent core cooling at Ringhals reactors 3 and 4. A similar investment decision for the Forsmark reactors was made in 2016. This is a safety upgrade that was required by the Swedish Radiation Safety Authority to allow continued operation after 2020. Thus all of the mandated measures arising in response to the Fukushima accident have been finalised or started.

Decommissioning work in Germany following the government's decision to exit nuclear power continues. Read more on page 39.

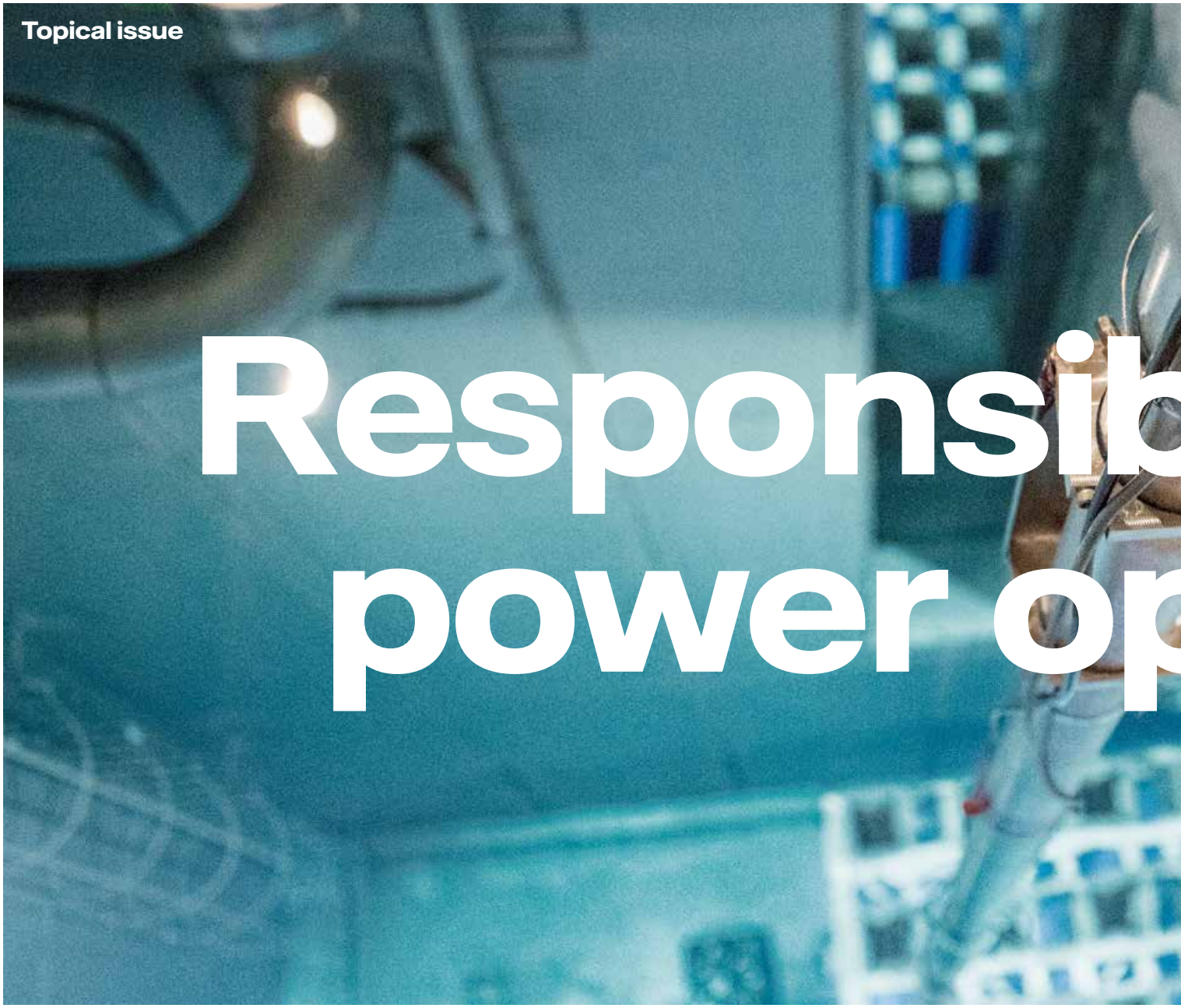
Planned activities

In spring 2018 Sweden's Riksdag will vote on a new hydro power law designed to balance environmental impact mitigation and energy interests. Enactment of the law is expected to have a limited impact (up to ~1.5 TWh per year) on hydro power generation.

The investment plan for our Swedish hydro power assets calls for annual expenditures of SEK 1.0–1.3 billion for dam improvements and plant refurbishment in the coming years.

In addition to the investments in independent core cooling for the Swedish reactors, plans have been drawn up for significant investments in the nuclear power plants, particularly in electric and control equipment and safety-related equipment, such as emergency diesel generators, to ensure availability until the 2040s.

All parts of the Power Generation segment are focused on retaining and developing key competencies as well as on digitalisation to adapt to developments in society. The Markets Business Area is evaluating market opportunities in which it can create the most value by meeting customers' growing interest in wholesale market services related to decentralised generation, storage, and demand response.



Responsib power op

Cost control and efficiency improvements in parallel with safe decommissioning and dismantling

The market conditions for nuclear power vary greatly between Sweden and Germany, the countries in which Vattenfall has nuclear power operations. We respect and follow all regulations and political decisions in both markets, and are developing strategies and action plans accordingly.

Sweden

Nuclear power plays a critical role in Sweden's energy landscape and will continue to be a major contributor of CO_2-free electricity during the transition to a 100% renewable electricity system.

Operations

To enable us to meet future power needs safely and efficiently, we have decided to invest more than SEK 2 billion in the coming three years in electric and control equipment as well as in some safety-related equipment, such as back-up diesel generators. The 2016 parliamentary energy agreement – in which the long-term operation of nuclear power was confirmed and the nuclear production tax was phased out – gave us the security needed to take strategic investment decisions, such as the investment in independent core cooling for the three reactors in Forsmark in 2016 and for the Ringhals 3 and 4 reactors in 2017.

The reactors at Forsmark and reactors 3 and 4 at Ringhals have undergone comprehensive modernisation programmes. This, together with the significant future investments mentioned above, will ensure continued operation of the reactors until the mid-2040s.

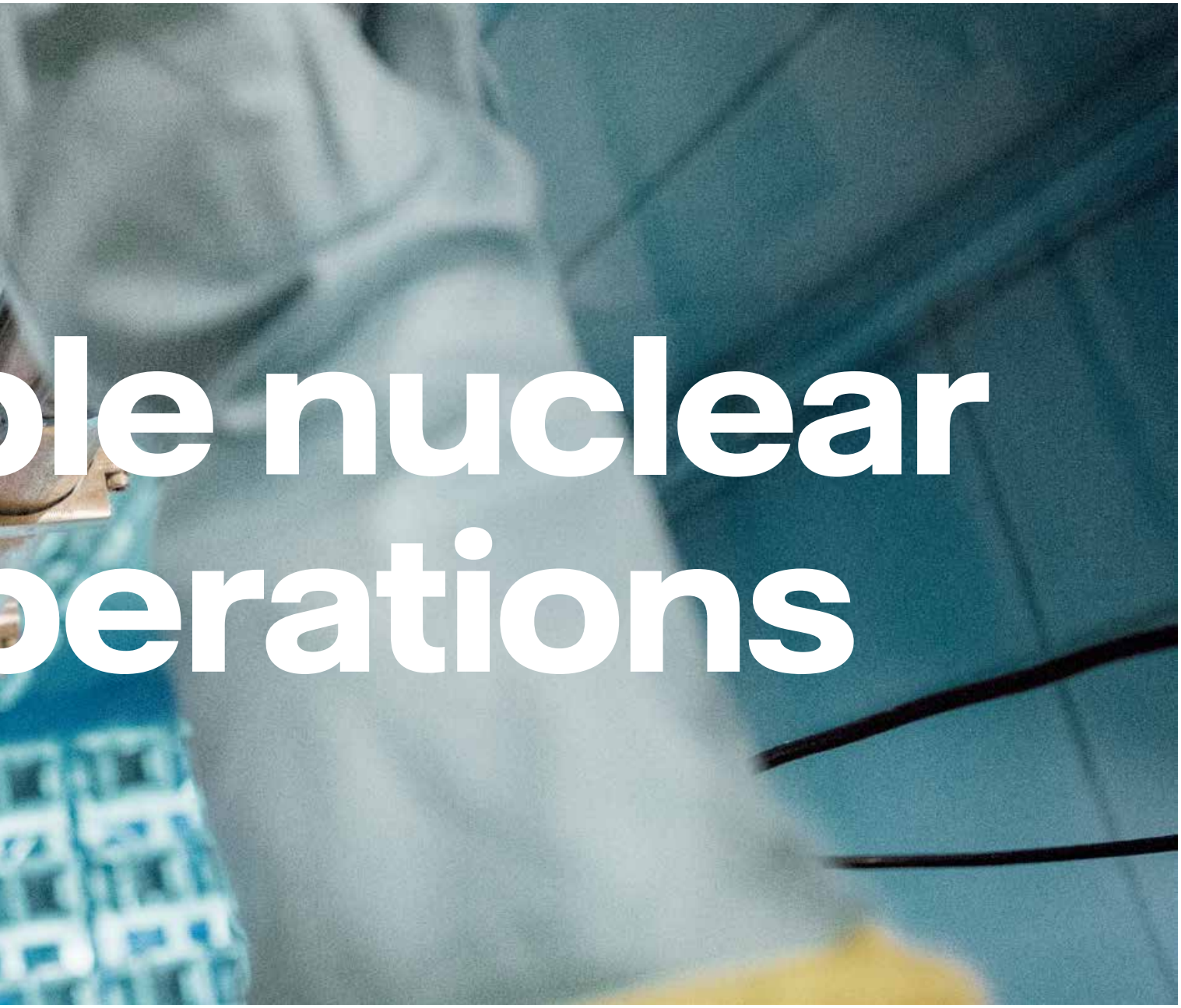
With safety and reliability secured, these units must maintain focus on cost reductions and efficiency improvements to remain competitive. The decision in 2015 to close down the Ringhals 1 and 2 reactors in 2019 and 2020, respectively, was made against the backgound of a market situation with low electricity prices and poor profitability.

Despite the two reactor closures, we will need to hire some 300 people in the next two years, including some critical competencies required to maintain efficient operations for the long term. We will also need new competencies during decommissioning.

In late 2017 we launched a trainee programme where 11 young engineers will be employed in different parts of our nuclear power organisation. The programme will start in April 2018 and run for a year, during which the trainees will have an opportunity to gain some insight into the many professional areas in the nuclear business. All of the trainees will be offered positions upon successful completion of the programme.

Waste and decommissioning

The operation of nuclear reactors produces hazardous by-products, namely spent nuclear fuel and radioactive waste. In both Sweden and Germany, nuclear power operators make provisions for future expenses for handling and repositories for spent nuclear fuel and radioactive waste. In Sweden, the nuclear reactor owners pay a mandatory fee per generated kWh



ble nuclear operations

to the Swedish Nuclear Waste Fund, which for Vattenfall amounted to an average of 4.1 öre/kWh in 2017. On 21 December 2017 the Swedish government decided on the level of fees to be paid into the fund for the period 2018-2020. For Forsmark the fee will decrease by 0.6 öre/kWh to 3.3 öre/kWh, while for Ringhals the fee will increase by 1.0 öre/kWh to 5.2 öre/kWh. Read more in Note 29 to the consolidated accounts, Share in the Swedish Nuclear Waste Fund.

In September and October 2017, the Swedish Land and Environmental Court held hearings on the Swedish Nuclear Fuel and Waste Management Company's (SKB) application to build a final repository for spent nuclear fuel and high-level waste in Östhammar Municipality. The application involves a system with multiple facilities, including a storage-capacity extension of the existing interim storage facility, a new encapsulation plant next to this in Oskarshamn Municipality, and the final repository to be built in Östhammar Municipality. The Swedish Radiation Safety Authority (SSM) reviewed the same application and approved of it in its entirety. In January 2018 the Court issued its statement. It, too, found the site for the final repository to be acceptable. However, the Court also required that SKB provide further data and assessments to verify that a phenomenon called copper corrosion would not impede the long-term integrity of the copper capsules in which spent nuclear fuel is to be stored. Both statements will be considered by the government in its future decision.

Thus although we will continue our nuclear operations in Sweden for many years to come, we are already planning for decommissioning and dismantling.

Germany

Following the Fukushima accident in 2011, a federal decision was made to shut down all nuclear reactors in Germany by 2022.

Operations

Due to the premature closure of our nuclear power plants in Germany, we are seeking compensation from the German government for lost revenues, totalling EUR 4.4 billion plus interest. A ruling by the International Centre for Settlement of Investment Disputes (ICSID) in Washington, D.C. is expected in 2018.

Separately, the Federal Constitutional Court of Germany ruled in 2016 that the German government's decision to close the nuclear power plants, which resulted in the loss of electricity generation rights, was in violation of the German constitution.

Waste and decommissioning

In early 2017, the EU approved a 2016 German law under which responsibility for the transport, intermediate, and final storage of nuclear waste was transferred to the state through payments by nuclear operators to a public fund. Vattenfall's payment amounted to SEK 17.3 billion (EUR 1.8 billion). As of now, no formal proposal for a final repository for spent nuclear fuel has been set forth, but a suitable location for final storage shall be agreed by the Bundesrat by 2031 at the latest. Until then, spent nuclear fuel is stored in interim facilities adjacent to the nuclear power plants.

Meanwhile, our decommissioning activities have been progressing ahead of schedule. One important milestone was the removal of all fuel assemblies from our Krümmel and Brunsbüttel plants. The dismantling of the Brunsbüttel reactor is expected to start in 2018 with the issuance of the necessary licence, and the intermediate storage facility for low and intermediate level waste is planned to be completed in 2019. Dismantling of Krümmel is scheduled to start some time in 2019 or 2020. Due to potential delays in the licensing process, the timetables may change.

Serving the needs of digitalisation

80

Hydro66 has planned for an initial total capacity of 80 MW for co-located data centres, of which 3.6 MW is in operation and 15.6 MW will soon be commissioned.

VIEWS ON VATTENFALL

Promoting Sweden for energy intensive industries

Node Pole is the joint venture between Vattenfall and Skellefteå Kraft to promote Sweden as the ideal location for energy intensive industries, such as data centres.

Data transfer has exploded in recent years, and the need for large, electricity-hungry data centres has grown accordingly. At the same time, expectations on these companies to act sustainably are increasing. It is therefore beneficial for all parties involved that the data centres are established at locations with ready access to renewable energy, virtually free cooling, highly reliable electricity supply, and low costs for building or renting facilities.

Establishment of data centres in Sweden first took hold in 2011 when Facebook decided to build a centre in Luleå, which proved to be a successful concept. Today Facebook has two large data centres in the area and an option to build another.

Vattenfall is firmly committed to helping these new and fast-growing industries expand their business in a sustainable way by offering the stable and low CO_2-emitting electricity generation in the Nordic countries.

"Following the Facebook project, Vattenfall studied the potential to attract more energy intensive industries to the area," says Patrik Öhlund, formerly of Vattenfall and now CEO of Node Pole. "As it turned out, Skellefteå Kraft was thinking along the same path, so we joined forces in Node Pole," Öhlund continues.

Close cooperation

Node Pole works closely with municipalities and regional authorities as well as with various governmental bodies to find suitable locations and to streamline the process for foreign investments. The collaboration between the two energy companies in Node Pole and their municipal, regional, and governmental partners is helping make Sweden an attractive location for new industries.

"We have also developed a new web platform (www.nodepole.com) where interested parties can search for suitable locations in a simple way. The aim is to establish contact with potential customers," says Öhlund.

The efforts to attract new industries to Sweden have been quite successful and have boosted the economies of the regions concerned. Several companies have decided to locate operations in Sweden or to expand their existing operations. Among these are Amazon Web Services (AWS) and Northvolt (where Vattenfall is involved).

Co-location – a climate-smart solution

Co-located data centres, where power, space, and bandwidth are available for rental, is also a rapid growth area. Vattenfall's customer Hydro66 is one example.

"We chose this location because we wanted hyper-scale green power at the best price in the EU. The town of Boden has the world's most reliable grid and is 100% green hydro power," says Anne Graf, CEO of Hydro66, adding that this allows them and their clients to operate at an entirely new level of environmental and cost efficiency.

"The partnership with the regional investment agencies has been really important to us, and their continued efforts at communicating the benefits of the region are of great value for our growing industry," Graf concludes.

Wind

Operations

Vattenfall's Wind business continues to be a leading player in offshore wind power worldwide as well as one of the leading companies in onshore wind power in Denmark and the Netherlands. We currently operate a portfolio of about 1,100 wind power turbines with total installed capacity of 2,751 MW across five countries. In 2017 we strengthened our focus on solar energy (PV) technology and battery storage. We took the first 5 MW solar farm in the UK into operation in 2016 at the Parc Cynog wind farm and plan to build additional solar farms and battery installations in our work on further developing our portfolio.

Key data

	2017	2016
Net sales (SEK million)	9,438	6,702
External net sales (SEK million)	6,669	4,384
Underlying operating profit[1] (SEK million)	2,137	878
Electricity generation (TWh)	7.6	5.8
Investments[2] (SEK million)	7,161	8,329

[1] Underlying operating profit is defined as operating profit excluding items affecting comparability.
[2] Values have been adjusted compared with information previously presented in Vattenfall's 2016 Annual and Sustainability Report.

Strategy

Development of renewable power generation is the key to reducing CO_2 emissions, achieving a sustainable energy system, and unlocking the climate benefits of widespread electrification of society. We want to be a leader in the development, construction and operation of on- and offshore wind power. We have set a target to add an additional 2,300 MW of commissioned renewable capacity between 2016 and 2020, bringing our estimated total capacity to 4,100 MW by 2020. To achieve the target and succeed in a competitive market, we have identified the following focus areas for Wind:

- Further strengthen our project pipeline by acquiring project development rights or entering into joint venture agreements
- Become a leader in Levelised Energy Cost (LEC), such as by leveraging procurement scale, standardising processes and improving site selection and design capabilities
- Innovate in operations and maintenance, and use digitalisation to reduce costs and improve availability[3]
- Create partnering options for a number of major projects

[3] See case study on page 44.

Developments in 2017

2017 was a very successful year for Vattenfall's Wind business. Net sales and the underlying operating profit for 2017 increased compared with 2016 as a result of new added capacity. Electricity generation increased by 1.7 TWh in 2017, of which 1.6 TWh was attributable to new capacity.

A total of 354 MW of new capacity became operational, of which 282 MW was onshore capacity. During the year we began development work as well as the tendering process for the Vesterhav Syd and Nord near shore wind farms (344 MW) and the Kriegers Flak offshore wind farm (602 MW) in Denmark. In November we chose 8 MW turbines to supply the three farms and thereby leverage our scale to reduce costs. Installation of the foundations for the Horns Rev 3 wind farm (407 MW) started during the autumn. Once completed, the project will have the capacity to meet the annual electricity needs of 425,000 Danish households. We continued construction work on the European Offshore Wind Deployment Centre in Aberdeen, the largest offshore wind test and demonstration facility in Scotland. Supported by up to EUR 40 million in EU funding, the 11-turbine wind farm (92 MW) will test new technologies and, once operational, will share key environmental and operational findings across the industry to boost the industry's drive to competitive clean power. One technology being tested is the suction bucket foundation, which is faster to install and easier to remove after decommissioning, consequently reducing costs. Further, construction using this technology produces less noise, benefitting the marine fauna.

We commissioned the final 72 MW of Sandbank, a 288 MW offshore wind farm in Germany, a few months ahead of schedule, and in September we inaugurated the Pen y Cymoedd (PyC, 228 MW) onshore wind farm in the UK. In the Netherlands, we decided to repower our Wieringermeer onshore wind farm (180 MW) and acquired a neighbouring project for a 118 MW expansion. We signed an exclusive partnering contract with Microsoft in which Microsoft will purchase 100% of the electricity generated by the (180 MW) Wieringermeer wind farm for its local data centre operations.

In 2017 we launched an initiative to use big data to optimise the steering and maintenance of our wind farms with respect to weather, market prices and spare parts availability, which will allow us to minimise lost revenues, generate additional revenues, lower costs, and even increase employee safety.

We will continue to develop our onshore wind project pipelines in our core markets. Solar power and batteries will increase in the coming years, and we have already begun construction of three battery projects. The first, a 22 MW project, is being constructed and integrated with our PyC onshore wind farm in the UK to be able to provide advanced services to the national grid. The second, a 3 MW project, will be combined with our Princess Alexia wind farm in the Netherlands to deliver on the Primary Control Reserve (PCR) to stabilise the grid, enabling us to participate in the balancing market and further contribute to the optimisation of the renewable energy system. The third is a 2 MW joint project with BMW and Bosch at Hafen Hamburg which uses old car batteries to provide PCR. The battery will be operational in early 2018.

Planned activities

We will continue to invest in wind, solar, and batteries in the coming years and will continue to bid for tenders. With respect to our existing wind farms, we will lower costs by raising the level of standardisation, digitalisation, and data analysis. We will also further develop our offering to operate third party-owned wind farms. Given our expertise in constructing and operating on- and offshore wind farms, we believe partnerships will provide attractive opportunities to fulfil our commitment to further growth.

Engaging with local stakeholders and implementing the most appropriate environmental solutions are vital preconditions for our success. Our environment and sustainability experts provide support to wind power, solar, and battery projects, ensuring that we work actively with local stakeholders and are continuously developing our expertise on minimising biodiversity impacts.[4] One current focus area is the effect of wind farms on protected species. For example, Vattenfall is sponsoring the DEPONS project, an industry-initiated and funded research project aimed at developing an evidence-based tool for modelling population impacts of piling noise disturbance to harbour porpoises in the North Sea.[5]

[4] See page 168 for more details.
[5] The first model Version 1.1 was made public in April 2017 and can be downloaded from the DEPONS website.

VIEWS ON VATTENFALL

Advanced analytics to improve operations

In 2017 Vattenfall launched a web-based solution for digital monitoring of performance and reliability of Vattenfall's wind farms. The anticipated benefits will be increased production, reduced maintenance costs, and enhanced safety for technicians at wind farms.

"There is incredible potential for digital and data-driven solutions to improve the way we operate and manage our wind farms," says Masoud Asgarpour, team leader Analytics & Asset Integrity Management in the Wind Business Area.

Vattenfall has been investigating potential digitalisation solutions for smart operation and maintenance planning for onshore and offshore wind farms, and in 2017 we launched our first project, the Wind Analytics Platform, for real-time monitoring of the performance and reliability of wind farms.

The Wind Analytics Platform is an automated platform in which all wind power data is centralised in one location, allowing users to create new insights and features on top of the existing data and analytics results. In addition, the platform has been aligned with other ongoing digitalisation and process harmonisation projects to ensure maximum value creation.

Early identification – optimal scheduling

"In practice, the Wind Analytics Platform allows us to more easily identify the root causes of wind turbines' underperformance, detect early stage component faults prior to their failures, and estimate the remaining useful life of critical wind components," says Asgarpour. "And as an added benefit, we can also optimise the scheduling of maintenance work orders, which can both reduce maintenance costs and enhance the safety of our colleagues at the wind farms."

The platform has been online since January 2017, and there are already interesting results coming in that demonstrate how this will play a role in our drive to be cost leaders in developing and operating wind farms.

While lost production cannot be fully prevented and maintenance costs can never be reduced to zero, with help of the data from the platform they can be reduced significantly.

"If the Analytics Platform is fully utilised, we think it will be possible to prevent up to 10% of lost production due to failures and up to 5% of lost production due to underperformance," says Asgarpour.

"Applied to our current portfolio across the UK, Germany, Denmark, Netherlands, and Sweden, this could amount to 700 GWh of additional production."

Further development of the Wind Analytics Platform is planned for 2018.

2.75

Vattenfall operates 1,070 wind turbines with total installed capacity of 2.75 GW at 46 onshore and 11 offshore wind farms. In 2017 Vattenfall's total wind power assets generated 7.6 TWh of electricity, enough for 1.9 million households (assuming average annual electricity consumption of 4 MWh per household).

Digitalisation for smart operations and maintenance

Heat

Operations

Vattenfall is one of Europe's largest producers and distributors of heat, supplying electricity and heat to growing metropolitan areas in Northwest Europe, including Berlin, Hamburg, Amsterdam and Uppsala. We operate approximately 15 large base-load combined heat and power plants (CHPs) and six condensing plants.

The Heat business has a customer base of more than 2 million end users and very low churn (less than 1%). We also offer an array of decentralised heating and energy solutions, including mini-CHPs, heat pumps, and solar panel installations. Our decentralised operations comprise over 320 installations that serve some 33,000 customers.

Key data

	2017	2016
Net sales (SEK million)	30,732	28,414
External net sales (SEK million)	14,890	15,110
Underlying operating profit[1] (SEK million)	3,379	3,230
Sales of heat (TWh)	18.8	20.3
Electricity generation[2] (TWh)	32.2	31.6
– of which, fossil-based power (TWh)	31.8	30.8
– of which, biomass and waste (TWh)	0.4	0.8
CO_2 emissions[2] (Mtonnes)	22.6	23.2
Nitrogen oxide, NOx (ktonnes)	9.8	10.2
Sulphur dioxide, SO_2 (ktonnes)	4.4	4.2
Particulates (ktonnes)	0.3	0.3

1 Underlying operating profit is defined as operating profit excluding items affecting comparability.
2 Values have been adjusted compared with information previously presented in Vattenfall's 2016 Annual and Sustainability Report. CO_2 emissions are pro rata.

Strategy

We have actively engaged with all our stakeholders to learn more about their expectations of Vattenfall as a heat supplier. Our five strategic pillars in Heat show we take these expectations very seriously:

- Deliver on our customer promise and grow in our core regions and expand in both district heating and decentralised heating solutions
- Drive the transition towards fossil-free heating solutions together with cities and regions
- Drive innovation with a greater focus on digital products and services
- Commit to operational excellence and competitive pricing for heat customers
- Attract talented employees and build up new competencies

Developments in 2017

By signing the Berlin Climate Protection Agreement in 2009, we committed to helping Berlin reach its climate neutrality target for 2050. We have finished a number of major projects with significant CO_2 reductions. In 2017, the lignite-fired Klingenberg CHP was closed three years ahead of what was agreed with the city. Its production has been replaced by a refurbished gas-fired unit, resulting in an annual reduction of CO_2 emissions by approximately 600,000 tonnes. We have started a pilot Life Cycle Assessment (LCA) programme for our gas-fired CHP plant in Marzahn, which is currently under construction. The LCA considers environmental aspects and impacts over the whole life cycle. The results will be summarised in an Environmental Product Declaration according to ISO 14021 and will be communicated to our stakeholders. In Hamburg, work is currently being conducted to replace the gas-fired boiler at the Karoline site, and the newly built heat only boiler (HOB) is about to be commissioned in Haferweg.

During the year our decentralised heat solutions business moved to new offices at an energy campus in Berlin with multiple new network and partnership opportunities. The new location will facilitate efforts to drive a range of innovative projects, such as a sewage heat utilisation project in Berlin and a power-to-heat pilot project in cooperation with a tenant-owner housing association.

The Netherlands has set a goal to phase out natural gas in the built environment by 2050; at present more than 90% of residential heating in the Netherlands is provided by household gas boilers. We are supporting this transformation by offering cost-effective, low CO_2-emitting district heating, and have signed a deal with the city of Amsterdam to pursue these ambitions. With the Noorderwarmte pipeline in Amsterdam, we connected new areas to our district heating network, reducing CO_2 emissions by 70% for residents. Additionally, we are using a combination of residual heat from waste incineration plants, highly efficient gas CHPs, and renewable sources including biomass and solar.

In Sweden, a flue gas condenser was built in Jordbro, which will save approximately 15% of the heat amount to the grid. Jordbro has installed a cleaning system which will enable using the flue gas condensate as process water both in the CHP plant and the heat plant, thus closing the water cycle and reducing the use of drinking water as process water. In Vänersborg, an accumulator for heat storage has been erected to optimise heat use and production. In Uppsala, work is continuing to reach the goal to cut CO_2 emissions in half by 2020. During the year a storage tank for bio-oil was built which will enable the switch from petroleum-based oil to bio-oil.

In 2017, the Heat Business Area initiated a digital transformation project aimed at improving the customer experience, increasing operational efficiency of our grids and power plants, and supporting employees with new ways of working. We are investing heavily in digital technologies to improve our customer service and to help customers manage their energy needs more effectively. Using advanced data analytics, we are operating our grids and power plants more efficiently, resulting both in reduced maintenance and operational costs and improved reliability for customers. We are also looking at how digital technologies can help us integrate new sustainable energy sources into our networks to provide customers with more choice in the future.

Planned activities

In Germany we will focus on accelerating the growth of our decentralised solutions business, for instance by further promoting Haus Strom, our solar panel solution in which tenants can generate power from their own rooftops. In Berlin we have agreed to close and replace our Reuter C coal-fired power plant with a new gas-fired combined heat and power plant and a gas-fired boiler by 2020. In collaboration with the City of Hamburg we will implement a CO_2 reduction plan for the district heating system by integrating surplus heat from industrial processes and phasing out our old coal-fired plants, Wedel and Tiefstack. To reduce our CO_2 emissions, we have drafted the following transitional plan for our operations in Uppsala:

- 2018: Conversion of the existing hot water boiler from peat to wood pellets
- 2019: Closure of the peat-fired CHP
- 2020 onwards: Heat in Uppsala will be generated by waste-fired boilers, biofuel boilers, electric boilers and heat pumps, and the new wood chip–fired plant will be put in commercial operation in 2021

Together these actions will reduce annual CO_2 emissions from the Uppsala heating system from approximately 400,000 tonnes in 2013 to about 140,000 tonnes in 2020, exceeding our commitment to halving emissions by that date. In Amsterdam, we are currently developing a new green heat source to increase the share of heat from renewable sources in our heat grid. By the end of 2018 we will have installed approximately 30,000 smart heat meters in Berlin and Hamburg, which will enable us to essentially steer them remotely in real time in order to improve energy efficiency.

Warming homes with surplus heat

375

Rather than releasing surplus heat into the atmosphere, Vattenfall and grocery wholesaler Dagab have partnered to capture Dagab's waste heat from refrigeration systems to heat 375 homes nearby in Jordbro.

VIEWS ON VATTENFALL

Making use of surplus heat

SamEnergi is a new Vattenfall initiative focused on teaming up with new partners to capture surplus heat from industrial and commercial facilities and integrate it into the district heating grid.

Third-Party Integration (TPI) is a climate-smart partnership concept between district heating providers and businesses that generate large amounts of surplus heat in their daily operations. Instead of letting this surplus heat go to waste, Vattenfall is connecting these facilities to its district heating grids in order to use it for our heat customers. The only thing needed, except for a new grid connection, is to have a heat pump and/or a heat exchanger installed.

"By looking beyond our own operations and working with new partners, we are identifying synergies that reduce the overall climate impact of the energy system," says Vattenfall's Stig Andersson, project leader for the SamEnergi pilot project, which is focused on Dagab's cold storage warehouse operations in Jordbro, south of Stockholm. Dagab is part of Axfood, a large Swedish food company.

"Through our partnership with Dagab we will be able to heat 375 local homes using only the heat that would otherwise just be released to the air," says Andersson, who also sees further potential in Jordbro by involving more enterprises and connecting them to the grid.

"The future of this concept lies in making use of it on a larger scale and providing reliable baseload production with surplus heat in all our grids."

Social responsibility

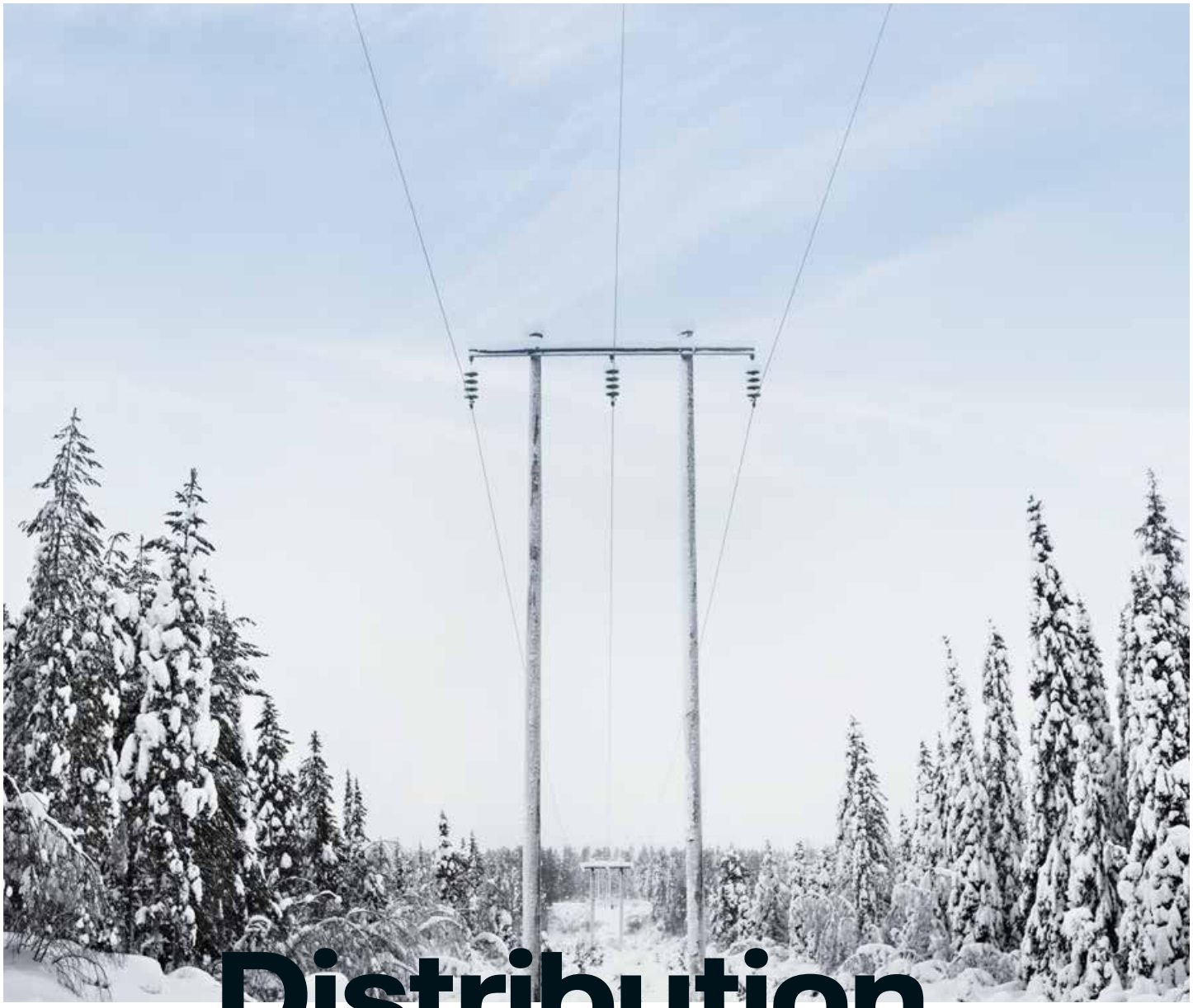
"Our project together with Vattenfall is totally in line with Axfood's social responsibility ambitions, and I hope that our joint project will lead to a paradigm shift in energy consumption in society," says Åsa Domeij, Axfood's Head of Sustainability, who stresses that we all have a responsibility to do our part in combating climate change.

"One part in this is to really think about how we use energy. For our part if feels very good that Vattenfall can use the surplus heat generated by Dagab's warehouse in Jordbro," she adds.

Large potential

Sweden is not the only potential market for initiatives to make use of surplus heat from the industry and innovate climate-smart solutions. In 2016 Vattenfall began piping surplus heat from its Moorburg power plant in Hamburg to an industrial customer, thereby reducing its need for fuel to produce heat on-site. Ongoing internal studies suggest the potential to integrate these kinds of solutions in Berlin, Hamburg, Amsterdam, and the UK could significantly increase our ability to provide climate-smarter heat.

"Our heat business fits well into Vattenfall's purpose to Power Climate Smarter Living as well as our strategy, which is based on decarbonisation, digitalisation and decentralisation," says Tuomo Hatakka, Senior Vice President of Vattenfall's Heat Business Area. "Integration of external heat that would otherwise be unused has an important role to play in decarbonisation. We expect to double the infeed of this third-party heat in our district heating operations in Sweden, Germany and the Netherlands."



Distribution

Operations

Vattenfall's Distribution business owns and operates electricity distribution networks in Sweden and Germany (Berlin), and has approximately 3.3 million business and household customers. We strive to minimise environmental impacts when constructing and operating our electricity distribution networks.

Electricity distribution is primarily a regulated business that is supervised by the network regulators in the respective countries. In autumn 2017 the Swedish Energy Markets Inspectorate presented a proposal for tighter revenue regulation of electricity network companies for the next regulatory period 2020–2023. As written, the proposed changes would have an overall negative effect on the terms for network companies. The extent to which the role as enabler of the new, sustainable energy landscape can be met is therefore dependent on if and how the proposals are finally implemented. In Germany, the third regulatory period of incentive regulation, valid from 2019 to 2023, is in preparation.

Key data

	2017	2016
Net sales (SEK million)	21,494	19,661
External net sales (SEK million)	16,904	15,233
Underlying operating profit[1] (SEK million)	6,140	4,863
Investments[2] (SEK million)	5,483	5,457

1 Underlying operating profit is defined as operating profit excluding items affecting comparability.
2 Values have been adjusted compared with information previously presented in Vattenfall's 2016 Annual and Sustainability Report.

Strategy

Electricity distribution and its related infrastructure are essential for a sustainable society. Customers and society have greater expectations for security and quality of supply as well as on the ability to connect to the network. Vattenfall sees a need to improve security of supply in the grids. While we have made major investments in the electricity networks for many years, we need to further improve the quality of supply by reducing the average frequency as well as the average duration of outages.

Furthermore, we need to increase the capacity of the network in many areas in order to be able to connect more customers, especially in urban areas, and to integrate more intermittent renewable energy. The ageing network must be modernised to manage the growing volume of renewable and distributed power generation that needs to be connected. The Distribution System Operators (DSOs) are committed to enabling the adoption of smart meters, digital solutions and related customer information. To meet these needs, we have identified the following focus areas for Distribution:

- Increase investments to improve availability and quality of supply, increase customer satisfaction, and accommodate renewable energy sources
- Become a digital DSO with smart, customer-centric solutions and increased automation in the electricity network

Developments in 2017

In Sweden, net sales increased mainly owing to higher prices and slightly higher transmission volumes. Higher net sales combined with lower costs compared with a year ago led to an increase in underlying operating profit. Vattenfall's Distribution unit continues to increase its level of investment in the electricity network in order to reduce outages, improve delivery reliability and meet the growing demand for new connections. In 2017 we invested more than SEK 5.7 billion in electricity networks, of which SEK 4.1 billion was in Sweden. A large share of investments in Sweden pertain to weather-proofing the electricity network, particularly in the countryside, and to improving the network in growing cities. Measures such as insulating overhead power lines or replacing them with underground cables will reduce outage frequency and duration. To further increase reliability in Berlin, investments are being made to renew assets, such as through substation upgrades and asset automation.

During the year we announced a 6% increase in the electricity network price in Sweden and a 9%–12% decrease in Berlin, which are both effective from 1 January 2018.

The forthcoming roll-out of smart meters in Germany is governed by a new law, where integrity, data security, and data protection issues are key aspects. We have already started the roll-out of modern digital meters and are preparing for the roll-out of remote controlled metering systems.

We have been awarded a contract for the operation, maintenance and repair of the public lighting system in Berlin, including lighting on traffic signs and road facilities, by the Senate Department for the Environment, Transport and Climate Protection in Berlin.

In Berlin, the tender process for the electricity grid concession is expected to continue throughout 2018 or even later. Meanwhile, the Sellerstraße substation went into operation. The 110/10 kV substation supplies the emerging Europe city near the central station.

In Sweden, the Smart Grid Gotland project was completed during the year. The project demonstrated how grids can be adapted to integrate intermittent renewable energy sources and how customers with access to precise consumption data can reduce their consumption and/or shift demand without sacrificing convenience.

We established a new unit in the UK to own and operate electricity networks. Vattenfall was granted an operating licence in November 2017 by the British energy regulator Ofgem. This marked the first step to establish an electricity distribution operation for smart energy solutions as an independent network operator in the UK.

When initiating new projects it is essential that we involve local stakeholders to ensure local acceptance and to mitigate any potential negative impacts. Stakeholder dialogues are conducted by employees with knowledge of the local community. Environmental aspects are always considered, with special focus on biodiversity and protected species. For example, in Berlin we have provided space for bee colonies in our fenced substations, which is helping to address the widespread problem of collapsing bee populations.

Planned activities

We will continue to invest in improved security of supply and in digitalisation of the network to ensure that we operate a smart, efficient, and stable grid that will improve our offering to customers, support development of new business models, and enable the continued integration of distributed, renewable energy sources. The smart meter roll-out in Germany will contribute to the achievement of the energy efficiency targets step by step (such as through energy visualisation and remote control solutions).

We will continue to develop relationships with local stakeholders to foster an understanding of our societal responsibility as a network owner. Environmental focus areas in the coming years include proper management of biodiversity in maintenance and construction activities, responsible handling of equipment to avoid oil spills, and the ambition to adopt new cooling technologies for high voltage breakers when they become commercially viable.

Our network operations in the UK are expected to start in 2018. The new unit will build and operate new connections to the existing network in new residential, retail and industrial areas.

Sjöängen microgrid

During the year we initiated a new microgrid system at the Sjöängen culture centre in Askersund Municipality in Sweden. The project includes solar energy, battery storage, power control and e-vehicle charging in a locally integrated system. The project, which will run until autumn 2018, will test various operating strategies that can show how a battery pack with smart control can contribute to better operating economy and system stability. This includes equalising power output from the local network during consumption peaks, utilising variations in electricity prices in the electricity market and delivering uninterrupted power.

Facilitating fossil-free transportation in the Netherlands

VIEWS ON VATTENFALL

Making e-mobility more accessible

Nuon, Vattenfall's subsidiary in the Netherlands, is working together with the City of Amsterdam to develop e-mobility.

The partnership has already lasted for seven years and has resulted in the installation of more than 2,400 public charging points, all serviced with electricity from Nuon's wind farm in Amsterdam Harbour. During 2017, vehicles were charged with a total of 6.5 GWh in Amsterdam, which is enough to drive about 28 million kilometres and avoid approximately 4,500 tons of CO_2 from equivalent fossil fuel emissions.

"Amsterdam has a long and solid track record of promoting the use of electric vehicles in the city, having put an effective charging infrastructure in place and promoting the transition to e-mobility," says Bert Vertelman, programme manager for Air Quality at the City of Amsterdam.

"The cooperation with Nuon will help the city reach its goal of zero transport emissions by 2025," continues Vertelman, who also points out that usability and reliability are important aspects in the cooperation between Amsterdam and Nuon. "It's also what makes Nuon a convenient partner in this work," he adds.

"What we are now seeing, as new e-vehicle models are being introduced, is that more and more companies are deciding to electrify their fleets," says Maartje Kroese, sales manager for e-mobility in the Netherlands. "In our home charging business we have also noticed greater interest from tenant-owner associations, which are looking for long-term charging point solutions in their shared garages."

Vattenfall is also expanding its e-mobility business in other markets, such as by installing eight new charging streets in Stockholm, and aims to be a major provider of charging solutions in Northwest Europe.

Internal commitment to e-mobility

Vattenfall believes in e-mobility, as fossil-free, electrified road transport has the potential to reduce greenhouse gas emissions in Germany, the Netherlands, and Sweden by about a third.

In addition to developing our e-mobility services and products and expanding the number of charging points across Northwest Europe, we have made an internal commitment to replace our own fleet of 3,500 vehicles with electric vehicles in the coming five years. All company cars used by employees will also be replaced by either electric or hybrid vehicles.

In 2017 Vattenfall joined EV100, an international electric car initiative aimed at promoting and accelerating the transition to electric vehicles and making EVs the new normal.

8,400

At year-end 2017 we operated 8,400 charging points in Germany, the Netherlands and Sweden.

Research and development

Research and development activities enable us to develop innovative solutions that support our strategy and help find new ways for us, our partners, and our customers acclerate the transition to a fossil-free future.

In recent years, the focus of Vattenfall's research and development (R&D) activities has shifted away from electricity generation to more customer-centric areas with greater emphasis on digitalisation, decentralised solutions for customers, e-mobility and new ways of using electricity.

Our focus is on how we best can use technology and new solutions to execute our strategy and create customer value. Toward this end, we are collaborating regularly in pilot projects with partners and customers.

Our R&D organisation has approximately 130 full-time employees, but a great deal of development also takes place within the individual business areas. Total R&D spend in 2017 was SEK 547 million. For more information on our costs for R&D activities, see page 90.

Hydro power – developing into the future

Vattenfall is working in a multitude of ways to increase the efficiency of its hydro power plants and reduce their environmental impacts. Digitalisation is one such area that is opening a world of new opportunities.

To develop the best environment possible for the ecosystems surrounding our plants, we have built a new laboratory in Älvkarleby, Sweden, creating a unique resource to study the effectiveness of various technical solutions to improve fish migration. In real rivers, remote-controlled drones and vehicles equipped with cameras and sonar systems have scanned riverbeds. From the compiled data it is possible to construct detailed digital models of the rivers, which can then be used to better predict the environmental impact. One purpose is to construct fish ladders in an optimal way and increase the success of up- and downstream migrations. Through cooperation with biological and technical experts from Swedish colleges and universities, we are building up a new combined competence to achieve optimal results.

To increase the efficiency of our plants and be better prepared for the future, we are studying and developing new techniques to optimise plant operations and maintenance. For example, we are testing how the increased demand for flexibility (not running at steady state) affects our turbines in a turbine test rig.

The large amount of data from sensors placed in modern hydro plants as well as in the dams, combined with the development of advanced data analytics, is creating new opportunities to get a clear picture of the state of a dam, or of a plant and its components. In this way we can detect problems before they lead to a disruption and thereby optimise maintenance and prevent potentially greater problems in the future.

Analytics for climate-smart customers and grid services

The ongoing digitalisation is providing us with a wealth of advanced data, and Vattenfall is exploring ways of using this data to create even greater value. Through analytics we can create opportunities for our customers to act more climate-smart while enabling us to modernise our monitoring of the grid and better manage its flexibility.

End-user applications and benefits
Smart meters are a technological advancement that were originally installed to enable automatic billing. Digitalisation and advanced analytics are now opening up new possibilities.

Data about customers' actual energy consumption can be used in many ways. One example is to offer customers a clear visualisation of their energy consumption patterns, enabling them to spot anomalies and identify opportunities to save energy. Such an application has been developed and is now being tested in a pilot project including more than 2,000 Vattenfall customers. Such advancements will enable us to control and level out the energy consumption automatically, without reducing customers' comfort. For customers with their own solar or wind power systems, load shifting can be tailored to harmonise consumption with their own generation. Customer benefit can be further enhanced with the addition of batteries and energy storage systems.

System applications and benefits
Vattenfall uses information from smart meters, sensors and switches installed in the grid to visualise the grids digitally. Outages can be located automatically, with much greater precision and almost instantaneously, leading to faster grid restoration and reduced outage times. This is an important improvement for our customers, especially in the countryside, where outages typically take a longer time to remedy than in urban areas.

Voltage levels and quality of the grid in specific areas can also be measured remotely, something that is important when planning grid reinforcement, but also when planning for new buildings or development of new city areas. Avoiding unnecessary grid reinforcement saves costs both for us as the grid operator and for the customers. The other side of the coin is that we can start planning for reinforcement of the grid before customers experience low voltage levels when electricity use rises.

At a system level, the introduction of more solar and wind power is leading to greater interest in using batteries to level out consumption, or in shifting consumption to periods of high generation from these sources. Smart system services, which minimise balancing and load-shifting costs while maximising consumption of these renewable energies, will be attractive to grid operators as well as for end customers and will facilitate the shift towards an energy system based on 100% renewables.

Reduce emissions from cement production

There are two main sources of CO_2 emissions when producing cement: approximately 60% of emissions are process-related and are released from the limestone when heated, and roughly 40% are combustion-related. Vattenfall has partnered with Cementa AB in a project aimed at electrifying the heating process in cement production to eliminate the combustion-related emissions.

Cementa's goal is to have a zero CO_2-emitting process over the life cycle of cement by 2030, which would represent a reduction of Sweden's total CO_2 emissions by about 5%. The company has worked for years with energy efficiency measures and actions to decrease its use of fossil fuels, and this has led to a lower environmental impact. But to achieve the zero CO_2-emitting goal for 2030, a complete shift of technology is necessary – including both a switch of fuel for the heating process and a method for dealing with the process-related CO_2.

Within the framework of the CemZero project, Vattenfall and Cementa are studying the possibilities to electrify the cement-making process. To produce cement, limestone is heated up to approximately 1,450 degrees Celsius and then cooled down and ground together with sand and gypsum. Switching to fossil-free electricity for the heating process will eliminate approximately 40% of the CO_2 emissions from the start. The limestone will still emit CO_2 when heated, but by using an electrified process the CO_2 emissions will be purer and thus easier to capture and take care of.

This partnership with Cementa AB is one of our initiatives together with large industries to introduce new climate-smarter solutions that address emissions from industrial processes and products. We are also working together with LKAB/SSAB and Preem (see page 57) on two other projects aimed at using electricity to eliminate fossil fuels and reduce greenhouse gas emissions.

Making biofuels from trees and water

VIEWS ON VATTENFALL

Using fossil-free hydrogen gas to produce biofuels

Vattenfall and Preem are together studying the potential of using fossil-free hydrogen gas to produce renewable biofuels from forestry by-products. The aim is to boost Preem's production of liquid biofuels and other fossil-free biofuels and to make them more climate-effective.

"Preem's goal is to produce 3 million cubic metres of renewable biofuels by 2030. To get there, we need more renewable raw material and access to climate-smart hydrogen gas," says Linda Werner, Business Developer at Preem, the largest fuel company in Sweden.

If Preem achieves its goal by 2030, it would correspond to a large part of the government's climate target for Sweden's transport sector. There are direct benefits for Preem as well.

"By using climate-smart hydrogen in our production, total greenhouse gas emissions from the fuel production will decrease as well as the total CO_2 emissions from the product itself," says Werner.

In the future, more types of renewable raw materials are expected to be used in biofuel production, potentially increasing the need for hydrogen gas, as these new raw materials may need to be pre-treated before entering the refinery process.

"The supply of climate-smart hydrogen gas will be a key factor in the changeover to new fuels. We consider the technical success potential to be good. We have also noticed keen interest in this, both within Preem and among our stakeholders," Werner concludes.

Climate-smart hydrogen gas is key

Hydrogen gas will play a crucial role in the future refining process, and the need for hydrogen is great when using renewable raw materials to produce biofuels.

Vattenfall's role in the project is to provide hydrogen gas for the biofuel production process. Hydrogen is produced by splitting water, H_2O, into hydrogen (H_2) and oxygen (O). The splitting is done through electrolysis, a process that can use fossil-free electricity, such as hydro and wind power from Vattenfall's plants.

"This is a really interesting project with clear benefits for the climate," says Anders Wik, project manager at Vattenfall. "Our cooperation with Preem has the potential to make a significant impact on the transport sector – a sector that accounts for roughly a third of total CO_2 emissions in Sweden."

3,000,000

Preem has set a goal to produce 3 million cubic metres of renewable biofuels by 2030. The biofuels can be produced from black liquor, a by-product from the pulp and paper industry. Black liquor contains lignin, which can be converted to diesel fuel using hydrogen gas.

Our people

Vattenfall is building a new people-driven future.
We believe that we will be successful in our efforts to Power Climate Smarter Living through our people.

Strategy

Skilled and engaged people who thrive in a company that thinks broader than others and cares about the individuals and our communities will drive our success. We rely on a broad mix of individuals working together to make it happen – thinkers, makers, builders, solvers – who each bring their own unique talents to the team in order to make our customers' future better by understanding their role in our purpose – to Power Climate Smarter Living – and actively contributing to it.

While building a stronger Vattenfall that will not only survive, but thrive in the new business environment, we face a stiff challenge: we must balance the need to be lean and agile with the need to bring the best people on board. And then we must bring out the best in each person – employees and partners alike. Both young and experienced professionals with the right mindset are in short supply, which is making it a challenge to attract and retain top talent. We offer opportunities to learn and gain experience – purposeful work along with bright and collaborative colleagues in a safe and inclusive environment. At the same time, we must transform our culture into being more open, active, and positive – all at a faster pace.

To attract talent and empower our people, we have worked actively with the following focus areas:

- Engaging high-performance culture
- Safe and healthy work environment
- Diversity with the right competence

Developments during 2017

The number of employees increased slightly in 2017, from 19,935 to 20,041 full-time equivalents (FTEs).

Social responsibility and a commitment to our obligations play an important role in all restructuring and outsourcing initiatives. We always do our best to support individuals in their career development, including internal mobility opportunities as well as employability efforts on an individual level, should no internal solution be feasible. We strive tirelessly to make our people feel secure even in times of change.

Our open, active and positive work environment encourages collaboration among colleagues.

Ensuring an engaging, high-performance culture

In 2017 we set out on a journey to transform our culture toward being more open, active and positive in a work environment committed to safety. We developed our employer brand strategy, defined the culture needed to embody our purpose, and began communicating our journey – strengthening our people's belief that our company is both an employer and supplier of choice.

To reach our goal of having an engaging high performance culture, we are now conducting an activation programme to drive change in the company culture and strengthen our employees' engagement. The programme will give each and every one of our people the task to find their own role in driving the transition to a fossil-free society. The aim of the activation programme is to unite all employees around our purpose and strategy, so they feel proud of our past but even prouder of our future. The programme will be conducted over a long period of time in several phases until we fully embody the behaviour principles that we have set out to achieve.

In 2017 we continued our roll-out of a new, flexible performance management concept, shifting from processes and tools to behaviours. Cultural change and a high performance organisation require a constant dialogue on goals and continuous feedback.

In Vattenfall's annual My Opinion employee survey, the Engagement index increased to 64% compared to 57% in 2016. The long term Engagement index target is 70%. The same survey showed that the employees' understanding of our purpose and strategy increased by 23% over 2015.

During the year we initiated a redesign of our leadership development programmes and performed an update of the Vattenfall Management Institute (VMI) portfolio. Strategy execution will become an integral part of VMI, along with nourishing clear, visible, and courageous leadership behaviours. The leadership index was 74% in 2017, compared to 70% in 2015.

92% of our employees support the statement of being treated fairly, regardless of gender, transgender identity or expression, ethnicity, religion or other faith, disability, sexual orientation or age, which is 13% higher than the global average. Vattenfall takes all forms of harassment seriously, and routines for reporting and dealing with undesirable behaviour, including sexual harassment, have been in place for years. We are actively working with informing, reminding and encouraging people to notice and report harassment, whether it concerns Vattenfall employees, contractors, or suppliers. Our ambition is zero-tolerance, but we still have work to do.

Ensuring a safe and healthy work environment

In 2017 we made safety improvements through health and safety leadership initiatives while strengthening proactive health work. We proudly conduct health and safety development for both our employees and

Vattenfall's focus on health and safety has resulted in a reduction in Lost Time Injury Frequency (LTIF) from 2.0 in 2016 to 1.5 in 2017.

our contractors. Toward our goal of having zero accidents, during the year we launched a mobile app to facilitate reporting of incidents and observed risks. Measures such as this are enabling us to be proactive, act faster, and share best practices across the Group.

Reducing Lost Time Injury Frequency (LTIF) is one of our strategic targets and is actively followed up by senior management. Our LTIF improved in 2017 to 1.5 from 2.0 in 2016, and sickness-related absences remained relatively stable at 4.1% in 2017, largely owing to development and improvements in our proactive health and safety work.

We are proud that our people believe we always keep safety in mind when trying to meet deadlines or reduce costs – a statement that 85% of employees agree with.

Securing diversity and the right competence

To meet the challenge of attracting talent, we have sharpened our employer value proposition to enable potential colleagues to better understand how they can thrive at Vattenfall and take part in our mission to power climate smarter living. We will appeal to global and local talent by continuing to implement the Diversity & Inclusion (D&I) strategy. We believe that we can access valuable talent pools and increase both gender and cultural diversity by integrating the D&I strategy in every decision considering our people. By embracing diversity in all aspects of our company culuture and mindsets, we believe that we can accelerate our transformation in the new energy landscape. We are working continuously to promote diversity and an inclusive culture, and we drive and participate in a range of activities in support of this work, including external cooperation with the Diversity Charter, Mitt Liv, the Diversity Challenge and Pride Festivals.

Vattenfall's transformation is both narrowing and expanding the business at the same time, which requires the ability to re-skill and re-train many people in many different areas. This is one of the highest business priorities in all of our business areas. Toward this end, many of our business areas are conducting job rotation and talent networking programmes. Departures of competent people resulting from our transformation and rightsizing decisions will be handled in a socially responsible and considerate way. We will continue supporting employability by transparently highlighting career opportunities that ensure that our employees are able to take the next career step within or outside the company.

Integrity

Operating our business with integrity is essential to ensure that we live up to the expectations of our stakeholders, who depend on us to conduct our business in a fair and responsible manner. We have a zero tolerance policy for bribery and corruption, and we are a member of the Partnering Against Corruption Initiative (PACI), a cross-industry collaboration launched by the World Economic Forum. We require that all employees take personal responsibility to act in accordance with the company's ethical guidelines, which are laid out in the Vattenfall Code of Conduct. Tailor-made face to face training programmes and e-learning tools support these ambitions.

We expect our suppliers and business partners to act ethically and in full compliance with the applicable rules in every country they do business, as outlined in the Vattenfall Code of Conduct for Suppliers. Read more about Vattenfall's integrity organisation in the Corporate Governance Report on page 77.

Integrity training and education

New employees are familiarised with our Code of Conduct, both in text form and through e-learning. Online courses are also offered in competition law and anti-corruption. More than 3,000 employees (2016: 1,200) completed the Code of Conduct e-learning training in 2017.

All managers and employees who have extensive contact with our competitors are required to participate in the Vattenfall Integrity Programme (VIP). The VIP includes both e-learning and instructor-led training on antitrust/competition issues, anti-bribery and anti-corruption (updated in 2017), conflicts of interest and inside information. The purpose of the VIP is to raise the level of awareness, ensure all employees understand our integrity standards, and ensure a common compliance culture throughout the Group. Approximately 700 employees (1,100) attended the VIP in 2017, corresponding to nearly 2,500 hours of education. In addition, we have made integrity content part of our leadership programmes.

Awareness and monitoring

Our integrity team holds special sessions and awareness activities on a regular basis together with certain departments that have extensive dealings with partners outside Vattenfall. In 2017 this included participation by our Procurement department and our Markets and Wind business areas, among others.

It is the responsibility of every manager to lead by example and to ensure their team members understand our way of working. More than 400 managers complete the Vattenfall Integrity Survey every year. Based on the survey responses and various interviews, a range of activities may be initiated, such as monitoring compliance with our governing rules or providing tailor-made information material. One specific action in 2017 was to ask managers to encourage their teams to complete the revised Code of Conduct e-learning course. An entirely new Code of Conduct is currently being drafted and will be introduced in 2018. Substantial awareness activities will take place in connection with the launch of the new Code.

Incidents

All suspected incidents are to be reported to the employee's immediate manager, to the Integrity organisation or to the Internal Audit department. Additionally, we have a Group-wide whistleblowing function with locally appointed external ombudsmen (attorneys) to whom employees, consultants and suppliers can anonymously report suspected improprieties. We reviewed the whistleblowing function in 2017 and concluded that it is fulfilling its purpose with no material changes required.

All incident investigations are led by Vattenfall's Internal Audit unit. A total of 47 integrity-related incidents (40) were reported in 2017, of which 15 (10) led to disciplinary action. None of the incidents in 2017 were related to antitrust/competition issues. Currently there are no pending integrity-related cases against Vattenfall in court.

Most of the incidents were reported internally, while eight cases (eight) were reported via the whistleblowing function. All reported incidents and violations are evaluated and subject to a lessons-learned process to ensure continuous improvement within the company. An example of such a process following an incident report is provided in the box below.

Integrity risks

We have conducted and will continue to conduct risk assessments related to integrity. The two greatest integrity risks that we have identified are non-compliance with competition laws and corruption. In 2017, we had one reported incident in these areas. Accordingly, Vattenfall will continue its work to raise awareness within the company through training and communication, to ensure compliance with the rules in these areas.

Code of Conduct for Suppliers

Our integrity work is not just an internal issue – we also have corresponding requirements for our suppliers. During 2017 we updated our Code of Conduct for Suppliers. We require our suppliers to comply with the Code, or an equivalent standard agreed together with us, when doing business with us. In the integrity area, the new Code puts special emphasis on business integrity, anti-corruption, conflicts of interest and competition law, as well as information on how to use the whistleblowing function. It is based on, among other things, the UN Global Compact, the UN Guiding Principles for Business and Human Rights, and the OECD Guidelines for Multinational Enterprises.[1]

[1] For more information on the Code of Conduct for Suppliers, see page 163.

Whistleblowing – a process example

In late 2016 the Integrity organisation was contacted by an employee who felt that Vattenfall was paying too much for services from a certain contractor because the contractor employed a relative of a Vattenfall employee in the purchasing unit. In addition, the whistleblower informed the Integrity organisation that the contractor had posted several pictures from inside Vattenfall's plants on Facebook.

The Integrity organisation contacted Internal Audit, which launched an investigation that was conducted under strict confidentiality.

The prices on the invoices were in accordance with the contract. However, a potential conflict of interest was discovered, as a few of the invoices (out of 97) were approved by the Vattenfall employee whose relative was employed by the contractor.

The employee assured that the relative's employment with the contractor had not and would not lead to the contractor receiving any advantages, and that the employee would no longer approve any invoices from the contractor.

The investigation revealed that the pictures on Facebook did not expose any sensitive information. However, the manager at the unit was instructed to tell the contractor not to take pictures of or inside Vattenfall's plants, and not to publish any such pictures in social media or elsewhere.

The investigation report was sent to the relevant people in the organisation. Additional training and information about conflicts of interest and corruption were offered to the relevant parts of the organisation.

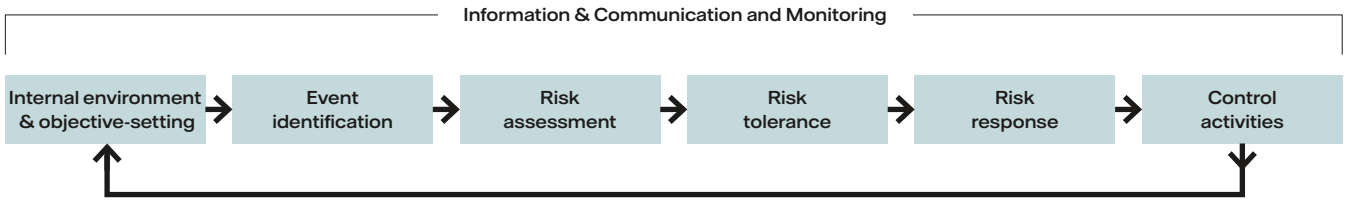
Risks and risk management

We apply conscious and balanced risk-taking in which business transactions are reviewed from both profitability and risk perspectives. In accordance with the Swedish Corporate Governance Code and the Board of Directors' Rules of Procedure, Vattenfall's risk management framework ensures thorough identification of our risks and acceptable risk exposure.

Enterprise Risk Management

The aim of Enterprise Risk Management (ERM) is to manage risks to which the Group is exposed in order to support value creation, ensure risk awareness, and balance risk against reward. ERM at Vattenfall involves analysing and monitoring all types of risks. It is based on the risk management standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the three lines of defence. It combines a top-down and bottom-up approach to support our work on adhering to our strategy and achieving our long-term goals.

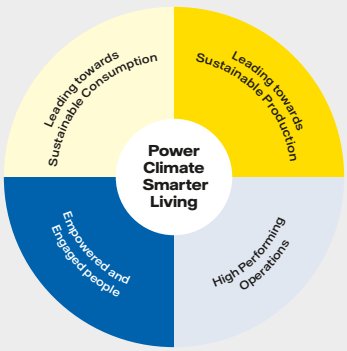
ERM process



Risks and risk management are part of the financial statements in accordance with the International Financial Reporting Standards (IFRS). Read more on pages 86–155.

ERM process

Vattenfall's strategy serves as the basis for setting objectives for the respective business units in the business planning process. When setting these objectives, risks that could hinder their achievement are identified. These risks are assessed against the company's risk tolerance, and a decision is made on suitable risk measures to avoid, reduce, share or accept the risks. The business areas' most important risks and measures are followed up as part of the financial monitoring. Information and communication are provided on a regular basis to the Executive Group Management. In our risk management process, risks are quantified and analysed with respect to both financial and non-financial consequences (e.g., concerning the environment, health and reputation). After aggregating the risks, a composite overview of our risk situation is created. The potential financial impact is linked to financial key data that is used for the steering of the company.



Risk structure

The transformation of Vattenfall's business portfolio and greater growth in renewables have contributed to a changed risk profile. Although the relative importance of market price risks has increased slightly for Vattenfall due to dramatic changes in support schemes – especially for offshore wind investments – the improved diversification of Vattenfall's portfolio provides a well-functioning risk mitigation measure. This is also reflected in our new financial targets.

The risk structure outlined on the following pages reflects the company's strategic objectives: Leading towards Sustainable Consumption, Empowered and Engaged People, Leading towards Sustainable Production, and High Performing Operations. The main risks that we are exposed to are presented, as well as how we manage these risks. Certain financial risks are associated with more than one of the strategic objectives and are therefore addressed in a separate paragraph in the risk section.

Risks related to Sustainable Consumption

We are strongly focused on increasing customer centricity and strengthening our position as a provider of full-service, sustainable solutions to our customers. This requires that we further improve and simplify the customer experience and accelerate digitalisation, which will allow our customers to take control of their energy consumption and generation.

Risks

- Threat of discontinued concession for the heating grid in Hamburg and the distribution grid in Berlin
- Inability to meet customer expectations or to develop and offer the energy-efficient and sustainable solutions and services demanded, possibly leading to lower customer satisfaction (measured by a lower NPS) and consequent loss of market share and customers
- Failure to ensure satisfactory supply reliability due to aging and unreliable distribution networks

Risk management activities during the year

To be Leading towards Sustainable Consumption we continue to develop energy solutions – such as charging solutions (InCharge), additional digital offerings, and decentralised generation – to optimise and increase value to customers. Our focus on hiring and developing digital competencies will ensure we can continue to innovate and create climate-smart product solutions that customers value. During the year several new products were developed, including InHouse (SE), Haus Strom (DE), and Nuon Solar Lease (NL). Read more on page 35. Further, we are partnering with basic industries in Sweden to electrify and decarbonise their industrial processes. For example, in partnership with the concrete company Cementa and the fuels group Preem, Vattenfall is focusing on electrifying production and replacing fuel with hydrogen gas, with the aim of substantially lowering CO_2 emissions.

To meet customer and regulatory demands on quality of supply, our distribution businesses are increasing their investments in distribution networks, primarily in Sweden. In the Nordic region we are working continuously to make the electricity networks less vulnerable by successively replacing overhead power lines with underground cables. In parallel with this, development of smart grid solutions is enabling us to reduce outage frequency and duration while allowing customers to monitor and steer their own energy use.

Close cooperation and dialogue with our city partners – Berlin, Hamburg, Amsterdam, and Uppsala – is helping to ensure that we develop the right solutions to meet their needs and are regarded as a reliable and credible partner.

Risks related to Sustainable Production

We will provide more renewable energy production and will continue to develop, acquire and participate in projects and tenders for on- and offshore wind farms. We are prepared for the transition also in the heat and transportation sectors. We have developed a CO_2 roadmap with the purpose of fulfilling our commitment to be fossil free within one generation. One key milestone on our journey is to phase out coal in our heat plants by 2030.

Risks

- Failure to fulfil our pledge to become fossil free within one generation could result in reputational damage, a loss of customers, and have a negative impact on profitability
- Unsuccessful R&D investments that commit us to less profitable technologies or make us too slow to adapt to the new production landscape could result in loss of market share
- Offshore wind is becoming increasingly exposed to competition, entailing both profitability and growth risks. Furthermore, a decrease or the elimination of state subsidies would result in fewer wind power projects, thus posing a threat to profitability. Additionally, some investors accept returns that are lower than Vattenfall's required rate of return, putting further pressure on bid prices
- New players are entering the electricity value chain, leading to higher strategic risks and competition with subsequent squeeze on margins
- In pace with development of wind power, the risk profile is shifting towards more regulatory and systemic risk exposure
- Regulatory risk related to developments in environmental legislation that could lead to restrictions on operations and permits. One example is the environmental adaptation of Swedish hydro power plants, where strict requirements could lead to high costs
- Investment risks, including procurement risk and long-term market risk, the latter related to a delayed phase-out of coal in Germany and/or fossil fuels and carbon emissions remaining at current price levels or below

Risk management activities during the year

Achieving our strategic target of reducing our CO_2 exposure requires a stepwise phase-out of fossil fuels, starting with our most emissions-intensive assets. The switch from coal- to gas-fired combined heat and power plants, gas boilers, and expansion of power-to-heat solutions will provide greater flexibility and reduce CO_2 emissions. Our focus on integration of third-party heat will further decarbonise our district heating networks.

To increase our diversification in renewables, in the coming two years we plan to invest SEK 2 billion in technologies other than wind power, including solar power, battery storage, e-vehicle charging infrastructure, and new business models. In addition, Vattenfall is launching various start-up initiatives – internal and also external – as a means to broaden the palette of customised products.

We are closely monitoring local or regional developments concerning environmental permits, which is important as our portfolio continues to diversify by region and technology. With respect to our Swedish hydro power, we will be making provisions to a fund that was established as a result of the Water Framework Directive and pair these with increased R&D focus on eco-hydraulics to optimise our plants. As subsidy levels for wind, solar, and battery projects decrease, sustainability aspects will become an increasingly important decision factor. We continue to integrate social and environmental considerations deeper into our businesses and value chains while investing in R&D to bring down our costs.

To mitigate procurement risks, several projects are being conducted to simplify processes and ensure high-quality assessments of our counterparties.

Risks related to Empowered and Engaged People

We must ensure a safe work environment that attracts, engages and develops people with the right competencies. We will continue to develop our culture, values and brand in our work on strengthening our identity and being clear about who we are, what we stand for, and what our purpose is.

Risks

- Work environment risks related to accidents and incidents threaten the productivity of the workforce and the attractiveness of Vattenfall as an employer
- Risk of an inability to attract and retain people with key competencies, and the risk of lower employee engagement for Vattenfall in connection with outsourcing and/or cost savings
- Violations of our Code of Conduct. Fraud and integrity risks could lead to loss of value and harm to our reputation resulting from incidents related to, e.g., the Group's assets, IT systems, information or personnel. The two greatest integrity risks identified within Vattenfall are non-compliance with competition laws and corruption.

Risk management activities during the year

Health and safety are crucial and a guiding principle in our day-to-day operations, with the goal to have zero injuries and no work-related illnesses. We have introduced a health and safety maturity indicator throughout the organisation that will enable proactive rather than reactive management. Early results show that the programme has been successful in reducing Lost Time Injury Frequency (LTIF). Monitoring and controlling of health and safety risks are covered in the various risk management systems of the respective business areas or staff functions.

To support our strategy we have put greater emphasis on hiring and developing talent in digitalisation and project management, among other areas. Our pilot project for driving individual performance and development has been successful and continued to be rolled out during the year. However, detailed attention is required to balance the need to be lean and agile, with the need to attract the right people and develop all employees to their fullest.

We have zero tolerance for bribery and corruption. To ensure compliance, we have implemented integrity instructions, and training and e-learning programmes are conducted to increase awareness (read more on page 61). The "four eyes principle" is applied to protect assets and information from improprieties and fraud.

Risks related to High Performing Operations

In order to be competitive and achieve our strategic objectives, we will accelerate our activities in several areas. This includes raising our ambitions for efficiency and further reducing costs. Digitalisation will be crucial for achieving financially sustainable results.

Risks

- Operational asset risks related to our electricity and heat generation plants, including nuclear power availability, dam failure, and damage to distribution networks, which could have significant negative financial and non-financial consequences
- Human rights violations in the supply chain may result in negative impacts on the brand and trust, and, in the worst case, potentially lead to the loss of our licence to operate, delays in construction projects, or operational disruptions. Increased reliance on partners could result in cooperation with parties whose core values are not in line with ours. Additionally, a recent court ruling in Sweden has increased expectations on companies to avoid or remediate impacts on indigenous people
- The risk of environmentally hazardous emissions related to, for example, accidents or incidents resulting from an explosion, fire, oil spill or leak of hazardous substances, which could have financial, non-financial and regulatory repercussions
- The costs of disposing nuclear waste in Sweden are increasing, and the autumn was full of legislative discussions, also in relation to the permit to build management and disposal systems
- In 2017, Vattenfall was the target of a couple of external fraud attempts via phishing
- As more data is collected and analysed, the risk associated with data and privacy breaches increases

Risk management activities during the year

An important part of the management of operational asset risks involves a systematic inspection programme, continuous control of plant conditions, and effective maintenance. Our structured maintenance strategy allows us to perform the necessary upkeep for safe and reliable operations while simultaneously reducing maintenance costs. Nuclear power safety and dam safety are special focus areas for Vattenfall's Board of Directors. Vattenfall's Corporate Independent Nuclear Safety Oversight (CINSO) unit is responsible for overseeing nuclear power safety at the Group level.

We have a Code of Conduct for Suppliers and perform risk assessments and reviews of our suppliers. The updated Code of Conduct for Suppliers was implemented in 2017. We continued to expand our human rights efforts internally and throughout our value chain. Furthermore, we conducted a thorough human rights risk assessment of Colombian coal. Read more on page 165.

Identification and management of environmental risks are handled by the respective business areas. The main principles of our environmental work are defined in the Vattenfall Environmental Management System, which is part of our overarching Vattenfall Management System (described on page 76).

In Sweden, the government has decided to increase the fee payable to the Swedish Nuclear Waste Fund per nuclear-generated kWh and to extend the lifetime of the remaining reactors in the calculation model. In Germany, Vattenfall has paid in the expected amount to the German Nuclear Fund to mitigate risks associated with nuclear waste disposal and thereby transferred the responsibility to the German state.

Finally, we have started a Group-wide GDPR[1] initiative to identify existing gaps and opportunities to mitigate associated risks and ensure that no sensitive data is stored outside of Sweden. The integrity of our data and the protection of our customers' privacy are key focus areas.

[1] The EU General Data Protection Regulation.

Market risk - commodities including electricity

Market risk for electricity and commodities refers to the risk of Vattenfall failing to achieve its financial targets as a result of an adverse change in commodity prices. Following the divestment of the lignite operations, Vattenfall's portfolio and risk exposure have changed substantially. As a result, Vattenfall's price hedging strategy is more restrictive than previously and is focused primarily on the Nordic countries.

Risk management activities

Through our asset ownership and sales activities we are exposed to electricity, fuel, and CO_2 emission allowance prices, which are affected by several fundamental factors, such as the global macroeconomic situation, local supply, demand, and political decisions.

We work in the wholesale trading market to hedge our electricity position and fuel requirements through physical and financial forward contracts and long-term customer contracts. Long-term customer contracts pertain to time horizons in which there is no possibility to hedge prices in the liquid part of the futures market, and stretch as far as 2026. The total hedged volume for the period 2019–2026 is 51 TWh, where most is hedged in the beginning of the period, with falling volumes towards the end. The Vattenfall Risk Committee (VRC) decides how much generation is to be hedged within the mandates issued by the Board of Directors. To measure electricity price risk, we use methods such as Value at Risk (VaR) and Gross Margin at Risk along with various stress tests. The price risk for uranium is limited, as uranium accounts for a relatively small proportion of the total cost of nuclear power generation.

Following the sale of the lignite operations in Germany, the dominant risk exposure is now coupled to Nordic nuclear and hydro power baseload generation. In addition, Vattenfall's continuing operations generate a higher share of regulated revenue from distribution, heat and tendered wind power, which reduces the total risk exposure on the Continent (Germany and the Netherlands). Vattenfall continues to have some price exposure between electricity and used fuel on the Continent. Such an exposure has a lower risk profile than in the Nordic countries. The following table and chart provide an indication of the current percentage of our expected electricity generation that is hedged as well as an average indicative price level. The hedge level is based on an internal risk management model that uses simulations to reflect both future possible price scenarios and the volume risk associated with hydro power generation.

Continental market

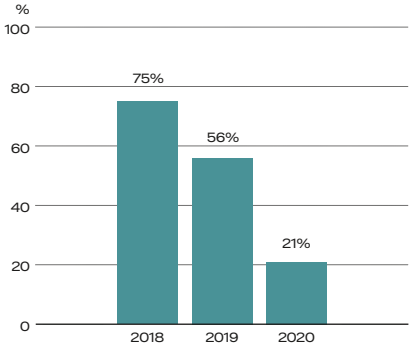
The table below shows the impact of changes in commodity prices on the expected future operating profit before tax. The calculation includes both the expected production and hedge levels. However, it does not reflect possible changes in expected generation in response to changes in price levels nor the interrelationship between fuel and power prices. Both of these factors tend to reduce the impact.

Nordic market

Average indicative Nordic hedge prices as per 31 December 2017.

EUR/MWh	2018	2019	2020
Nordic incl. DE proxy	27	27	31

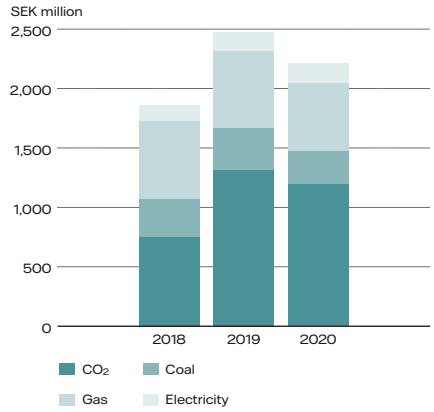
Vattenfall's estimated Nordic hedge ratio (%) as per 31 December 2017



Sensitivity analysis

In addition to commodity market risk resulting from our assets and sales activities, Vattenfall's Board of Directors has given the CEO a risk mandate to allow discretionary risk-taking and trading in the wholesale market. Most of our risk exposure in the ancillary trading portfolio is based on market prices (mark-to-market). In cases where market prices cannot be observed, modelled prices are used (mark-to-model). Mark-to-model positions arise mainly in asset and sales-related portfolios, see Note 40 to the consolidated accounts, Financial instruments. Management of such valuation models is strictly regulated, and approval is required from the risk organisation before they may be used.

Sensitivity analysis - impact of price movements (+/-10%) on operating profit



The sensitivity analysis shows the impact that variations in market prices can have on Vattenfall's Continental operating profit. The exposure of Vattenfall's hedges for electricity and fuel prices is monitored daily. The effect of price movements increases as the share of exposure that is not hedged increases. The exposure for the next-coming year is hedged to a higher degree than the exposure that is expected three years ahead.

The analysis is based on the assumption that risks are independent of each other and are based on 252 trading days in a year. Prices and positions are stated as per 29 December 2017. For example, a movement of +10% in the price of electricity in 2018 would have an impact on operating profit of SEK +749 million. Observed yearly volatilities for 2017 are shown in the far-right column in the table below.

Market-quoted risks

	+/-10% impact on future profit before tax, SEK million[1]			Observed yearly volatility,[2] %
	2018	2019	2020	
Electricity	+/- 749	+/- 1,315	+/- 1,194	18% - 19%
Coal	-/+ 320	-/+ 350	-/+ 275	22% - 23%
Gas	-/+ 658	-/+ 651	-/+ 577	14% - 16%
CO_2	-/+ 130	-/+ 158	-/+ 167	47% - 48%

1 The denotation +/- entails that a higher price affects operating profit favourably, and -/+ vice versa.
2 Observed yearly volatility in 2017 for daily price movements for each commodity, based on forward contracts for the period 2018–2020. Volatility normally declines the further ahead in time the contract pertains to.

Volume risk

Volume risk pertains to the risk for deviations between anticipated and actual delivered volume.

Risk management activities
In hydro power generation, volume risk is managed by analysing and forecasting historical weather data, including such factors as precipitation and snowmelt. Volumes are managed by improving and developing forecasts for electricity consumption. There is a correlation between electricity prices and generated electricity volume. The impact of the price of electricity on our electricity generation volume is therefore included in calculations of price sensitivity in the sensitivity analysis of market-price risks above. Volume risk also arises in the sales activities as deviations in the anticipated volumes versus actual volumes delivered to customers. Here, too, improved monitoring and forecasting capabilities are the most efficient risk management instrument.

Liquidity risk

Liquidity risk refers to the risk of Vattenfall not being able to finance its capital needs and arises if asset values at maturity do not match those of liabilities and other derivatives.

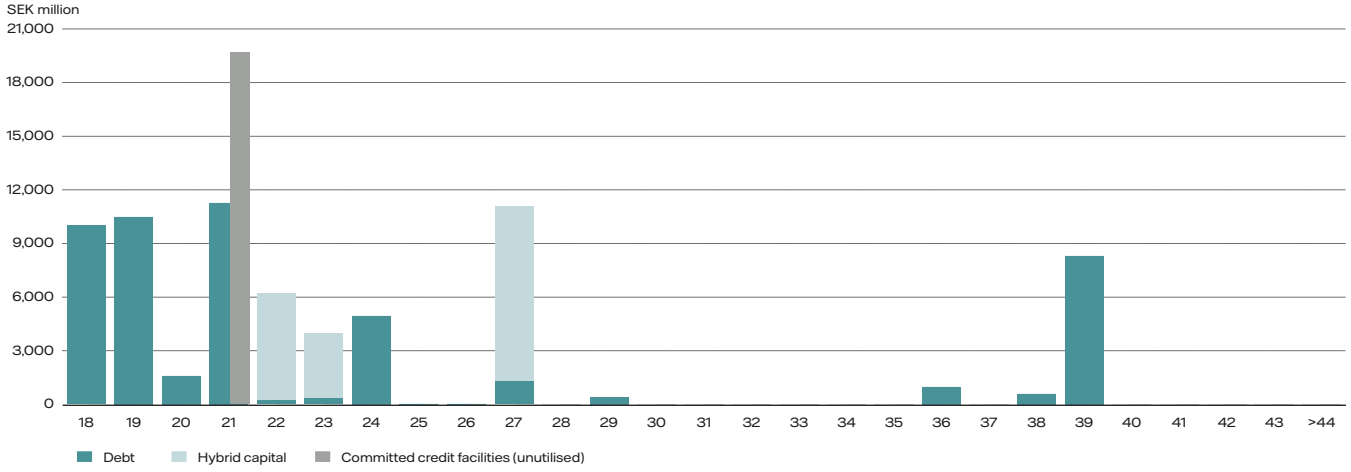
Risk management activities
Access to capital and flexible financing solutions are ensured through several types of debt issuance programmes and credit facilities. The maturity profile of our debt portfolio is shown in the chart below. The Group has a defined target for its short-term accessibility to capital. The goal is that funds corresponding to no less than 10% of the Group's sales, or the equivalent of 90 days' stressed liquidity needs of the business (whichever is higher) shall be available. As per 31 December 2017, available liquid assets and/or committed credit facilities amounted to 28% (36%) of net sales.

Vattenfall is committed to maintaining financial stability, which is reflected in the company's long-term targets for capital structure.

On 7 June 2017 Standard & Poor's affirmed Vattenfall's long-term BBB+ rating and short-term A-2 rating. On 18 July 2017 Moody's affirmed Vattenfall's long-term A3 rating and Baa2 rating for hybrid bonds.

The outlook for Vattenfall's rating was revised from negative to stable by both Moody's and Standard & Poor's. Vattenfall does not have an imminent refinancing need. Given that credit spreads narrowed during 2017, affected by the decision of the European Central Bank (ECB) to purchase corporate bonds, we believe that we have good access to the capital markets.

Maturity profile for Vattenfall's loans as per 31 December 2017[1]



[1] Excluding loans from minority owners and associated companies.

Borrowing programmes and committed credit facilities

		Maximum aggregated amount		Maturity		Used portion, %		Reported external liabilities, SEK million	
	Currency	2017	2016	2017	2016	2017	2016	2017	2016
Borrowing programmes									
Commercial paper	SEK	15,000	15,000	–	–	3	0	0	0
Euro Commercial paper	EUR	2,000	2,000	–	–	36	19	4,192	3,602
Euro Medium Term Note	EUR	10,000	10,000	–	–	43	46	45,516	49,530
Committed credit facilities									
Revolving Credit Facility[1]	EUR	2,000	2,000	2021	2021	–	–	–	–

[1] Back-up facility for short-term borrowing.

Committed credit facilities consist of a EUR 2.0 billion Revolving Credit Facility that expires on 10 December 2021, with an option for one-year extension.

The maturity structure pertains to the debt portfolio excluding loans from minority owners and associated companies, which amounted to SEK 10,831 million (12,929) for 2017. Further information about the maturity structure of loans is provided in Note 33 to the consolidated accounts, Interest-bearing liabilities and related financial derivatives.

Interest rate risk

Interest rate risk refers to the negative impact of changed interest rates on the Group's income statement and cash flow.

Risk management activities

We quantify interest rate risk in our debt portfolio in terms of duration, which describes the average term of fixed interest. The norm duration is based on the company's current financing need and desired interest rate sensitivity in net interest income/expense. Duration is to have a norm of five years with a permissible variation of +2/-1 year. The duration of the Group's debt portfolio at year-end was 4.31 years (5.55) including Hybrid Capital.

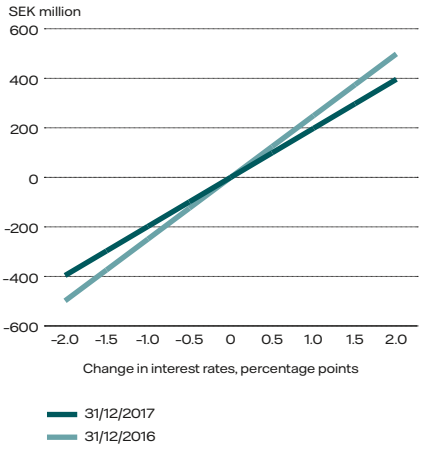
See the table below for the remaining fixed rate term in our debt portfolio.

Remaining fixed rate term in debt portfolio

	Debt		Derivatives		Total	
SEK million	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
< 3 months	7,891	10,311	19,660	21,959	27,551	32,270
3 months-1 year	5,503	489	1,558	-495	7,061	-6
1-5 years	26,411	28,208	-10,901	-10,569	15,510	17,640
> 5 years	29,814	36,071	-9,930	-14,174	19,884	21,898
Total	**69,619**	**75,080**	**388**	**-3,278**	**70,007**	**71,802**

The debt portfolio includes loans and interest rate derivatives in order to steer the duration of borrowing. Negative amounts are explained by the use of derivatives, such as interest rate swaps and interest rate forwards. The sum of derivatives is not equal to zero due to currency effects. Figures are exclusive of loans from minority owners and associated companies, totalling SEK 10,831 million for 2017 (12,929). The average financing rate as per 31 December 2017 was 4.45% (4.42%). All figures in nominal amounts.

Interest rate sensitivity, excluding loans from minority owners and associated companies



The interest rate sensitivity analysis shows how changes in interest rates affect the Vattenfall Group's interest income and expenses (before tax and including capital gain/losses on interest rate derivatives) within a 12-month period given the Group's current structure of borrowing at fixed interest rates. With the same method and an assumption that interest rates would rise by 100 basis points, the impact on the Vattenfall Group's equity after tax would be SEK -155 million (-194), including derivatives and Hybrid Capital, but excluding loans from minority owners and associated companies. All figures in nominal amounts.

Currency risk

Currency risk refers to the negative impact of changed exchange rates on the Group's income statement and balance sheet.

Risk management activities

We are exposed to currency risk through exchange rate movements attributable to future cash flows (transaction exposure) and in the revaluation of net assets in foreign subsidiaries (translation or balance sheet exposure).

Currency exposure in borrowing is limited by using currency interest rate swaps. We strive for an even maturity structure for derivatives. Derivative assets and derivative liabilities are reported in Note 23 to the consolidated accounts, Derivative assets and derivative liabilities.

We have limited transaction exposure, since most generation, distribution and sales of electricity take place in the respective local markets. Sensitivity to currency movements is therefore relatively low. All transaction exposure that exceeds a nominal value equivalent to SEK 10 million is to be hedged immediately when it arises.

The target for hedging translation exposure is to, over time, match the currency composition in the debt portfolio with the currency composition of the Group's funds from operations (FFO).

Vattenfall's largest exposure is in EUR, totalling SEK 71,333 million (2016: 70,309). Of this amount, 43% (43%) was hedged at year-end. For further information, see Note 42 to the consolidated accounts, Specifications of equity. With respect to currency movements, a 5% change in exchange rates, for example, would affect the Group's equity by approximately SEK 2.7 billion (2.4), where a strengthening of the currencies shown in the table in Note 42 to the consolidated accounts would result in a positive change in equity.

Debt portfolio, breakdown per currency

	Debt		Derivatives		Total	
Original currency	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
DKK	0	3,010	–	–	0	3,010
EUR	43,843	43,596	5,597	5,431	49,440	49,027
GBP	11,457	14,200	-2,958	-2,974	8,500	11,225
JPY	1,925	2,044	-1,925	-2,044	0	–
NOK	547	575	-547	-575	0	–
PLN	0	0	–	–	0	0
SEK	8,563	8,031	3,504	509	12,068	8,540
USD	3,283	3,625	-3,283	-3,625	0	–
Total	**69,619**	**75,080**	**388**	**-3,278**	**70,007**	**71,802**

The table shows the currency risk in the debt portfolio and the currencies that Vattenfall is exposed to. The level of debt, and thus the currency risk, decreased in 2017 compared with 2016. Figures above are exclusive of loans from minority owners and associated companies, totalling SEK 10,831 million (12,929). All figures in nominal amounts.

Consolidated operating income and expenses per currency, %

	Income		Expenses	
Currency	**2017**	**2016**	**2017**	**2016**
EUR	83%	71%	69%	75%
SEK	14%	24%	11%	19%
GBP	1%	3%	16%	2%
DKK	1%	1%	1%	1%
Other	1%	1%	3%	3%
Total	**100%**	**100%**	**100%**	**100%**

The values are calculated based on a statistical compilation of external operating income and expenses. Changes in inventories and investments are excluded.

Credit risk

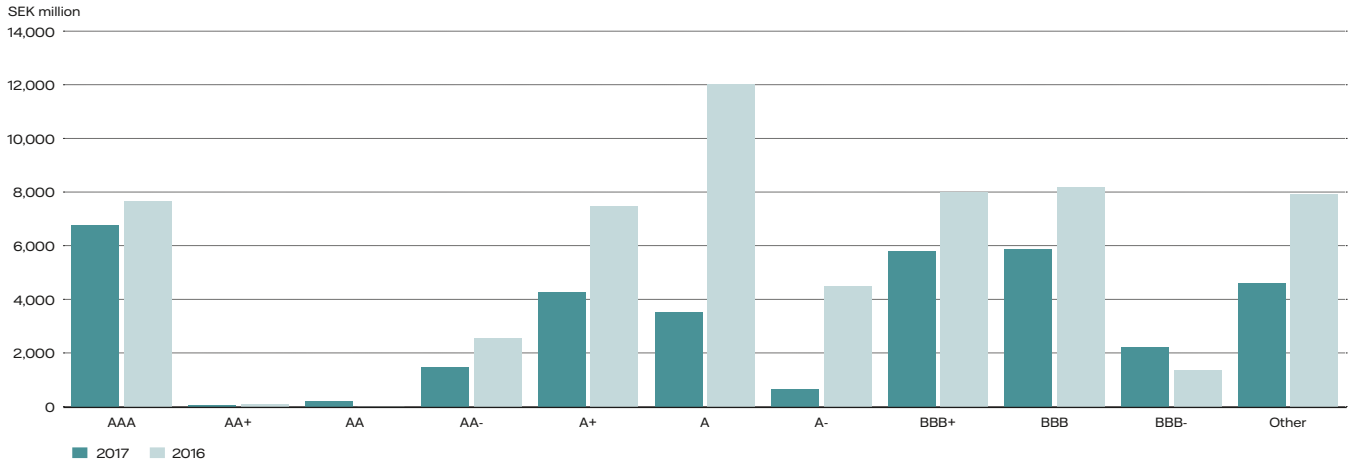
Credit risk can arise if a counterparty cannot or fails to meet its obligations, and exists in all parts of Vattenfall's operations.

Risk management activities

We have a strict framework for governing and reporting credit risks to ensure that risks are monitored, measured and minimised so that the total credit exposure is kept within the Group's risk appetite. The company's credit risk management involves the analysis of its counterparties, reporting of credit risk exposures, contract negotiations and proposals for risk mitigation measures (e.g., obtaining collateral).

Credit risk exposure per rating class in SEK million is shown in the chart below.

Counterparty exposure per rating class

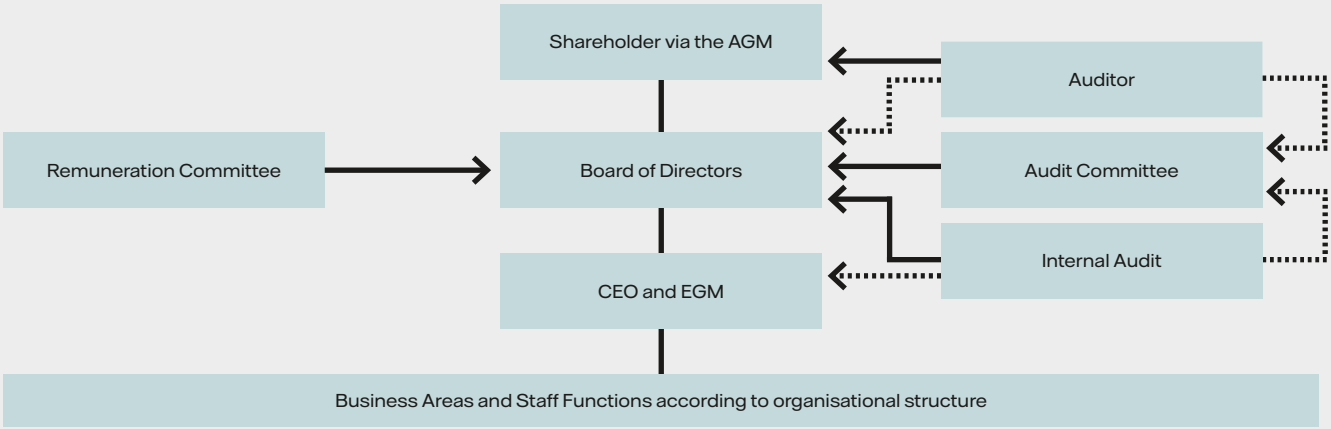


The chart shows exposures to Vattenfall's counterparties where the exposure is greater than SEK 50 million per counterparty, broken down per rating classification according to Standard & Poor's rating scale. Counterparties are reviewed and approved in line with Vattenfall's credit mandates and policies. Smaller exposures are considered to have such a large diversification effect that the net risk for Vattenfall is judged to be low. Exposures in procurement, sales in France, and heat are not included. Other financial assets (that are neither past-due nor impaired) are considered to have good creditworthiness. The values for "Other" in the chart include mostly counterparties covered by policy and limit exceptions, mainly pertaining to long-term sales contracts.

Corporate Governance Report

The following pages include information on corporate governance during the 2017 financial year, as prescribed by law and the Swedish Corporate Governance Code. Supported by good corporate governance – with effective organisational structure, internal control and risk management – Vattenfall's business can be driven towards the set targets and in accordance with Vattenfall's principles. The Corporate Governance Report has been reviewed by the company's external auditor.

Governance and reporting structure



Vattenfall's corporate governance model
The Parent Company of the Vattenfall Group, Vattenfall AB, is a Swedish public limited liability company with registered office in Solna. Vattenfall AB is thereby subject to the provisions of the Swedish Companies Act. The main decision-making bodies are the Annual General Meeting (AGM), the Board of Directors, and the President. The Board of Directors is elected by the Annual General Meeting. The Board, in turn, appoints the President, who is responsible for the day-to-day administration of the company in accordance with the Board's guidelines and instructions.

Application of the Code
Vattenfall adheres to the Swedish Corporate Governance Code ("the Code"). However, since Vattenfall is wholly owned by the Swedish state, certain stipulations in the Code are not applicable. This applies to the matter of reporting on board members' independence, among other things. In addition, Vattenfall also deviates from the Code with respect to the following points:

Point 1.3, pertaining to the requirement that the nomination committee shall propose a person to serve as AGM chairman. Due to its ownership structure, Vattenfall has no nomination committee. Election of an AGM chairman is done at the AGM in accordance with the stipulations of the Swedish Companies Act and the Swedish state's ownership policy.

Chapter 2, pertaining to the requirement that the company shall have a nomination committee. The nomination process for the Board and auditors is conducted in accordance with the Swedish state's ownership policy and is described below. Thus the references to the nomination committee in points 1.2, 1.3, 4.6, 8.1 and 10.2 are not applicable either. However, information on the nomination of board members for new election or re-election is posted on the company's website in accordance with point 2.6.

Important external and internal rules and regulations for Vattenfall

External rules and regulations
- Swedish and foreign legal rules, particularly the Swedish Companies Act and the Swedish Annual Accounts Act
- The Swedish state's ownership policy
- The Swedish Corporate Governance Code ("the Code")
- Stock exchange rules[1]
- International Financial Reporting Standards (IFRS) and other accounting rules
- The Global Reporting Initiative (GRI) Standard 2016

Internal rules
- The Articles of Association
- The Board's and committees' Rules of Procedure, including the CEO's instruction and the instruction for reporting to the Board
- The Vattenfall Management System (VMS), including the Code of Conduct, and other internal governance documents

[1] Vattenfall follows the stock exchange rules that apply for companies that have fixed-income instruments registered on Nasdaq Stockholm and other marketplaces.

Vattenfall AB's Articles of Association and continuously updated information about corporate governance at Vattenfall are available on Vattenfall's website: vattenfall.com (original Swedish documents available on vattenfall.se). The website is also a source for previous corporate governance reports, documentation and video presentations from the most recent general meetings, and links to the Swedish state's ownership policy, the Swedish Corporate Governance Code and Vattenfall's Code of Conduct.

Shareholder and general meetings

Vattenfall AB is wholly owned by the Swedish state. The shareholder's right to make decisions about Vattenfall's affairs is exercised at the Annual General Meeting and other general meetings. Through a general meeting resolution on the content of the Articles of Association, the owner makes decisions on the company's operations. In accordance with the Swedish state's ownership policy, the company's financial targets are also decided on by a general meeting. By law, the AGM of Vattenfall AB is to be held yearly within six months after the end of the financial year and not later than 30 April in accordance with the Swedish state's ownership policy. Notice of the AGM is issued not earlier than six weeks and not later than four weeks before the meeting is to be held.

Annual General Meeting 2017
Vattenfall held its 2017 AGM on 27 April. The company's owner, the Swedish state, participated at the AGM through its owner representative. The President, auditor and quorumed Board were also in attendance. Fredrik Rystedt was elected as a new director on the Board. Staffan Bohman had declined re-election. A new feature compared to previous years was that the state's ownership policy and the government's guidelines for external reporting in companies with state ownership were expressly resolved by the AGM. Members of Parliament were given the opportunity to ask questions during the AGM, and an open Q&A session was arranged after the meeting, in accordance with the Swedish state's ownership policy. The AGM was open to the general public and was aired live via webcast.

The 2018 AGM will be held on 25 April in Solna, Sweden.

Extraordinary General Meeting 2017
Vattenfall AB held an extraordinary general meeting on 12 December 2017. As proposed by the owner, the meeting resolved on new financial targets for profitability and the capital structure, as well as a revised dividend policy. A more detailed description of the financial targets can be found on page 11.

Duties of the Annual General Meeting

- Elect the Board of Directors, the Chairman of the Board and the auditors, and decide on their fees
- Adopt the income statement and balance sheet for Vattenfall AB and the Vattenfall Group
- Decide on distribution of the company's profit
- Grant discharge from liability for the board members and the President
- Decide on guidelines for remuneration of senior executives
- Decide on other matters of business prescribed by law or the company's Articles of Association

Board of Directors

The Board's duties
The Board's fundamental duties are laid out in the Swedish Companies Act and the Code. Each year the Board adopts its Rules of Procedure and a number of instructions. The Rules of Procedure and instructions regulate such matters as reporting to the Board, allocation of duties between the Board, the President and the Board's committees, the Chairman's duties, the form and content of board meetings, and the evaluation of the work of the Board and the President.

The Board's Rules of Procedure stipulate that the Board shall set the overarching targets for Vattenfall's operations, decide on Vattenfall's strategy for achieving those targets, and ensure that suitable systems are in place for monitoring and controlling Vattenfall's operations, risks and financial position in respect of the set targets. The Board is responsible for approving major investments, acquisitions and divestments, and for adopting central policies and instructions. The Board shall also approve certain important contracts, including contracts between Vattenfall and the President and other persons in the Group who have been defined by the AGM as being senior executives. The Board's duties pertain to Vattenfall AB as well as the Vattenfall Group. Vattenfall's General Counsel serves as secretary to the Board of Directors.

The Chairman leads the work of the Board in accordance with the Swedish Companies Act and the Code, and is responsible for – among other things – ensuring that the board members receive relevant information, contacts with the owner on ownership matters, and serving as a liaison between the owner and the Board. According to the Rules of Procedure, the Board – through the Chairman – shall coordinate its views with representatives of the owner when the company is facing particularly important decisions.

Board meetings
According to the Board's Rules of Procedure, the Board shall hold eight to twelve regular board meetings every year. In addition to the regular meetings, the Board is convened when necessary. The agenda of every regular meeting shall include the following items of business:

- The Group's business situation
- Financial report for the Group
- Reports from board committees, when committee meetings have been held
- Matters that are not handled by the President in the day-to-day administration
- Other matters of material importance for the Group

In addition, certain items of business are included on the agenda every year, in accordance with the yearly planning in the Board's Rules of Procedure. Investments approved by the Board are followed up by

the Board one year after their commercial operation date.

The Board holds at least one board seminar every year. At these seminars the Board receives more detailed information and discusses Vattenfall's long-term development, strategy, competitive situation and risk management. The Executive Group Management participates at the board seminars.

The Board met eleven times in 2017, including the statutory meeting and two per capsulam meetings.

Appointment of the Board

For companies that are wholly owned by the Swedish state, uniform and joint principles for a structured nomination process apply. These principles are set forth in the Swedish state's ownership policy and supersede the Code's rules on drafting work for decisions on the nomination of board members and auditors.

The board nomination process in the Swedish Government Offices is coordinated by the Ministry of Enterprise and Innovation. The competency needs are analysed on the basis of the company's operations, situation and future challenges as well as the Board's composition and evaluations of the Board that have been carried out. Included in the Government Offices' nomination process is a continuous evaluation of all the state-owned company boards. Thereafter, any recruitment needs are determined and recruitment work is initiated. Once this process has been completed, the nominations are publicly announced in accordance with the Code; however, no account is made regarding directors' independence vis-à-vis the company, the company's management and the owner. Vattenfall provides orientation training for new directors who are elected by the AGM.

The Swedish state's ownership policy stipulates that the selection of board members shall be made from a broad recruitment pool in the aim of soliciting expertise of both women and men as well as persons with varying background and experience. Discrimination based on gender, transgender identity or expression, ethnic origin, religion or other faith, functional disability, sexual orientation or age may not take place.

At the 2017 AGM the owner's representative presented a motivating statement on the Board's composition as well as on the changes that had been proposed. In summary, the Board's composition – with the proposed changes and in respect of the company's operations, stage of development and conditions in general – was judged to be suitable and distinguished by diversity and breadth regarding the directors' competence, experience and background, as well as fulfilling the government's goal on gender balance.

More detailed information on the board nomination process is provided in the Swedish state's owner policy, at regeringen.se.

The Board's composition

Vattenfall's Articles of Association stipulate that the Board of Directors shall have, in addition to the employee representatives, a minimum of five and a maximum of ten members without deputies. The directors are elected annually by the Annual General Meeting, which also elects the Chairman of the Board.

In 2017 the Board was composed of nine directors elected by a general meeting until 6 October, when Hilde Tonne resigned after she had accepted to become the Chair of another energy company. For the time after 6 October, the Board was composed of eight directors. No member of the Executive Group Management (EGM) was a director on the Board. Lars G. Nordström was Chairman of the Board. By law, the unions are entitled to appoint three board members plus three deputies, and they exercised this right. One director, Hilde Tonne, was a foreign (Norwegian) citizen. Biographical information about the board members is provided on pages 80–81.

The Board's main items of business in 2017

- Items according to the Rules of Procedure
- Financial targets
- Cost-cutting and cost-cutting targets
- Outsourcing in HR, Finance and Procurement
- Brand strategy
- Strategy for the wind power and photovoltaic operations
- Investments in new wind farms
- Nuclear power issues in Germany, new legislation, and agreements with the German government
- Nuclear waste management in Sweden
- Investments in increased safety (independent core cooling) at the Ringhals nuclear power plant
- District heating investments in Berlin
- Acquisitions in Sweden and the UK
- Large electricity and heat supply contracts
- Hydro power environmental fund ("Vattenkraftens Miljöfond")
- Coal sourcing from Colombia
- Divestment of real estate
- Remuneration items
- Tax policy

Sustainability issues addressed by the Board

The Swedish state's ownership policy stipulates that companies with state ownership shall integrate sustainability in their corporate governance and act exemplarily in this field. The companies are to operate in a manner that promotes sustainable development, i.e. "a development that meets the needs of today without jeopardising future generations' ability to meet their needs".

Of particular importance is that companies with state ownership promote a healthy and safe work environment, respect for human rights, good and decent working conditions, equality and diversity, reduced climate and environmental impact, good business ethics and active work on anti-corruption, and that they ensure that no abuses occur due to their special status of being state-owned and exhibit responsible conduct in the tax area.

The annual plan for the Board and its committees includes recurring items in several of the areas identified by the owner. These areas are furthermore included as an integral part of the handling of concrete Board matters. The Board has also stressed that Vattenfall's four strategic objectives in themselves constitute sustainability objectives and that one aim is that sustainability issues should be an integral part of Vattenfall's operations.

The Board has adopted an overarching sustainability policy as a complement to individual policies, such as the environmental policy and the Code of Conduct. The sustainability policy stipulates that for Vattenfall, sustainability entails taking responsibility for future generations by contributing to sustainable development in society – economically, environmentally and socially. Further highlighted is that access to energy is a precondition for our society to function and to develop in a sustainable way. The sustainability policy also stipulates that environmental issues are a main focus area, based on a decision by Swedish Parliament in 2010 that Vattenfall shall operate a commercial energy business that enables the company to be among the leaders in developing environmentally sustainable energy production. This parliamentary decision is also reflected in Vattenfall AB's Articles of Association.

Guidelines for directors' fees

Directors' fees and fees for committee work are set by the owner at the AGM, in accordance with the Swedish state's ownership policy. The 2017 AGM resolved in favour of increased fees to be paid to the Chairman and the directors on the Board, as well as for the Chairman and the members of the Audit Committee, while the fees to be paid to the Chairman and the members of the Remuneration Committee were unchanged. Information on directors' fees in 2017 is provided in the Annual and Sustainability Report, Note 46 to the consolidated accounts, Number of employees and personnel costs.

Evaluation of the Board's and the President's work

The Board evaluates its own work and the President's work once a year as part of efforts to develop the Board's work forms and effectiveness. This evaluation is conducted under the direction of the Chairman and is reported to the Board and the owner. The most recent board evaluation was begun at the board meeting on 26 October 2017. As in previous years, with the support of external consultants, the Board conducted a self-assessment using questionnaires, where the individual board members evaluated both their own and other board members' performance. This evaluation used a questionnaire for the Board as a whole, which each of the directors and deputy directors responded to, and a questionnaire for evaluation of the individual directors, responded to by the directors elected by a general meeting. The questions addressed Vattenfall's current challenges, management and organisation, the Board's effectiveness, composition and expertise, and its relationship with the owner, the Chairman and the President. The evaluation was reported on and discussed at the board meeting on 12 December 2017. As a follow-up to the written evaluation, the Chairman held discussions individually on a voluntary basis with each of the directors elected by a general meeting and jointly with the employee representatives.

Board committees

The Board has established two committees, which are described below, and has established Rules of Procedure for these. At the statutory board meeting the Board appointed a number of directors elected by a general meeting for each committee, of whom one serves as committee chair. In addition, the Board can, where necessary, establish other board committees or temporary work groups to address matters in defined areas. No such additional committees or temporary work groups were active in 2017. Information on the committees' composition is provided on pages 80–81.

The committees report their work to the Board at the next regular board meeting, whereby the committee chair presents a report accompanied by minutes from the committee meetings. Except for a few matters handled by the Audit Committee, the committees are only drafting bodies and make recommendations to the Board. The Board's legal responsibility under company law for the company's organisation and administration of the company's affairs is not constrained by the committees' work.

Audit Committee

The Audit Committee is responsible for meeting with Vattenfall AB's external and internal auditors on a regular basis in order to stay informed about the planning, focus and scope of the company's audit. The Audit Committee is also responsible for discussing coordination of the external and internal audit work and views of the company's financial risks. The committee prepares Internal Audit's budget, the Internal Audit Charter and the internal audit plan for resolution by the Board. It has the right, on behalf of the Board, to decide on guidelines for other services than auditing that Vattenfall may procure from the Group's auditors.

The Audit Committee meets prior to Vattenfall's publication of interim reports and when warranted by the prevailing conditions. The CFO and head of Internal Audit serve in a reporting role. The company's external auditors attend all regular meetings and report on their observations of the audit. During the entire year 2017 the committee had at least one member with accounting or auditing competence.

The Audit Committee's most important duties are:

- To oversee Vattenfall's financial reporting, including sustainability reporting
- With respect to financial reporting, to monitor the effectiveness of Vattenfall's internal control, internal audit and risk management
- To stay informed about the audit of the annual report and consolidated accounts as well as about the conclusions of the Supervisory Board of Public Accounts' ("Revisorsnämnden") quality control of auditing activities performed by the company's auditor
- To review and monitor the auditor's impartiality and independence
- To assist in the drafting of recommendations for decisions on the election of auditor by the Annual General Meeting
- To review and oversee the management of market and credit risks
- To conduct an annual evaluation of the external auditors' work

Remuneration Committee

The committee's duties include serving as a drafting body to ensure implementation and compliance with guidelines for remuneration of senior executives. Where applicable, it conducts drafting work for any special reasons that may exist in an individual case to deviate from the guidelines. It also conducts work for the Board's report on remuneration of senior executives in the annual report and, ahead of the Annual General Meeting, monitoring and following up the auditors' review.

The President serves in a reporting role on the Remuneration Committee.

The Remuneration Committee's most important duties are:

- To conduct drafting work for board decisions on matters regarding remuneration principles, and on remuneration and other terms of employment for members of the Executive Group Management and other senior executives
- To monitor and evaluate application of the guidelines for remuneration of senior executives, which the AGM, by law, is required to decide on as well as the applicable remuneration structures and levels of remuneration in the company
- To conduct drafting work for the Board's decisions regarding overarching remuneration principles in general, such as the general existence of, amount and structure of variable remuneration (for employees who are not senior executives)

Auditor

The Swedish state's ownership policy stipulates that the owner is responsible for election of auditors and that the auditors are to be appointed by the Annual General Meeting. Proposals for election of auditors and for auditors' fees are submitted by the Board and drafted by the company. The auditors are elected for a mandate period of one year, in accordance with the main rule in the Swedish Companies Act. Vattenfall's Articles of Association stipulate that the company shall have one or two auditors with or without one or two deputy auditors, or a chartered accounting firm as auditor.

At the 2017 AGM, the accounting firm Ernst & Young AB was re-elected as auditor. The accounting firm appointed Authorised Public Accountant Staffan Landén as auditor-in-charge. He has held this position since the 2015 AGM. Staffan Landén is also the auditor of, among others Nederman Holding AB, Semcon AB and Polygon AB, and is a stock exchange auditor appointed by Nasdaq Stockholm. The auditor has no assignments with companies that affect its independence as auditor of Vattenfall.

The auditor's audit assignment includes a review of the annual report, the consolidated accounts, the corporate governance report and the sustainability reporting. The auditor has access to minutes of board meetings and board committee meetings, as stipulated in the Board's Rules of Procedure. The Audit Committee has approved guidelines for how procurement of other services than auditing shall take place from the auditor. Consulting services provided by Ernst & Young AB from 2015 to 2017 mainly pertained to tax and accounting issues and studies of organisational issues.

At the 2017 AGM the auditor reported on the audit work in 2016 and on its review of compliance with the guidelines for remuneration of senior executives. The auditor reported on its review of the year-end accounts for 2017 to the entire Board at the board meeting on 6 February 2018 (without the presence of any person from the Executive Group Management), and also reported on its observations at the board meeting on 12 December 2017. In addition, the auditors performed a review of the half-year interim report.

In accordance with the Act on Auditing of State Activities, etc., the Swedish National Audit Office may appoint one or more auditors to participate in the annual audit. No such auditor was appointed in 2017.

The auditor's fees are payable according to an approved invoice. The Group's auditing costs are described in more detail in the Annual and Sustainability Report, in Note 17 to the consolidated accounts, Auditor's fees, and in Note 16 to the Parent Company accounts, Auditor's fees.

CEO and Executive Group Management

The President of Vattenfall AB, who is also Chief Executive Officer (CEO) of the Vattenfall Group, is responsible for the day-to-day administration in accordance with the Swedish Companies Act. The CEO in 2017 was Magnus Hall. An account of the President's remuneration is provided in the Annual and Sustainability Report, Note 46 to the consolidated accounts, Number of employees and personnel costs.

The CEO has set up internal bodies for governance of the Group and makes decisions independently or with the support of these bodies. The most important of these are the Executive Group Management (EGM) and the Vattenfall Risk Committee (VRC).

The EGM focuses on the Group's overall direction and addresses – within the framework of the CEO's mandate from the Board of Directors – matters of importance for the Group, such as certain investments. In the EGM, the Head of Strategic Development is responsible for sustainability issues. The VRC focuses on decisions pertaining to risk mandates and credit limits, among other things, and exercises oversight of the risk management framework.

Both of these bodies conduct preparatory drafting work on matters that are to be decided by the Board of Directors. Ahead of decisions made by the President in the EGM or VRC on major investments and transactions, the risk unit performs an independent risk analysis, which makes up part of the decision-making documentation.

Biographical information about the members of the EGM is provided on pages 80–81.

Internal Audit

Internal Audit is an independent and objective function that evaluates, recommends and monitors improvements to the effectiveness of Vattenfall's risk management, internal controls and governance processes throughout the Group. This also applies to compliance with Vattenfall's governance documents, including the Code of Conduct. The Internal Audit function is directly subordinate to the Board of Directors and Audit Committee, and performs its work in accordance with an established internal audit plan. Internal Audit's budget, the Internal Audit Charter and the internal audit plan are drafted by the Audit Committee and decided on by the Board of Directors. The Head of Internal Audit reports administratively to the President and informs the management teams of the business units and other units about audit activities that have been performed.

Internal governance

Principles, purpose and strategy
In 2017, Vattenfall's core values were replaced by four principles: Open, Active, Positive and Safety.

Vattenfall is striving to enable and accelerate climate-smart living entirely without the use of fossil fuels, which is expressed in the overall purpose to Power Climate Smarter Living. Accordingly, Vattenfall has set a target to be fossil free within one generation.

Vattenfall has four strategic objectives: The company shall be 1) Leading towards Sustainable Consumption and 2) Leading towards Sustainable Production. Achieving these requires 3) High Performing Operations and 4) Empowered and Engaged People. These four strategic objectives have been broken down into six strategic targets for 2020, which are further described in the Annual and Sustainability Report on page 10.

Vattenfall recognises its growing importance as an actor in a global value chain. With millions of customers, 25,000 suppliers and countless other stakeholders, Vattenfall's activities have impacts far beyond the boundaries of the Vattenfall organisation. Therefore, Vattenfall takes responsibility throughout the value chain. Vattenfall's purpose and strategy are well aligned with the UN's Agenda 2030 Sustainable Development Goals and will drive Vattenfall to make an important contribution to the global sustainable development agenda.

Governing business ethics
Vattenfall's internal Code of Conduct builds upon eight principles in the areas of Health and Safety, People, Customers and Suppliers, Business Ethics, Communication, Information Security, Company Resources, and the Environment. It includes references to the Vattenfall Management System (VMS), which elaborates on these principles. Information about the Code of Conduct is provided on the company's intranet in all of the company's languages and in connection with new hiring and training. There is also an e-learning programme on application of the Code of Conduct. Together these measures have contributed to employees' awareness of the Code of Conduct.

To ensure that the organisation acts in an ethical and non-corrupt manner, Vattenfall requires all employees to take personal responsibility by acting in accordance with the company's ethical guidelines, which are set forth in the Code of Conduct as well as in internal policies and instructions. Vattenfall believes that competition plays a decisive role for a market to function effectively and has zero tolerance for bribery and corruption. An important step in ensuring this is the training that is conducted within the Vattenfall Integrity Programme, which is described on page 61.

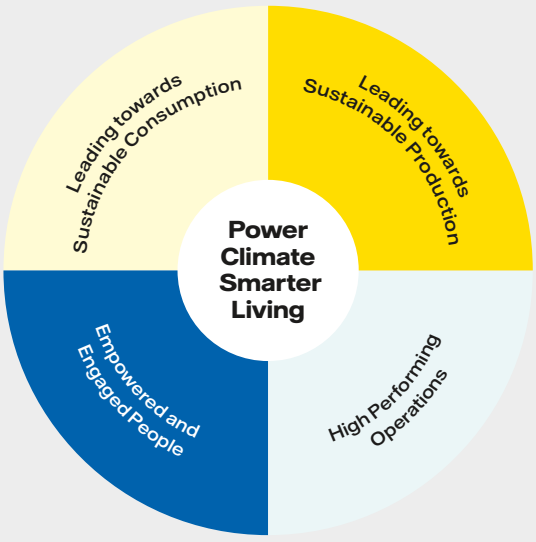
The Code of Conduct gives employees the opportunity to report incidents anonymously through a whistleblowing function staffed by locally appointed external ombudsmen (attorneys), to whom employees, consultants and contractors can turn to report suspected, serious improprieties that the whistleblower does not want to report internally via the normal reporting channels. Read more about reported incidents on page 61. Ongoing legal processes are described in Note 44 to the consolidated accounts, Contingent liabilities.

Vattenfall Management System
The most important internal rules for governing Vattenfall are found in the Vattenfall Management System (VMS). The VMS sets the framework that ensures that Vattenfall's governance adheres to formal requirements as well as to requirements made by the Board, the President, the business operations and the Staff Functions. It covers the overall governance that is necessary in Vattenfall, while local management systems cover other governance. The VMS is documented in binding governance documents. Certain central documents are approved by the Board of Directors of Vattenfall AB. The VMS is an integrated management system that applies for the entire Vattenfall Group, with the limitations that may arise from legal requirements, such as regarding the unbundling of the electricity distribution business. Special routines are in place to ensure adherence to the management system also by subsidiaries. In 2017 further simplification and continuing updates of the VMS were conducted. The evaluation with respect to knowledge about and compliance with the VMS has continuously been in focus.

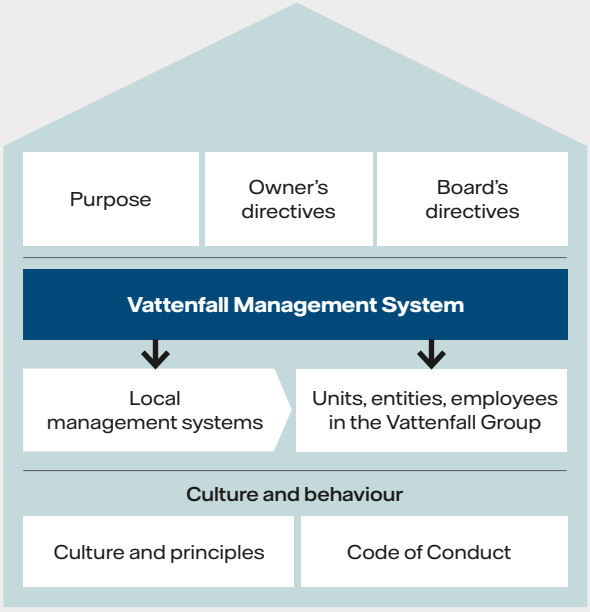
The policies lay out the company's direction. Vattenfall's governance with respect to sustainability issues is based on the sustainability policy along with a number of other policies:

- The environmental policy
- The health and safety policy

Four strategic objectives



Structure for the VMS and other governing rules



- The Code of Conduct
- The Code of Conduct for Suppliers, which addresses issues such as human rights, work conditions, the environment and anti-corruption, based on the UN Global Compact

Policies have also been drawn up in the areas of risk, dam safety and nuclear safety. Also, since 2017 the Board issues a general statement on Vattenfall's tax strategy.

The sustainability policy, the environmental policy, the Code of Conduct and the risk policy are decided on by the Board of Directors, while other policies are decided on by the President. The policies are accessible to employees on the intranet and are also communicated externally. However, Vattenfall does not require any acknowledgement by employees or management that they have read the policies.

The content of the company's policies is concretised in instructions within the VMS, such as in special instructions for matters concerning competition law and for countering bribery and corruption. Instructions in the VMS can also include concretisations of the content of the Board's Rules of Procedure, for example, with respect to the issuance of information as well as allocation of responsibilities and risk mandates. Instructions shall be implemented in the relevant organisation and acknowledged by the defined target group. Compliance is monitored and the content is continuously improved.

Vattenfall's Environmental Management System is integrated in the VMS. At year-end 2017 nearly 100% of Vattenfall's production and distribution portfolios had certified environmental management systems in accordance with ISO 14001. In addition, all the Group's business units are certified in accordance with OHSAS 18001 for occupational health and safety, and seven units have certified energy management systems in accordance with ISO 50001.

Organisation

Vattenfall's organisational structure comprises six Business Areas: Heat, Wind, Customers & Solutions, Generation, Markets and Distribution. The Business Areas are organised in five operating segments, where Generation and Markets make up a single operating segment. The central Staff Functions support and direct the business activities. The organisational structure has been formed to reflect Vattenfall's overall strategy for the coming years (see preceding page). For further information see pages 23–29.

The company structure differs from the business structure. Decisions are made primarily in the business organisation and, to the extent necessary or suitable, by subsidiaries' boards. Governance is conducted financially, non-financially (such as through Staff Functions), and operationally. Unit scorecards and the VMS are the most important governance tools.

Integrity organisation

The aim of integrity work at Vattenfall is to uphold integrity and protect the Group's reputation. Toward this end an organisational framework has been created which, within its area of responsibility, is tasked with ensuring transparency, understanding of applicable laws, guidelines and standards, and promoting compliance with these in all countries in which Vattenfall operates.

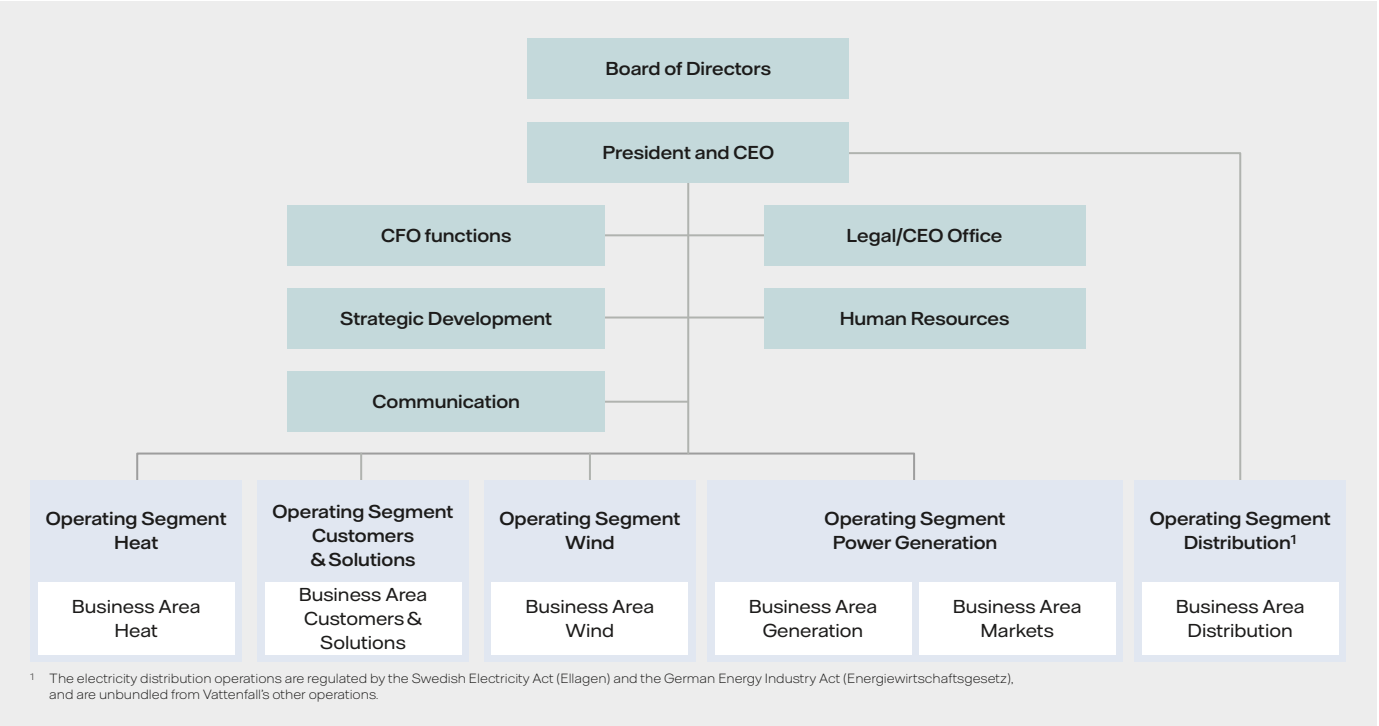
Integrity work at Vattenfall is organised according to the three lines of defence principle, with varying roles for risk ownership, control and advice, and quality assurance:

1. Ownership: The line organisation, which is responsible for compliance with laws and regulations within the unit
2. Control and advice: The integrity organisation, with reporting to the Group's General Counsel
3. Quality assurance: The Internal Audit unit

The Integrity organisation's area of responsibility covers competition matters, bribery and corruption, conflicts of interest, insider information, awareness of Vattenfall's Code of Conduct, and coordination of Vattenfall's whistleblowing function.

Within its area of responsibility the Integrity organisation supports Vattenfall in identifying, avoiding, managing and monitoring the risk for non-compliance with laws, other legal stipulations, regulations, norms and codes of conduct that are relevant for operations. Work within the Integrity organisation is carried out in accordance with an annual plan, which is approved by an Integrity Committee consisting of EGM members and others. The day-to-day work is aligned at meetings within the Integrity organisation and via regular follow-ups. The annual integrity work is summarised in an integrity report to the Board.

Current integrity issues in 2017 are described in more detail in the Annual and Sustainability report on page 61.



[1] The electricity distribution operations are regulated by the Swedish Electricity Act (Ellagen) and the German Energy Industry Act (Energiewirtschaftsgesetz), and are unbundled from Vattenfall's other operations.

Guidelines for remuneration of senior executives

Vattenfall AB applies the Swedish Government Offices' Guidelines for remuneration and other terms of employment for senior executives in state-owned companies, decided by the government on 22 December 2016. These guidelines are available on the Government Offices' website: regeringen.se.

The 2017 AGM approved Vattenfall's application of the guidelines with the deviation that instead of the definition of senior executive in the Swedish Companies Act, senior executives shall be defined on the basis of whether they have a significant impact on the Group's earnings, through use of the International Position Evaluation (IPE) model. Managers with positions of IPE 68 and higher are to be considered as senior executives. The Board's explanation for this deviation is stated in the 2016 Annual and Sustainability Report, on page 78.

Based on the AGM's definition, in 2017 a total of 14 persons, excluding the President, were covered by the stipulations on contracts with senior executives. Actions taken with respect to agreements with these executives were continuously reported to the Remuneration Committee and Board, which also decided on the entering into such agreements. Remuneration of senior executives and compliance with the adopted guidelines are described in more detail in the Annual and Sustainability Report, Note 46 to the consolidated accounts, Number of employees and personnel costs.

The Board and Remuneration Committee's report on compliance with the guidelines for remuneration of senior executives set by the AGM is posted on vattenfall.se (English translation is available on vattenfall.com).

The proposed guidelines ahead of the 2018 AGM are shown on page 84.

Internal control over financial reporting

This section describes the most important elements in Vattenfall's system of internal control and risk management in connection with financial reporting, as prescribed by the Swedish Annual Accounts Act and the Code. Vattenfall's framework for this control is based on the COSO framework, which has been developed by the Committee of Sponsoring Organizations of the Treadway Commission. Vattenfall's risks and risk management are further described on pages 63–69.

Control environment

According to the Swedish Companies Act and the Code, the Board of Directors has overarching responsibility for internal control over financial reporting. In this context the Board shall ensure that the company's organisation is structured in such a way that the bookkeeping, treasury management and the company's financial conditions in general are controlled in a satisfactory manner.

The Board's audit committee conducts drafting work for the Board on matters related to internal control over financial reporting and makes recommendations and proposals to ensure the reliability of reporting. The committee also informs the Board about the results of the audit and about the ways in which the audit contributed to the reliability of the financial reporting and about which function the committee has had.

The control environment is based on the allocation of authority between the Board and the President, which is set forth in the Board's Rules of Procedure, along with the reporting requirements made by the Board. The Board has also adopted Vattenfall's Code of Conduct, which lays out the overarching rules governing employee conduct.

The VMS is an integrated management system for the Vattenfall Group and is revised on a continuous basis (see also the section on internal governance on page 76). The VMS contains steering documents for all identified material areas, including roles and responsibilities, authority and risk mandates, decision-making processes, risk management, internal control, and ethics and integrity issues. The VMS lays out the "grandfather principle" and "four eyes principle" for decision-making. The VMS also stipulates which decision-making, oversight and advisory bodies exist within the Group, on top of those required by law.

Vattenfall has an internal financial control (IFC) process whose overall purpose is to ensure that controls are in place in the financial reporting.

Risk assessment

The Board addresses the Group's risk assessment and risk management process at an overarching level. The Board's audit committee conducts drafting work for evaluation and monitoring of risks and quality in financial reporting. The Audit Committee maintains continuous and regular contact with the Group's internal and external audit functions.

The Board's risk management and reporting is centrally coordinated via the Vattenfall Risk Committee (VRC). A continuous Enterprise Risk Management (ERM) process makes it possible to quantify and compare both financial and non-financial risks.

For the financial reporting, the IFC process serves as the framework for internal control that identifies and defines risks for material errors in the financial reporting. These are overseen by the CFO Function through regular reporting on tests performed of defined control points. The CFO Function is also responsible for performing regular analyses of risks related to financial reporting and for updating this framework. The external and internal auditors discuss Vattenfall's risk situation in connection with the planning work ahead of the annual audit.

Control activities and monitoring

Vattenfall applies the "three lines of defence" model, both for internal control over financial reporting and for management and control of risks in general.

The first line of defence consists of the business operations (Business Units and Staff Functions), which are responsible for managing risks.

The risk organisation, which is headed by the Chief Risk Officer (CRO), makes up the second line of defence and is responsible for monitoring and controlling risks. The CRO is accountable for the risk management framework and has the responsibility to secure risk governance and risk control. Included in the responsibility are processes related to, among other things, new products and certain contracts with long durations. The CRO provides information to the Board's audit committee and the Vattenfall Risk Committee on a regular basis.

The second line of defence also includes the Group Internal Financial Control Officer (IFCO), who is responsible for monitoring and control of risks in the financial reporting. Information about ineffective controls is provided to internal and external audit. Each incidence of ineffectiveness is risk-assessed in consultation with the first line of defence. Information about these risks is provided to the risk organisation.

Internal and external audit make up the third line of defence. Internal audit is, as further described above, an independent and objective function that oversees and evaluates the first and second lines of defence.

The Executive Group Management holds regular follow-up meetings with the heads of the Business Areas and Staff Functions regarding the financial outcome.

Operations are followed up on a quarterly basis via Business Performance Meetings, where outcomes, forecasts, important events and challenges (including status reports on Vattenfall's sustainability focus areas and sustainability targets) are discussed with the top management of each business unit to ensure that the organisation is performing in line with expectations.

The internal framework for internal control includes processes for self-assessments, monitoring, reporting and improvement of control activities in order to prevent, discover and correct errors in the financial reporting. Written confirmation of adherence to internal and external stipulations is part of these processes. This is done in particular through internal Representation Letters to management. Self-assessments are conducted via the Staff Functions for certain stipulations within the VMS and for matters concerning integrity and competition law, among other things.

The Group IFCO is responsible for the IFC process, which aims to strengthen the governance structure and effectiveness of controls. Continuous improvements to the IFC process are ensured through an annual evaluation and updating process.

The Board monitors and addresses the Group's financial situation at every regular board meeting, with a starting point from the financial report submitted by the President and the Chief Financial Officer.

The Board's monitoring of the effectiveness of internal control is conducted via the Audit Committee, which regularly receives status reports on the Group's internal control over financial reporting, in accordance with the IFC process. A financial report, including a report on accounting and sustainability issues, is presented at every regular Audit Committee meeting, and tax issues are reported on and followed up on a regular basis. The Audit Committee, in turn, reports to the Board on its most important observations and recommendations. The timing and forms of this reporting are set in the Board's and Audit Committees' respective Rules of Procedure.

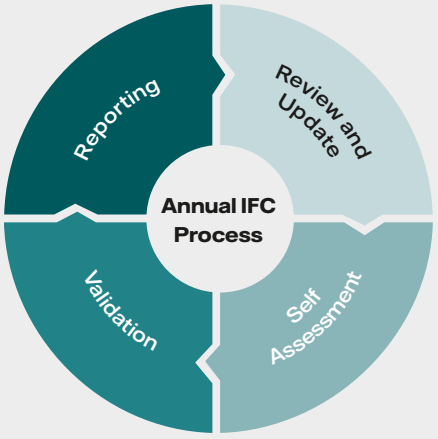
Information and communication

The Group's steering documents are accessible via Vattenfall's intranet. The forms for handling internal and external communication are documented in a VMS instruction which aims to ensure that Vattenfall is in compliance with legal as well as stock exchange rules, the state's ownership policy (including guidelines for external reporting), and other obligations. Accounting and reporting principles are laid out in a joint manual for the entire Group. Updates and changes in these policies and principles are communicated on a continuous basis via the intranet as well as at meetings with representatives of the Group's Business Areas and Staff Functions.

Reporting and follow-up reporting to the Board and EGM are part of monitoring activities. Internal Audit and the CRO also report on their observations to the Board's audit committee. Financial reporting includes interim reports, the year-end report and the annual report. In addition to these reports, financial information is provided to the Group's external stakeholders via press releases and Vattenfall's websites, in accordance with the Swedish Securities Market Act, among other things. Presentations and conference calls for financial analysts, investors and the media are held as a rule on the same day that reports are published. In addition, Vattenfall arranges a capital markets day once a year.

Three lines of defence

The Internal Financial Control (IFC) process



Reporting
Quarterly IFC status reporting and mid-year/year-end report to Audit Committee.

Review and Update
Implement improvements and correct errors in the IFC process and the IFC framework (list of IFC controls). Define the IFC scope for the forthcoming year.

Validation
Complementary evaluations of IFC control points, e.g., via on-site validations.

Self Assessment
A yearly questionnaire used to evaluate the status of the IFC control points and identify the need for corrective action.

Board of Directors

LARS G. NORDSTRÖM (1943)
Chairman of the Board
Education: Law studies
Other assignments: Chairman of the Finnish-Swedish Chamber of Commerce. Deputy Chairman of Nordea Bank. Board member of Viking Line Abp, the Swedish-American Chamber of Commerce and SNS. Member of the Royal Swedish Academy of Engineering Sciences (IVA). Honorary Consul for Finland in Sweden
Previous positions: Board member of TeliaSonera (2006–2010). Chairman of the Royal Swedish Opera (2005–2009). President and CEO of Posten Norden AB (2008–2011). Various executive positions with Nordea Bank (1993–2007), including as President and Group CEO (2002–2007). Various positions with Skandinaviska Enskilda Banken (1970–1993), including as Executive Vice President (1989–1993)
Elected: 2011
Committee assignment: Member of the Remuneration Committee
Board meeting attendance: 11/11
Committee meeting attendance:
RemCom: 6/6

FREDRIK ARP (1953)
Board member
Education: B. Sc. Economics, Honorary Doctor of Economics
Other assignments: Chairman of Nolato AB. Board member of Swedfund and Nuevolution AB
Previous positions: President and CEO of Volvo Car Corporation (2005–2008). CEO of Trelleborg AB (1999–2005), PLM AB (1996–1999), Trelleborg Industrier AB (1989–1996) and Boliden Kemi AB (1988–1989). Various positions in Trelleborg AB (1986–1989) and Tarkett (1979–1986)
Elected: 2014
Committee assignment: Audit Committee chair
Board meeting attendance: 11/11
Committee meeting attendance:
AC: 3/3
RemCom: 1/2

VIKTORIA BERGMAN (1965)
Board member
Education: Communication Executive Program at IFL/ Stockholm School of Economics. Berghs School of Communication
Other assignments: Chairman of the Board of Galber AB. Board member of Diab Group AB and Trianon AB
Previous positions: Member of Group Management and Senior Vice President Stakeholder Management & Corporate Sustainability E.ON Nordic, Board member of E.ON Försäljning, E.ON Kundsupport and E.ON Smart Living (2012–2014). Positions in Trelleborg Group (2002–2011), member of Group Management and Senior Vice President Corporate Communications Trelleborg Group (2005–2011). Various positions in Falcon Breweries/ Unilever (1989–1996), Cerealia Group (1987–1989)
Elected: 2015
Committee assignment: Member of the Remuneration Committee
Board meeting attendance: 10/11
Committee meeting attendance:
RemCom: 6/6

HÅKAN ERIXON (1961)
Board member
Education: B. Sc. International Business Administration and Economics
Other assignments: Chairman of the Board of Capacent Holding AB and Hemnet Sverige AB. Board member of Alfvén & Didrikson Invest AB
Previous positions: Chairman of the Board of Orio AB (publ) (formerly Saab Automobile Parts AB) (2012–2017). Member of the Nasdaq OMX Stockholm AB Listing Committee (2010–2016). Senior Advisor, Corporate Finance, Swedish Government Offices, which included work for the Swedish National Debt Office (2007–2010). Board member of Carnegie Investment Bank AB (2008–2009). Board member of Vasakronan AB (2007–2008). Various positions with UBS Investment Bank Ltd, London (1997–2007), including Vice Chairman of the Investment Banking Division. Various positions with Merrill Lynch International Ltd, London (1992–1997). Kansallis-Osake-Pankki, London (1991–1992). Citicorp Investment Bank Ltd, London (1989–1991)
Elected: 2011
Committee assignment: Member of the Audit Committee
Board meeting attendance: 11/11
Committee meeting attendance: AC: 4/5

TOMAS KÅBERGER (1961)
Board member
Education: M. Sc. Engineering Physics PhD Physical Resource Theory. Associate Professor (Docent), Environmental Science
Current position: Professor, Chalmers University of Technology, Industrial Energy Policy
Other assignments: Chairman of the Board of Renewable Energy Institute, Tokyo. Vice Chairman of the National Swedish Forest Agency. Board member of Sustainable Energy Angels AB. Senior Advisor GEIDCO, Beijing
Previous positions: Professor Lund University, International Sustainable Energy Systems (2006–2008). Director General, Swedish Energy Agency (2008–2011)
Elected: 2015
Committee assignment: Member of the Audit Committee
Board meeting attendance: 11/11
Committee meeting attendance: AC: 5/5

JENNY LAHRIN (1971)
Board member
Education: Master of Laws. Executive MBA
Current position: Investment Director and Deputy Head of Division, Division for State-Owned Enterprises, Ministry of Enterprise and Innovation
Other assignments: Board member of AB Göta kanalbolag
Previous positions: Board member of SOS Alarm Sverige AB (2015–2016). Board member of Swedavia AB (2012–2015). Board member of RISE Research Institutes of Sweden AB (2012–2013). Legal Counsel at the Division for State-Owned Enterprises, Ministry of Enterprise/Ministry of Finance (2008–2012). Legal Director at Veolia Transport Northern Europe AB (2003–2008) and admitted to the Bar Association (2001–2002)
Elected: 2013
Committee assignment: Member of the Audit Committee
Board meeting attendance: 11/11
Committee meeting attendance: AC: 5/5

FREDRIK RYSTEDT (1963)
Board member
Education: B. Sc. Economics
Current position: Executive Vice President and CFO, Essity Aktiebolag (publ)
Other assignments: Board member of Vinda International Holdings Limited
Previous positions: Executive Vice President and Chief Financial Officer, Country Senior Executive, Nordea Sweden (2008–2012). Chief Financial Officer Electrolux Group (2001–2008). Chief Financial Officer (2000–2001) and Head of Business Development (1998–1999) Sapa Group. Various positions in the Electrolux Group (1989–1998), including as Vice President and Head of Mergers & Acquisitions (1996–1998), Director of Mergers & Acquisitions (1995–1996) and Managing Director of Svensk Inkassoservice, an Electrolux finance company (1992–1994)
Elected: April 2017
Committee assignment: Member of the Audit Committee
Board meeting attendance: 5/8
Committee meeting attendance: AC: 3/3

ÅSA SÖDERSTRÖM WINBERG (1957)
Board member
Education: B. Sc. Economics
Other assignments: Chairman of the Board of Delete OY and Scanmast AB. Board member of JM AB, FIBO AS, OEM International AB, Nordic Home Improvement AB and Balco Group AB. Member of the Royal Swedish Academy of Engineering Sciences (IVA)
Previous positions: President SWECO Theorells AB (2001–2006) and Ballast Väst AB (1997–2001). Marketing Manager NCC Industry (1994–1997), and Communications Manager NCC Bygg AB (1991–1993)
Elected: 2013
Committee assignment: Remuneration Committee chair
Board meeting attendance: 10/11
Committee meeting attendance:
RemCom: 6/6

JOHNNY BERNHARDSSON (1952)
Employee representative
Education: Engineering studies with supplementary coursework in economics
Current position: Employee representative for Unionen. Vattenfall employee since 1970, currently in Human Resource Service at Vattenfall Business Services
Other assignments: Chairman of the European Works Council
Elected: 1995
Board meeting attendance: 11/11

RONNY EKWALL (1953)
Employee representative
Education: Electrical engineer
Current position: Employee representative for SEKO Facket för Service och Kommunikation. Vattenfall employee since 1977 as fitter
Elected: 1999
Committee assignment: Member of the Audit Committee
Board meeting attendance: 11/11
Committee meeting attendance: AC: 4/5

ROLF OHLSSON (1961)
Employee representative
Education: Mechanical M. Sc., KTH Royal Institute of Technology
Current position: Employee representative for Akademikerrådet at Vattenfall. Vattenfall employee since 1998, currently as full time representative for Akademikerna at Forsmarks Kraftgrupp AB
Other assignments: Employee representative in Forsmarks Kraftgrupp AB board. Chairman of Akademikerrådet i Vattenfall
Elected: April 2017
Board meeting attendance: 8/8

CHRISTER GUSTAFSSON (1959)
Employee representative (deputy)
Education: Four-year education in technology
Current position: Employee representative for Ledarna (the Association of Management and Professional Staff). Employed at Vattenfall since 1986, currently in the staff function for the engineering department, Forsmarks Kraftgrupp AB
Other assigments: Representative for Energy & Technology, Confédération Européenne des Cadres (for energy issues)
Elected: 2013
Board meeting attendance: 9/11

ROBERT LÖNNQVIST (1979)
Employee representative (deputy)
Education: 3-year upper secondary degree in electrical installation. Further education in project management, labour law and health & safety
Current position: Employee representative for SEKO Facket för Service och Kommunikation. Vattenfall employee since 2007, currently as Project manager at Vattenfall Services Nordic AB
Other assignments: Member of the European Works Council. Assignments for Seko
Elected: April 2017
Board meeting attendance: 6/8

JEANETTE REGIN (1965)
Employee representative (deputy)
Education: Secondary school diploma and two-year education in healthcare
Current position: Employee representative for Unionen. Currently head of customer service/office services for Gotland Energientreprenad
Elected: 2011
Board meeting attendance: 7/11

Directors who left the Board in 2017:

Staffan Bohman declined re-election at the Annual General Meeting on 27 April.

Hilde Tonne resigned from the Board on 6 October.

The employee representatives Carl-Gustaf Angelin and Lennart Bengtsson (deputy) resigned in connection with the Annual General Meeting on 27 April.

Executive Group Management

MAGNUS HALL (1959)
President and CEO
Vattenfall employee since: 2014
Education: M. Sc. Industrial Engineering and Management
Previous positions: President and CEO of the forestry group Holmen
Other assignments: Chairman of NTM AB and Vice President in Eurelectric
In 2017 Magnus Hall did not have any significant shareholdings in companies with which Vattenfall has business relations.

KERSTIN AHLFONT (1971)
Senior Vice President, Head of Human Resources
Vattenfall employee since: 1995
Education: M.Sc. Eng.
Previous positions: Long-standing experience from Vattenfall through various manager positions within Finance in BU Heat Nordic, BG Pan Europe, BD Production and Region Nordic as well as acting head of Human Resources

ANNA BORG (1971)
Senior Vice President, Chief Financial Officer
Vattenfall employee since: 2017 and 1999–2015
Education: Degree of Master in Economics and Political Science
Previous positions: Senior Vice President, Business Area Markets, Vattenfall (2017), Senior Vice President, Nordic Klarna (2015–2017), Vice President, Marketing and Sales Nordic, Vattenfall (2013–2015), Vice President B2C Sales Europe, Vattenfall (2011–2013), Vice President, Sales Nordic, Vattenfall (2009–2011). Various management positions in Strategy, Business Development and Project Management (2003–2009). Head of Strategy and Business Development, Vattenfall Trading (1999–2003)
Other assignments: Board member of Gunnebo AB

GUNNAR GROEBLER (1972)
Senior Vice President, Head of Wind Business Area
Vattenfall employee since: 1999
Education: Mechanical Engineering
Previous positions: Vice President, BU Renewables, Region Continental/UK, Vattenfall (2014–2015). Head of BU Hydro Germany, Vattenfall (2011–2013). Head of Corporate Development & M&A, BG Central Europe, Vattenfall Europe AG (2009–2010). Head of Mergers & Acquisitions, BG Central Europe, Vattenfall Europe AG (2008–2009). Head of Corporate Restructuring, Vattenfall Europe AG (2007–2008). Head of Purchasing, Vattenfall Europe Hamburg AG (2005–2007)

ANNE GYNNERSTEDT (1957)
Senior Vice President, General Counsel and Secretary to the Board of Directors
Education: LL.B.
Vattenfall employee since: 2012
Previous positions: General Counsel, Secretary to the Board of Directors and member of executive management of SAAB AB (2004–2012). General Counsel and member of executive management of the Swedish National Debt Office (2002–2004). Corporate Legal Counsel, SAS (1987–2002)
Other assignments: Board member Swedish Space Corporation

MARTIJN HAGENS (1971)
Senior Vice President, Head of Customers & Solutions Business Area
Vattenfall employee since: 2003
Education: M. Sc. Industrial Engineering and Management
Previous positions: Head of Heat Continental/ UK, Vattenfall (2014–2015). Head of Customer Service, Vattenfall (2011–2013). Head of Customer Care Centre, Nuon (2008–2010). Program Director Unbundling, Nuon (2006–2007). Nuon Consultancy Group & Lean Competence Center, Nuon (2005–2006). Head of Customer Care B2B, Nuon (2003–2004). Management Consultant, Accenture (1996–2002)
Other assignments: Chief Operating Officer Nuon Netherlands

TUOMO HATAKKA (1956)
Senior Vice President, Head of Heat Business Area
Vattenfall employee since: 2002
Education: B. Sc. Economics, MBA
Previous positions: Head of Business Group Poland (2005–2007). Head of Business Group Central Europe (2008–2010). Head of Business Division Production (2010–2013)
Other assignments: Board member PKP Energetyka S.A.

NIEK DEN HOLLANDER (1973)
Senior Vice President, Head of Markets Business Area
Vattenfall employee since: 2014
Education: Master's in Financial Econometrics, MBA
Previous positions: Head of Business Unit Trading, Vattenfall Energy Trading GmbH (2014–2017). Head of Trading, Statkraft Markets GmbH (2008–2014). Head of Long-term Energy Management, Statkraft Markets B.V. (2006–2006). Head of Asset Management, Statkraft Markets B.V. (2005–2006). Various trading positions, Statkraft Markets B.V. (2002–2005). Various trading positions in the financial sector (1997–2002)

KARIN LEPASOON (1968)
Senior Vice President, Head of Group Communications
Vattenfall employee since: 2016
Education: LL.M. in Swedish and EU Law
Previous positions: Director of Sustainability, Communications and HR, Nordic Capital (2015–2016). Executive Vice President and member of the group senior executive team (full member since 2008), Skanska (2006–2015). VP Group Communications, Gambro (1999–2006)

ANDREAS REGNELL (1966)
Senior Vice President, Head of Strategic Development
Vattenfall employee since: 2010
Education: B. Sc. Economics
Previous positions: Head of Nordic Business Strategy (2014–2015). Head of Strategy and Sustainability (2010–2013). Senior Partner and Managing Director, Managing Partner of Nordic Region, The Boston Consulting Group (1992–2010). Analyst and Account Manager, Citibank (1989–1992).
Other assignments: Board member of Svevia AB, Northvolt AB and Hybrit AB

TORBJÖRN WAHLBORG (1962)
Senior Vice President, Head of Generation Business Area
Vattenfall employee since: 1990
Education: M. Sc. Eng.
Previous positions: Vattenfall's Polish operations (1997–2010), including as country manager (2008–2009). Head of Business Group Nordic (2010). Head of Business Division Distribution and Sales (2010–2012). Head of Business Division Nuclear (2012–2013). Head of Business Region Nordic (2014–2015)
Other assignments: Board member of the Confederation of Swedish Enterprise and of Swede Energy. Chairman of the Board of EFA AB

Persons who left the Executive Group Management in 2017:
Stefan Dohler left his position as CFO on 31 October 2017.

AGM proposal

Proposed principles for compensation and other terms of employment for senior executives

The Annual General Meeting resolved on 27 April 2017 to adopt the Board's proposed guidelines for compensation of senior executives. The Board proposes that the 2018 Annual General Meeting resolve to adopt the Board's proposal, which corresponds to the government's guidelines for terms of employment for senior executives of state-owned companies, adopted by the government on 22 December 2016 (www.regeringen.se), with the deviation set out below.

In accordance with a resolution by the Annual General Meeting on 27 April 2017, Vattenfall deviates from the definition of senior executive of a subsidiary. Instead of using the definition of senior executive set forth in the Swedish Companies Act, senior executives shall be defined based on whether they have significant influence on the Group's earnings. Through application of the International Position Evaluation (IPE) model, executives with positions of IPE 68 and higher shall be considered to be senior.

The Board certifies that the compensation in question is in compliance with the guidelines set by the Annual General Meeting, in the following respects. Before a decision is made on compensation and other terms of employment for a senior executive, written documentation shall be available that shows the company's total cost. The proposal for decision shall be drafted by the Board's remuneration committee and thereafter be put to the Board for a decision. The company's auditors shall perform a review to ensure that the set compensation levels and other terms of employment have not been exceeded and, in accordance with the Companies Act, shall once a year – not later than three weeks before the Annual General Meeting – issue a written statement as to whether the adopted guidelines have been adhered to.

The Board's explanation for deviations from the guidelines

The deviation decided on by the owner at the 2017 Annual General Meeting entails use of a generally accepted ranking model instead of the definition of senior executive of a subsidiary in the Swedish Companies Act. The Board is of the opinion that the following, special reasons exist for deviating from the guidelines.

Like other international groups, Vattenfall governs its operations from a commercial perspective and not according to the legal company structure. For commercial and legal reasons, the Vattenfall Group has approximately 300 subsidiaries. Through application of the government's guidelines for subsidiaries, a very large number of executives would be considered to be senior, without them having any significant influence on the Group's earnings.

The proposed deviation reflects these circumstances. The criteria used to define what constitutes a senior executive are the individual subsidiary's size based on sales, the number of employees and number of steps in the value chain, as well as the requirements on the individual executive for innovation, knowledge, strategic/visionary role and international responsibility.

The International Position Evaluation (IPE) model is used as support for determining in a systematic manner which positions can be considered to be senior. The Board's conclusion is that, in addition to the members of the Executive Group Management, executives in positions of IPE 68 or higher should be considered to be senior.

Proposed distribution of profits

The Annual General Meeting has at its disposal retained profits, including the profit for the year, totalling SEK 50,582,732,113. The Board of Directors and President propose that the profits to be distributed as follows:
To be distributed to the shareholder: SEK 2,000,000,000
To be carried forward: SEK 48,582,732,113

The proposed distribution corresponds to a dividend of SEK 15.19 per share. The dividend is proposed for payment on 9 May 2018.

Statement by the Board of Directors pursuant to the Swedish Companies Act, Chapter 18, Section 4

Based on the Parent Company's and Group's financial position, earnings and cash position, the Board of Directors is of the opinion that the proposed distribution of profits will not lead to any material limitation of the Parent Company's or Group's ability to make any necessary investments or to meet their obligations in the short and long term. In view of the above, the Board of Directors finds the proposed discretionary dividend, totaling SEK 2,000,000,000, to be carefully considered and justified, and that the proposal adheres to the principles of the adopted dividend policy (page 11).

The Board of Directors' and the President's assurance upon signing the Annual and Sustainability Report for 2017

The undersigned certify that the consolidated accounts and the Annual Report have been prepared in accordance with International Financial Reporting Standards (IFRS), as endorsed by the European Commission, for application within the EU, and generally accepted accounting principles, respectively, and give a true and fair view of the Parent Company's and the Group's financial position and earnings, and that the Adminstration Report for the Parent Company and the Group presents a fair overview of the development of the Parent Company's and the Group's operations, financial position and earnings and describes significant risks and uncertainties that the companies in the Group face. In addition, the undersigned certify that the sustainability data, as defined in the GRI Index on pages 172–175, has been prepared in accordance with the GRI G4 Guidelines, and has been adopted by the Board of Directors.

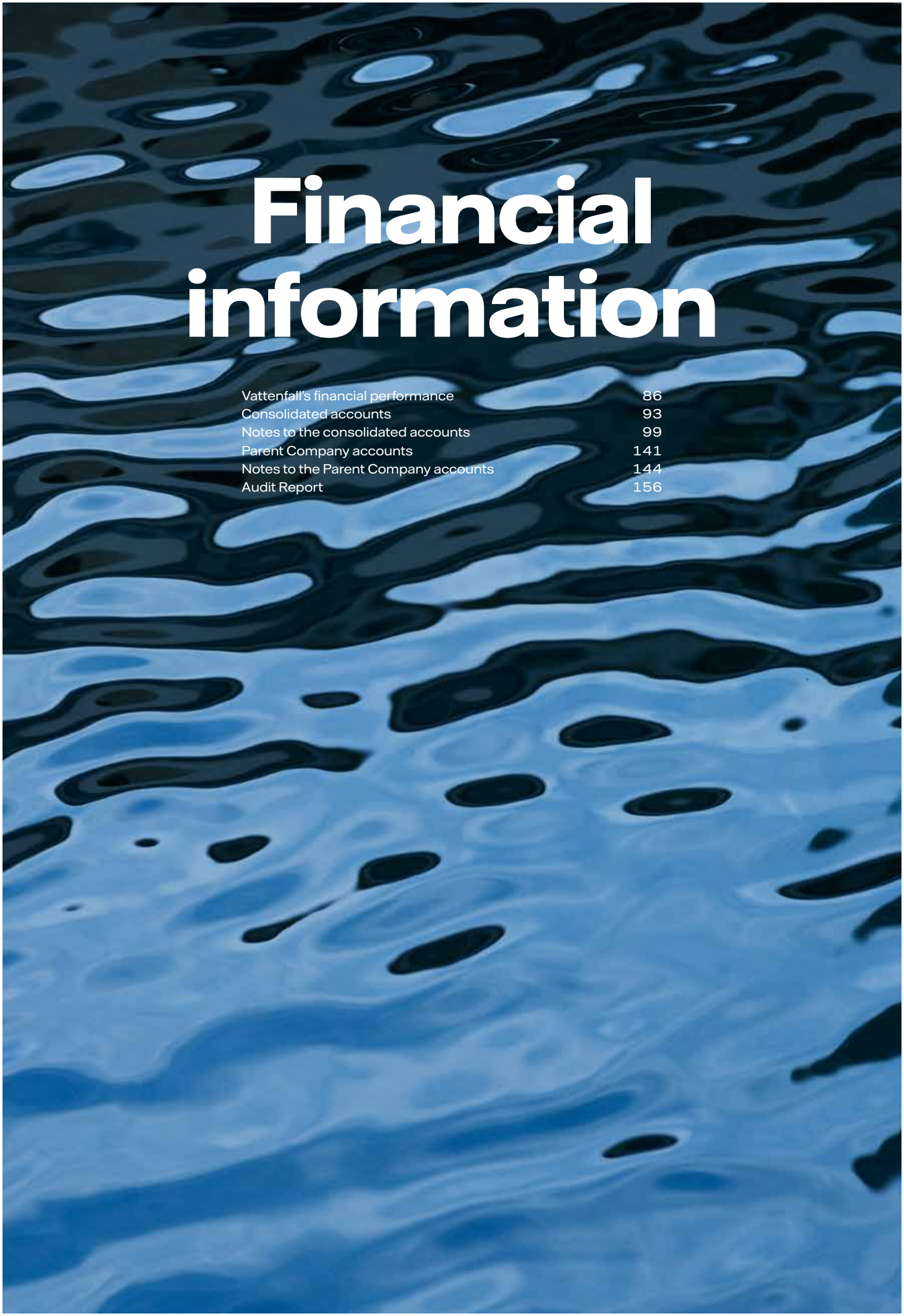
Solna, 21 March 2018
Lars G. Nordström, Chairman of the Board

Fredrik Arp	Viktoria Bergman	Johnny Bernhardsson	Ronny Ekwall	Håkan Erixon
Tomas Kåberger	Jenny Lahrin	Rolf Ohlsson	Fredrik Rystedt	Åsa Söderström Winberg

Magnus Hall, President and CEO

Our auditor's report was submitted on 21 March 2018
Ernst & Young AB

Staffan Landén, Authorised Public Accountant



Financial information

Vattenfall's financial performance

The underlying operating profit was SEK 23.3 billion in 2017, an increase of SEK 1.6 billion compared with 2016. Focus continued to be on lowering costs. This, together with strong earnings from the Wind Business Area, which commissioned several new wind farms during the year, and higher revenues from distribution, contributed to the increase in the underlying operating profit.

Amounts in SEK million	2017	2016
Continuing operations		
Net sales	135,295	139,208
Operating profit before depreciation, amortisation and impairment losses (EBITDA)[1]	34,460	27,209
Underlying operating profit before depreciation, amortisation and impairment losses[1]	38,705	36,144
Operating profit (EBIT)[1]	18,644	1,337
Underlying operating profit[1]	23,323	21,697
Profit for the period	9,571	-2,171
Funds from operations (FFO)[1]	26,704	28,186[2]
Net debt[1]	59,260	50,724
Adjusted net debt[1]	124,360	124,741
Electricity generation, TWh	127.3	119.0
– of which, hydro power	35.6	34.8
– of which, nuclear power	51.9	46.9
– of which, fossil-based power	31.8	30.8
– of which, wind power	7.6	5.8
– of which, biomass, waste	0.4	0.7
Sales of electricity, TWh[3]	157.3	193.2
Sales of heat, TWh	18.8	20.3
Sales of gas, TWh	56.4	54.8[5]
CO_2 emissions, Mtonnes	23,1[6]	23.2[6]
Work-related accidents, number (LTIF)[4]	1,5	2.0
Total Vattenfall		
Number of employees, full-time equivalents	20,041	19,935
Key ratios		
Return on capital employed, continuing operations, %	7.7	0.5[7]
Return on capital employed, Total Vattenfall, %	7.7	-8.5[7]
Net debt/equity, %	63.0	60.5
FFO/adjusted net debt, continuing operations, %	21.5	21.6
FFO/adjusted net debt, Total Vattenfall, %	21.5	22.6[8]
Adjusted net debt/EBITDA, continuing operations, times	3.6	4.6
Adjusted net debt/EBITDA, Total Vattenfall, times	3.6	4.4[8]

[1] See Definitions and calculations of key ratios for definitions of Alternative Performance Measures.

[2] Pertains to Total Vattenfall, including the lignite operations.

[3] Sales of electricity also include bilateral trading on the Nordic electricity exchange.

[4] Lost time Injury Frequency (LTIF) is expressed in terms of the number of lost time work injuries (per 1 million hours worked), i.e. work-related accidents resulting in absence longer than one day, and accidents resulting in fatality. The measure pertains only to Vattenfall empolyees.

[5] The value has been adjusted compared with information previously published in Vattenfall's 2016 Annual and Sustainability Report.

[6] Pro rata values, corresponding to Vattenfall's share of ownership.

[7] The key ratio is based on average capital employed. The lignite operations were classified as assets held for sale on the balance sheet as per 30 June 2016, which entails that the calculation of average capital employed excludes the lignite operations as from 30 June 2016.

[8] The lignite operations were classified as assets held for sale on the balance sheet as per 30 June 2016. As a result, the lignite operations are excluded from balance sheet items included in the calculations of key ratios as from 30 June 2016.

Sustainability reporting

In addition to reporting on financial performance, Vattenfall also reports on its sustainability performance. In accordance with the Annual Accounts Act, 6 chapter 11§ Vattenfall has chosen to develop the statutory sustainability report as a report separated from the annual accounts and consolidated accounts. The statutory sustainability report was delivered to the auditor at the same time as the annual accounts and consolidated accounts. The statutory sustainability report, which can be found on pages 10–15, 61–65, 76–77, and 161–171, pertains to Vattenfall and its subsidiaries.

Financial consequences for Vattenfall related to payments to the nuclear waste fund in Germany
On 15 and 16 December 2016 the German Parliaments approved an amendment in the law under which liability for the transport, intermediate and final storage of nuclear waste has been shifted to the government through payment of a total of EUR 23.6 billion into a public fund. The EU approved this law on 16 June 2017. On 3 July 2017 Vattenfall paid a total of SEK 17.3 billion (EUR 1.8 billion) to the fund. The sum consisted of a base payment of SEK 12.3 billion (EUR 1.3 billion) plus a risk premium of 35.47% and six months' interest payments at an annualised rate of 4.58% to be paid by law. In 2017, net debt was reduced, but not adjusted net debt, since the risk premium plus the interest component was already reflected in the nuclear power provisions at the end of 2016. Through this payment, Vattenfall and the other German nuclear power operators are free from liability for intermediate and final storage of nuclear waste. Read more about Vattenfall's nuclear power operations on pages 36–39.

Comparability of information presented in tables and graphs
The financial performance that is reported and commented on in the following pages pertains to Vattenfall's continuing operations, unless indicated otherwise. In view of the divestment of Vattenfall's lignite operations, these are classified and reported as a discontinued operation. Read more in Note 5 to the consolidated accounts, Discontinued operations.

Wholesale price trend
Average Nordic spot prices were 9% higher in 2017 than in 2016, mainly owing to more precipitation and a higher hydrological balance. Average spot prices in Germany and the Netherlands were 18% and 22% higher, respectively, than in 2016, mainly owing to uncertainty surrounding nuclear power in France, dry conditions in the Alps during parts of the year, and higher commodity prices.

Due to the uncertainty surrounding nuclear power and complex commodity prices, which rose during the year, futures prices for electricity also rose by 11%–15% compared with 2016.

Commodity prices rose on average in 2017 compared with 2016. Coal prices were an average of 38% higher, while gas prices were 10% higher and CO_2 emission allowances were 9% higher.

Electricity generation
Total electricity generation in 2017 was 127.3 TWh, compared with 119.0 TWh in 2016.

Hydro power generation increased as result of higher reservoir levels. Nordic reservoir levels were 65% (52) of capacity at the end of the fourth quarter of 2017, which is 14.4 percentage points above the normal level.

Nuclear power generation increased compared with the preceding year, owing to higher availability and to the restart of Ringhals reactor 2. Combined availability for Vattenfall's nuclear power plants in 2017 was 84.8% (75.4%). Forsmark had availability of 87.9% (84.0%) and generation of 24.5 TWh (24.0). Ringhals had availability of 82.2% (68.2%) and generation of 27.4 TWh (22.9).

Electricity generation from wind power increased by 1.8 TWh through the commissioning of new wind farms. Commissioned capacity in 2017 consisted of the Sandbank offshore wind farm in Germany (72 MW of a total of 288 MW), the Pen y Cymoedd onshore wind farm (228 MW – which is the largest onshore wind farm in the UK), and the Ray onshore wind farm (54 MW) in the UK.

Fossil-based power generation increased slightly in 2017 compared with 2016.

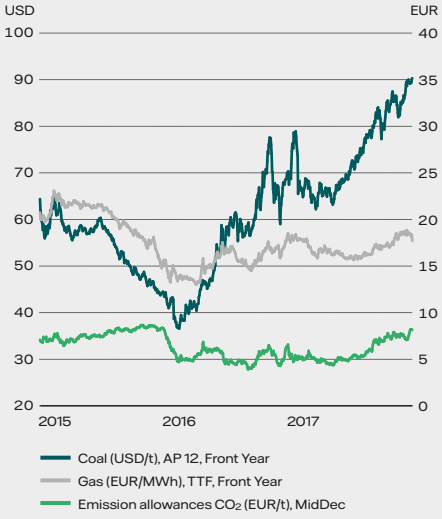
Sales of electricity, heat and gas
Sales of electricity to private customers decreased slightly compared with in 2016. Vattenfall's customer base in Customers & Solutions grew by some 288,000 contracts since the start of the year, where the majority of new contracts are from the acquisition of the British gas and electricity supplier iSupplyEnergy. Sales of heat decreased slightly compared with 2016 as a result of warmer weather. Sales of gas increased slightly compared with 2016, mainly owing to a larger customer base in Germany.

Vattenfall's price hedging
Vattenfall continuously hedges its future electricity generation through sales in the forward and futures markets. Spot prices therefore have only a limited impact on Vattenfall's earnings in the near term. Following the sale of the lignite operations, Vattenfall's portfolio and risk exposure have changed substantially. The dominant risk exposure is now related to price exposure for Nordic nuclear and hydro power baseload generation. In addition, Vattenfall's continuing operations generate a higher share of regulated revenue from distribution, heat and tendered wind power, which reduces the total risk exposure. On the Continent (Germany and the Netherlands) and in the UK, Vattenfall continues to have some price exposure between electricity and used fuel. This exposure has a lower risk profile than in the Nordic countries. Based on this, Vattenfall has decided to decrease its price hedging activity and to focus on hedging its Nordic generation. Read more on Vattenfall's price hedging in the Risks and risk management section on the pages 63–69.

Electricity spot prices in the Nordic countries, Germany and the Netherlands, monthly averages

Electricity futures prices in the Nordic countries, Germany and the Netherlands

Price trend for coal, gas and CO_2 emission allowances



Comments on the consolidated income statement

Sales

	External net sales		Internal net sales		Total net sales	
	2017	2016	2017	2016	2017	2016
Customers & Solutions	**67,510**	**67,862**	**1,551**	**1,368**	**69,061**	**69,230**
Power Generation	**43,648**	**49,276**	**50,769**[3]	**49,721**[3]	**94,417**	**98,997**
Wind	**6,669**	**4,384**	**2,769**	**2,318**	**9,438**	**6,702**
Heat	**14,890**	**15,110**	**15,842**	**13,304**	**30,732**	**28,414**
Distribution	**16,904**	**15,233**	**4,590**	**4,428**	**21,494**	**19,661**
- of which, Distribution Germany	5,970	4,978	4,141	3,954	10,111	8,932
- of which, Distribution Sweden	10,934	10,255	449	474	11,383	10,729
Other[1]	**524**	**326**	**4,427**	**5,037**	**4,951**	**5,363**
Eliminations	**-14,850**[2]	**-12,983**[2]	**-79,948**	**-76,176**	**-94,798**	**-89,159**
Total continuing operations	**135,295**	**139,208**	**–**	**–**	**135,295**	**139,208**
Discontinued operations	–	13,459	–	–	–	13,459
Total	**135,295**	**152,667**	**–**	**–**	**135,295**	**152,667**

1 "Other" pertains mainly to all Staff functions and Shared Service Centres.

2 Pertains to Trading's sales to the Nordic electricity exchange. Vattenfall's sales organisation buys a corresponding amount of electricity from the Nordic electricity exchange.

3 Pertains to Trading's sales of electricity, heat and CO_2 emission allowances to other segments in Vattenfall.

Consolidated net sales decreased by SEK 3.9 billion compared with 2016. This is mainly attributable to lower prices and volumes for business customers in Germany and to lower prices for private customers in the Netherlands.

Underlying operating profit

Continuing operations, amounts in SEK million	2017	2016
Operating profit (EBIT)	18,644	1,337
Depreciation, amortisation and impairment losses	15,816	25,872
Operating profit before depreciation, amortisation and impairment losses (EBITDA)	**34,460**	**27,209**
Items affecting comparability excl. impairment losses and reversed impairment losses	4,245	8,935
Underlying operating profit before depreciation, amortisation and impairment losses	**38,705**	**36,144**
Operating profit (EBIT)	18,644	1,337
Items affecting comparability[1]	4,679	20,360
Underlying operating profit	**23,323**	**21,697**

1 See Definitions and calculations of key ratios for definition of this Alternative Performance Measure.

The underlying operating profit improved by SEK 1.6 billion, which is explained by the following:

- A higher earnings contribution from the wind operations, owing to the commissioning of new wind farms (SEK 1.3 billion)
- A higher earnings contribution from the distribution operations, mainly owing to higher network tariffs (SEK 1.3 billion)
- A lower earnings contribution from the Power Generation operations, owing to a negative gross margin, which was partly netted through lower operating expenses (–SEK 0.5 billion)
- Other items, net (SEK -0.5 billion)

Operating segments

	Operating profit (EBIT)		Underlying operating profit	
	2017	**2016**	**2017**	**2016**
Customers & Solutions	**1,819**	**1,749**	**1,913**	**1,830**
Power Generation	**6,138**	**-3,648**	**10,820**	**11,410**
Wind	**1,713**	**898**	**2,137**	**878**
Heat	**3,541**	**-3,366**	**3,379**	**3,230**
Distribution	**6,341**	**4,838**	**6,140**	**4,863**
- of which, Distribution Germany	948	527	962	544
- of which, Distribution Sweden	5,400	4,311	5,185	4,319
Other[1]	**-849**	**868**	**-1,007**	**-512**
Eliminations	**-59**	**-2**	**-59**	**-2**
Total continuing operations	**18,644**	**1,337**	**23,323**	**21,697**
Discontinued operations	–	-22,542	–	-4
Total	**18,644**	**-21,205**	**23,323**	**21,693**

Continuing operations	**2017**	**2016**
Underlying operating profit	23,323	21,697
Items affecting comparability	-4,679	-20,360
Financial income and expenses	-5,755	-6,382
Profit before income taxes	**12,889**	**-5,045**

[1] "Other" pertains mainly to all Staff functions and Shared Service Centres.

The underlying operating profit for Customers & Solutions increased by SEK 0.1 billion, mainly owing to lower operating expenses compared with 2016. The underlying operating profit for the Power Generation operating segment decreased by SEK 0.6 billion compared with 2016, mainly owing to a lower contribution from the gross margin, which was partly compensated by lower operating expenses. The underlying operating profit for the Wind operating segment improved by SEK 1.3 billion, mainly owing to the commissioning of new wind farms. The underlying operating profit for the Heat operating segment improved by SEK 0.1 billion, which is mainly explained by higher electricity production and retroactive compensation for gas-fired combined heat and power (CHP) plants in Berlin. The underlying operating profit for the Distribution operating segment improved by SEK 1.3 billion, mainly owing to higher gross margins in Sweden and lower costs in Germany. Read more about the Group's operating segments in Note 8 to the consolidated accounts, Operating segments.

Items affecting comparability that affected operating profit

Continuing operations, amounts in SEK million	**2017**	**2016**
Capital gains	728	2,152
Capital losses	-89	-376
Impairment losses	-438	-12,354
Reversed impairment losses	4	929
Provisions	-2,438	-8,249
Unrealised changes in the fair value of energy derivatives	-3,637	-2,417
Unrealised changes in the fair value of inventories	10	997
Restructuring costs	-348	-761
Other infrequent items affecting comparability	1,529	-281
Total	**-4,679**	**-20,360**

Items affecting comparability amounted to SEK –4.7 billion. Capital gains pertain mainly to the sale of shares in the T.A. Lauta and Rüdersdorf waste-to-energy plants and to the sale of power transmission lines. Impairment of asset values amounted to SEK –0.4 billion and pertain mainly to bids for the Global Tech II and Atlantis offshore projects in Germany. Provisions amounted to SEK –2.4 billion and pertain mainly to nuclear operations. Other items affecting comparability pertain to unrealised changes in the fair value of energy derivatives and inventories (SEK –3.6 billion), restructuring costs (SEK –0.3 billion), and other infrequent items affecting comparability (SEK 1.5 billion). Items affecting comparability in 2016 totalled SEK –20.4 billion. Impairment losses amounted to SEK –12.4 billion and pertain to the Moorburg power plant in Hamburg, hydro power plants in Germany, fossil-based assets in the Netherlands, and impairment of the shareholdings in the Brokdorf and Stade nuclear power plants in Germany. The increase in provisions pertains mainly to higher provisions for nuclear power in Germany and Sweden. Read more about impairment losses in Note 11 to the consolidated accounts, Impairment losses and reversed impairment losses.

Costs for CO_2 emission allowances
Costs for CO_2 emission allowances for own use amounted to SEK 1.4 billion, compared with SEK 4.4 billion in 2016. The decrease is mainly attributable to lower prices of CO_2 emission allowances and lower volumes associated with the sale of the lignite operations in Germany.

R&D activities
Vattenfall conducts research and development (R&D) to contribute to and support the execution of the company's strategy in both the short and long term. In 2017 Vattenfall invested SEK 547 million (499) in R&D, corresponding to 0.4% (0.3%) of consolidated net sales. A growing share of R&D work is being focused on new products and services in decentralised energy solutions and e-mobility, including smart homes. For further information on Vattenfall's R&D activities, see pages 54-55.

Financial items
Financial items amounted to SEK 5.8 billion, which is SEK -0.6 billion lower than in 2016. The improvement is mainly attributable to higher net interest income and lower interest on provisions.

Taxes
The Group reported a tax expense of SEK 3.3 billion for 2017. The tax expense consists mainly of tax on profit for the year plus a minor adjustment of tax attributable to earlier periods. For 2016 the Group reported a tax income of SEK 2.9 billion. The tax income was mainly attributable to a deferred tax income of SEK 3.0 billion associated with impairment losses on asset values in 2016. For further information, see Note 15 to the consolidated accounts, Income taxes.

Comments on the consolidated balance sheet

Assets and capital employed

Amounts in SEK million	31 December 2017	31 December 2016
Intangible assets: current and non-current	19,985	17,107
Property, plant and equipment	227,094	217,136
Participations in associated companies and joint arrangements	4,985	4,839
Deferred and current tax assets	12,798	12,852
Non-current noninterest-bearing receivables	2,911	2,659
Inventories	15,670	14,566
Trade receivables and other receivables	23,096	26,008
Prepaid expenses and accrued income	7,010	6,463
Unavailable liquidity	6,978	6,995
Other	1,616	484
Total assets excl. financial assets	**322,143**	**309,109**
Deferred and current tax liabilities	-16,218	-16,664
Other noninterest-bearing liabilities	-6,570	-6,440
Trade payables and other liabilities	-23,872	-25,330
Accrued expenses and deferred income	-13,586	-15,481
Total noninterest-bearing liabilities	**-60,246**	**-63,915**
Other interest-bearing provisions not related to adjusted net debt[1]	-11,316	-12,505
Capital employed[2]	**250,581**	**232,689**
Capital employed, average	**241,635**	**248,640**

[1] Includes personnel-related provisions for non-pension purposes, provisions for tax and legal disputes and certain other provisions.
[2] See Definitions and calculations of key ratios for definitions of this Alternative Performance Measure.

Total assets decreased by SEK 1.4 billion compared with the level at 31 December 2016 and amounted to SEK 407.9 billion (409.3). Cash and cash equivalents decreased by SEK 11 billion as a result of repurchases of bonds maturing in 2039 and current liabilities. Inventories and intangible current assets increased as a result of an increase in CO_2 emission allowances by SEK 2.3 billion. Net financial items showed an improvement compared with the preceding year.

Financial position

Amounts in SEK million	2017	2016
Cash and cash equivalents, and short-term investments	26,897	43,292
Committed credit facilities (unutilised)	19,688	19,105

Cash and cash equivalents, and short-term investments decreased by SEK 16.4 billion compared with the level at 31 December 2016.

Committed credit facilities consist of a EUR 2.0 billion Revolving Credit Facility that expires on 10 December 2021. As per 31 December 2017, available liquid assets and/or committed credit facilities amounted to 29% of net sales. Vattenfall's target is to maintain a level of no less than 10% of the Group's net sales, but at least the equivalent of the next 90 days' maturities.

Interest-bearing liabilities and net debt as per 31 December

Amounts in SEK million	2017	2016
Hybrid Capital[1]	-19,118	-19,164
Bond issues, commercial paper and liabilities to credit institutions	-52,113	-55,807
Present value of liabilities pertaining to acquisitions of Group companies	-161	-51
Liabilities to associated companies	-462	-2,798
Liabilities to owners of non-controlling interests	-10,369	-10,109
Other liabilities	-4,931	-8,738
Total interest-bearing liabilities[1]	**-87,154**	**-96,667**
Cash and cash equivalents	8,805	19,995
Short-term investments	18,092	23,297
Loans to owners of non-controlling interests in foreign Group companies	997	2,651
Net debt[1]	**-59,260**	**-50,724**

[1] See Definitions and calculations of key ratios for definitions of Alternative Performance Measures.

Total interest-bearing liabilities decreased by SEK 9.5 billion compared with the level at 31 December 2016. This is mainly attributable to repurchases of bonds maturing in 2039, and repayment of loans to associated companies and current liabilities.

Net debt increased by SEK 8.5 billion compared with the level at 31 December 2016. This is mainly explained by the payment to the new nuclear energy fund in Germany of SEK -17.3 billion, which were partly offset by a positive net cash flow of SEK 7.1 billion after investments.

Adjusted gross and net debt as per 31 December

Amounts in SEK million	2017	2016
Total interest-bearing liabilities	-87,154	-96,667
50% of Hybrid Capital[1]	9,559	9,582
Present value of pension obligations	-41,962	-40,644
Provisions for mining, gas and wind operations and other environment related provisions	-6,507	-4,367
Provisions for nuclear power (net)[2]	-30,716	-41,896
Margin calls received	3,312	3,961
Liabilities to owners of non-controlling interests due to consortium agreements	9,189	8,993
Adjusted gross debt	**-144,279**	**-161,038**
Reported cash and cash equivalents and short-term investments	26,897	43,292
Unavailable liquidity	-6,978	-6,995
Adjusted cash and cash equivalents and short-term investments	**19,919**	**36,297**
Adjusted net debt[3]	**-124,360**	**-124,741**

[1] 50% of Hybrid Capital is treated as equity by the rating agencies, which thereby reduces adjusted net debt.

[2] The calculation is based on Vattenfall's share of ownership in the respective nuclear power plants, less Vattenfall's share in the Swedish Nuclear Waste Fund and liabilities to associated companies. Vattenfall has the following ownership interests in the respective plants: Forsmark 66%, Ringhals 70.4%, Brokdorf 20%, Brunsbüttel 66.7%, Krümmel 50% and Stade 33.3%. (According to a special agreement, Vattenfall is responsible for 100% of the provisions for Ringhals).

[3] See Definitions and calculations of key ratios for definitions of Alternative Performance Measures.

In their assessments of a company's credit strength, the rating agencies and analysts regularly make a number of adjustments of various items on the balance sheet in order to arrive at a figure for adjusted gross and net debt. Vattenfall's calculations of its adjusted gross and net debt are shown in the table above.

Adjusted net debt was unchanged compared with the level at 31 December 2016. A positive cash flow of SEK 7.1 billion after investments and a positive change in net debt owing to SEK 1.5 billion in fair market valuation offset an increase in provisions for nuclear power by SEK -6 billion (excluding the effect of lower provisions resulting from payment to the German nuclear power fund) and higher dismantling provisions of SEK 2.1 billion. Read more about the provisions in Note 35 to the consolidated accounts, Other interest-bearing provisions.

Equity

The Group's equity increased by SEK 10.2 billion. The increase is mainly attributable to the profit for the year.

Comments on the consolidated statement of cash flows

Cash flow from operating activities

Amounts in SEK million	2017	2016
Funds from operations (FFO)	26,704	28,186
Cash flow from changes in operating assets and operating liabilities (working capital)	-1,096	2,597
Cash flow from operating activities	25,608	30,783

Funds from operations (FFO) in 2017 decreased by SEK 1.5 billion to SEK 26.7 billion (28.2).

Cash flow from changes in working capital amounted to SEK -1.1 billion (2.6) in 2017. This is mainly attributable to a negative net change in margin calls associated with higher electricity and EUA wholesale prices (SEK 5.2 billion), an increase in inventories (SEK -0.5 billion), and a negative change in net receivables/liabilities (SEK -5.9 billion).

Cash flow from investing activities

Amounts in SEK million	2017	2016
Maintenance/replacement investments	11,658	10 557
Growth investments	8,657	11 561
Total investments from continuing operations	**20,315**	**22,118**
Accrued investments (-)/release of accrued investments (+)	858	-197
Total investments with cash flow effect from continuing operations	**21,173**	**21,921**
Investments with cash flow effect from discontinued operations	–	1,149
Total investments with cash flow effect	**21,173**	**23,070**
Total divestments	**2,795**	**4,406**
– of which, shares	1,731	1,298

Investments are specified in the table below. Divestments in 2017 pertained mainly to T.A. Lauta and Rüdersdorf. Share purchases consisted mainly of shares purchases in I Supply Energy Ltd and Windcollectief Wieringermeer B.V.

Specification of investments

Amounts in SEK million	2017	2016
Hydro power	1,317	1,511
Nuclear power	1,885	2,162
Coal power	168	454
Gas	228	164
Wind power	5,445	8,782
Biomass, waste	32	22
Total electricity generation	**9,075**	**13,095**
Fossil-based power	1,830	1,840
Biomass, waste	114	156
Other	1,515	1,064
Total CHP/heat	**3,459**	**3,060**
Electricity networks	5,306	5,248
Total electricity networks	**5,306**	**5,248**
Purchases of shares, shareholder contributions	1,237	-361
Other	1,238	1,076
Total investments from continuing operation	**20,315**	**22,118**
Accrued investments (–)/release of accrued investments (+)	858	-197
Total investments with cash flow effect from continuing operation	**21,173**	**21,921**
Investments with cash flow effect from discontinued operations	–	1,149
Total investments with cash flow effect	**21,173**	**23,070**

Cash flow from financing activities

Cash flow from financing activities amounted to SEK -18.3 billion (5.0). Majority refers to the German nuclear provisions (-17.3) and that Vattenfall repaid a large bond issue of GBP 250 million (corresponding to approximately SEK 2.8 billion).

Consolidated income statement

Amounts in SEK million, 1 January-31 December	Note	2017	2016
Continuing operations			
Net sales	7, 8, 9	135,295	139,208
Cost of products sold[1]		-99,102	-119,217
Gross profit		**36,193**	**19,991**
Other operating income		2,280	3,155
Selling expenses		-6,449	-7,573
Administrative expenses		-12,730	-11,322
Research and development costs		-365	-364
Other operating expenses		-624	-699
Participations in the results of associated companies[2]	8, 21	339	-1,851
Operating profit (EBIT)[3, 4, 9]	8, 9, 10, 11, 12, 16, 17	**18,644**	**1,337**
Financial income[5, 8]	13	2,670	1,767
Financial expenses[6, 7, 8]	14	-8,425	-8,149
Profit before income taxes		**12,889**	**-5,045**
Income taxes	15	-3,318	2,874
Profit for the year from continuing operations		**9,571**	**-2,171**
Discontinued operations			
Profit for the year from discontinued operations, net after tax	5	–	-23,833
Profit for the year		**9,571**	**-26,004**
Attributable to owner of the Parent Company		8,420	-26,324
Attributable to non-controlling interests		1,151	320
Supplementary information for continuing operations			
Operating profit before depreciation, amortisation and impairment losses (EBITDA)[9]	8, 9	34,460	27,209
Underlying operating profit before depreciation, amortisation and impairment losses[9]	8, 9	38,705	36,144
Underlying operating profit[9]	8, 9	23,323	21,697
Financial items, net excl. discounting effects attributable to provisions and return from the Swedish Nuclear Waste Fund		-4,538	-4,005
[1] Of which, depreciation, amortisation and impairment losses.		-13,803	-23,423
[2] Of which, impairment losses.		-26	-1,118
[3] Of which, depreciation, amortisation and impairment losses.		-15,816	-25,872
[4] Including items affecting comparability.[9]		-4,679	-20,360
[5] Including return from the Swedish Nuclear Waste Fund.		1,138	866
[6] Including interest components related to pension costs.		-820	-954
[7] Including discounting effects attributable to provisions.		-2,355	-3,243
[8] Items affecting comparability recognised as financial income and expenses, net.		7	-176
[9] See Definitions and calculations of key ratios for the definitions of the Alternative Performance Measures.			

Consolidated statement of comprehensive income

Total Vattenfall, amounts in SEK million, 1 January-31 December	2017	2016
Profit for the year	**9,571**	**-26,004**
Other comprehensive income		
Items that will be reclassified to profit or loss when specific conditions are met		
Cash flow hedges – changes in fair value	4,442	-17,620
Cash flow hedges – dissolved against income statement	-2,844	2,737
Cash flow hedges – transferred to cost of hedged item	1	-71
Hedging of net investments in foreign operations	-1,147	-923
Translation differences and exchange rate effects net, divested companies	17	1,164
Translation differences	2,352	1,927
Income taxes related to items that will be reclassified	-217	4,022
Total Items that will be reclassified to profit or loss when specific conditions are met	**2,604**	**-8,764**
Items that will not be reclassified to profit or loss		
Remeasurement pertaining to defined benefit obligations	-659	-1,805
Income taxes related to items that will not be reclassified	169	500
Total Items that will not be reclassified to profit or loss	**-490**	**-1,305**
Total other comprehensive income, net after income taxes	**2,114**	**-10,069**
Total comprehensive income for the year	**11,685**	**-36,073**
Attributable to owner of the Parent Company	10,307	-36,485
Attributable to non-controlling interests	1,378	412

Consolidated balance sheet

Total Vattenfall, amounts in SEK million	Note	31 December 2017	31 December 2016
Assets			
Non-current assets			
Intangible assets: non-current	9, 18	18,140	16,792
Property, plant and equipment	9, 19	227,094	217,136
Investment property	9	130	128
Biological assets		33	34
Participations in associated companies and joint arrangements	21	4,985	4,839
Other shares and participations		148	118
Share in the Swedish Nuclear Waste Fund	22	38,591	36,199
Derivative assets	23, 40	12,801	14,036
Prepaid expenses		20	20
Deferred tax assets	15	12,001	11,538
Other non-current receivables	24	3,964	3,788
Total non-current assets		**317,907**	**304,628**
Current assets			
Inventories	25	15,670	14,566
Biological assets		17	13
Intangible assets: current	26	1,845	315
Trade receivables and other receivables	27	23,096	26,008
Advance payments paid	28	3,600	1,311
Derivative assets	23, 40	11,029	10,656
Prepaid expenses and accrued income	29	7,010	6,463
Current tax assets	15	797	1,314
Short-term investments	30	18,092	23,297
Cash and cash equivalents	31	8,805	19,995
Assets held for sale	32	–	694
Total current assets		**89,961**	**104,632**
Total assets	8	**407,868**	**409,260**
Equity and liabilities			
Equity attributable to owners of the Parent Company			
Share capital		6,585	6,585
Reserve for cash flow hedges		-541	-1,711
Other reserves		446	-733
Retained earnings incl. profit for the year		72,224	64,131
Total equity attributable to owners of the Parent Company	42	**78,714**	**68,272**
Equity attributable to non-controlling interests		**15,331**	**15,528**
Total equity		**94,045**	**83,800**
Non-current liabilities			
Hybrid Capital	33	19,118	19,164
Other interest-bearing liabilities	33	54,335	63,494
Pension provisions	34	41,962	40,644
Other interest-bearing provisions	35	86,001	79,341
Derivative liabilities	23, 40	12,798	12,464
Deferred tax liabilities	15	14,964	14,776
Other noninterest-bearing liabilities	33, 36	6,570	6,440
Total non-current liabilities		**235,748**	**236,323**
Current liabilities			
Trade payables and other liabilities	33, 37	23,872	25,330
Advance payments received	38	8,745	2,164
Derivative liabilities	23, 40	13,200	11,552
Accrued expenses and deferred income	39	13,586	15,481
Current tax liabilities	15	1,254	1,888
Other interest-bearing liabilities	33	13,701	14,009
Interest-bearing provisions	35	3,717	18,359
Liabilities associated with assets held for sale	32	–	354
Total current liabilities		**78,075**	**89,137**
Total equity and liabilities		**407,868**	**409,260**

See also information on Collateral (Note 43), Contingent liabilities (Note 44) and Commitments under consortium agreements (Note 45), in the notes to the consolidated accounts.

Consolidated statement of cash flows

Total Vattenfall, amounts in SEK million, 1 January – 31 December	Note	2017	2016
Operating activities			
Profit before income taxes		12,889	-27,975
Reversal of depreciation, amortisation and impairment losses		15,815	49,539
Tax paid		-3,218	1,290
Capital gains/losses, net		-646	-1,581
Interest received		289	979
Interest paid		-4,896	-3,409
Other, incl. non-cash items	41	6,471	9,343
Funds from operations (FFO)[1]		**26,704**	**28,186**
Changes in inventories		-481	1,199
Changes in operating receivables		-3,297	-2,287
Changes in operating liabilities		-2,521	3,623
Other changes		5,203	62
Cash flow from changes in operating assets and operating liabilities		**-1,096**	**2,597**
Cash flow from operating activities		**25,608**	**30,783**
Investing activities			
Acquisitions in Group companies	4	-1,491[2]	-129
Investments in associated companies and other shares and participations	4	254[2]	541
Other investments in non-current assets	41	-19,936	-23,482
Total investments		**-21,173**	**-23,070**
Divestments	41	2,795	4,406
Cash and cash equivalents in acquired companies		48	98
Cash and cash equivalents in divested companies		-213	-199
Cash flow from investing activities		**-18,543**	**-18,765**
Cash flow before financing activities		**7,065**	**12,018**
Financing activities			
Changes in short-term investments		5,646	12,004
Changes in loans to owners of non-controlling interests in foreign Group companies		1,699	-434
Loans raised[3]		6,088	8,764
Amortisation of other debt		-13,438	-21,549
Divestment of shares in Group companies to owners of non-controlling interests		–	2,745
Payment to the nuclear energy fund in Germany		-17,322	–
Effect of early termination of swaps related to financing activities		105	2,244
Dividends paid to owners		-865	-882
Contribution from owners of non-controlling interests		-243	2,107
Cash flow from financing activities		**-18,330**	**4,999**
Cash flow for the year		**-11,265**	**17,017**
Cash and cash equivalents			
Cash and cash equivalents at start of year		19,995	12,351
Cash and cash equivalents included in assets held for sale/sold		–	-9,443
Cash flow for the year		-11,265	17,017
Translation differences		75	70
Cash and cash equivalents at end of year		**8,805**	**19,995**

Supplementary information

Total Vattenfall, amounts in SEK million, 1 January – 31 December	2017	2016
Cash flow before financing activities	**7,065**	**12,018**
Financing activities		
Divestment of shares in Group companies to owners of non-controlling interests	–	2,745
Effects from terminating swaps related to financing activities	105	2,244
Dividends paid to owners	-865	-882
Contribution from owners of non-controlling interests	-243	2,107
Cash flow after dividend	**6,062**	**18,232**
Cash flow from operating activities	25,608	30,783
Maintenance investments	-12,516	-11,566
Free cash flow[1]	**13,092**	**19,217**
Analysis of change in net debt		
Net debt at start of year	-50,724	-64,201
Cash flow after dividends	6,062	18,232
Changes as a result of valuation at fair value	1,474	-914
Change in interest-bearing liabilities for leasing	–	13
Interest-bearing liabilities/short-term investments acquired/divested	-146	4
Changes in liabilities pertaining to acquisitions of Group companies, discounting effects	-110	–
Cash and cash equivalents included in assets held for sale	–	-9,443
Transfer to liabilities due to changed shareholders' rights	–	99
Release collateralised cash by issuing bank guarantees	–	2,515
Translation differences on net debt	-142	-127
Reclassification	-15,674[4]	3,098
Net debt at end of year	**-59,260**	**-50,724**

	Liquid funds bank overdraft	Short-term investments	Non-current receivables	Financial leasing agreements	Current liabilities	Non-current liabilities	Total
Net debt as at 1 January 2016	**12,351**	**31,905**	**2,128**	**-665**	**-23,194**	**-86,726**	**-64,201**
Cashflow	17,029	-9,375	-2,165	–	9,983	2,760	**18,232**
Change in interest-bearing leasing liabilities	–	–	–	13	–	–	**13**
Translation differences on net debt	58	879	61	10	-865	-270	**-127**
Acquired/divested interest-bearing liabilities/ short-term investments	–	–	–	–	4	–	**4**
Assets held for sale	-9,443	–	–	–	–	–	**-9,443**
Other non-cash items	–	2,515	–	–	102	2,181	**4,798**
Net debt as at 31 December 2016	**19,995**	**25,924**	**24**	**-642**	**-13,970**	**-82,055**	**-50,724**
Cashflow	-11,265	-7,883	537	–	16,619	8,054	**6,062**
Translation differences on net debt	75	474	13	20	-462	-262	**-142**
Acquired/divested interest-bearing liabilities/ short-term investments	–	–	–	–	-144	-2	**-146**
Other non-cash items	–	–	–	–	-15,674[4]	1,364	**-14,310**
Net debt as at 31 December 2017	**8,805**	**18,515**	**574**	**-622**	**-13,631**	**-72,901**	**-59,260**

[1] See Definitions and calculations of key ratios for the definition of this Alternative Performance Measure.

[2] The value has been adjusted compared with information previously published in Vattenfall's 2017 year-end report.

[3] Short-term borrowings in which the duration is three months or shorter are reported net.

[4] Reclassification of provisions for nuclear power in Germany.

Consolidated statement of changes in equity

Amounts in SEK million	Attributable to owner of the Parent Company					Attributable to non-controlling interests	Total equity
	Share capital	Reserve for hedges	Translation reserve	Retained earnings	Total		
Balance brought forward 2017	**6,585**	**-1,711**	**-733**	**64,131**	**68,272**	**15,528**	**83,800**
Profit for the year	–	–	–	**8,420**	**8,420**	**1,151**	**9,571**
Cash flow hedges – changes in fair value	–	4,442	–	–	**4,442**	–	**4,442**
Cash flow hedges – dissolved against income statement	–	-2,827	–	–	**-2,827**	-17	**-2,844**
Cash flow hedges – transferred to cost of hedged item	–	1	–	–	**1**	–	**1**
Hedging of net investments in foreign operations	–	–	-1,147	–	**-1,147**	–	**-1,147**
Translation differences and exchange rate effects net, divested companies	–	–	17	–	**17**	–	**17**
Translation differences	–	–	2,057	–	**2,057**	295	**2,352**
Remeasurement pertaining to defined benefit obligations	–	–	–	-585	**-585**	-74	**-659**
Income taxes related to other comprehensive income	–	-473	252	150	**-71**	23	**-48**
Total other comprehensive income for the year	**–**	**1,143**	**1,179**	**-435**	**1,887**	**227**	**2,114**
Total comprehensive income for the year	**–**	**1,143**	**1,179**	**7,985**	**10,307**	**1,378**	**11,685**
Dividends paid to owners	–	–	–	–	–	-865	**-865**
Group contributions from (+)/to (–) owners of non-controlling interests	–	–	–	–	–	-153	**-153**
Contribution from minority interest	–	–	–	–	–	-243	**-243**
Changes as a result of changed ownership	–	–	–	–	–	-179	**-179**
Other changes in ownership	–	27	–	108	**135**	-135	–
Total transactions with equity holders	–	**27**	–	**108**	**135**	**-1,575**	**-1,440**
Balance carried forward 2017	**6,585**	**-541**	**446**	**72,224**	**78,714**	**15,331**[1]	**94,045**

Amounts in SEK million	Attributable to owner of the Parent Company					Attributable to non-controlling interests	Total equity
	Share capital	Reserve for hedges	Translation reserve	Retained earnings	Total		
Balance brought forward 2016	**6,585**	**9,460**	**-2,989**	**90,928**	**103,984**	**11,972**	**115,956**
Profit for the year	–	–	–	**-26,324**	**-26,324**	**320**	**-26,004**
Cash flow hedges – changes in fair value	–	-17,691	–	–	**-17,691**	71	**-17,620**
Cash flow hedges – dissolved against income statement	–	2,746	–	–	**2,746**	-9	**2,737**
Cash flow hedges – transferred to cost of hedged item	–	-52	–	–	**-52**	-19	**-71**
Hedging of net investments in foreign operations	–	–	-923	–	**-923**	–	**-923**
Translation differences and exchange rate effects net, divested companies	–	–	1,164	–	**1,164**	–	**1,164**
Translation differences	–	–	1,812	–	**1,812**	115	**1,927**
Remeasurement pertaining to defined benefit obligations	–	–	–	-1,726	**-1,726**	-79	**-1,805**
Income taxes related to other comprehensive income	–	3,826	203	480	**4,509**	13	**4,522**
Total other comprehensive income for the year	**–**	**-11,171**	**2,256**	**-1,246**	**-10,161**	**92**	**-10,069**
Total comprehensive income for the year	**–**	**-11,171**	**2,256**	**-27,570**	**-36,485**	**412**	**-36,073**
Dividends paid to owners	–	–	–	–	–	-882	**-882**
Group contributions from(+)/to(–) owners of non-controlling interests	–	–	–	–	–	-352	**-352**
Changes in ownership in Group companies on divestments of shares to owners of non-controlling interests	–	–	–	895	**895**	2,082	**2,977**
Contribution from minority interest	–	–	–	–	–	2,107	**2,107**
Changes as a result of changed ownership	–	–	–	–	–	-28	**-28**
Other changes in ownership	–	–	–	-122	**-122**	217	**95**
Total transactions with equity holders	**–**	**–**	**–**	**773**	**773**	**3,144**	**3,917**
Balance carried forward 2016	**6,585**	**-1,711**	**-733**	**64,131**	**68,272**	**15,528**[1]	**83,800**

[1] Of which, Reserve for cash flow hedges SEK –5 million (11).

See also Note 42 to the consolidated accounts, Specifications of equity.

Notes to the consolidated accounts

Amounts in SEK million unless indicated otherwise..

Note 1 Company information

Vattenfall's year-end report for 2017 was approved for publication on 7 February 2018 in accordance with a decision by the Board of Directors. The Annual and Sustainability Report was approved in accordance with a decision by the Board of Directors on 21 March 2018. The Parent Company, Vattenfall AB (publ) with corporate identity number 556036-2138, is a limited liability company with its registered office in Solna, Sweden and with the mailing address SE-169 92 Stockholm, Sweden. The consolidated balance sheet and income statement included in Vattenfall's Annual and Sustainability Report will be submitted at the Annual General Meeting (AGM) on 25 April 2018. The main activities of the Group are described in Note 8 to the consolidated accounts, Operating segments.

Note 2 Important changes in the financial statements compared with the preceding year

No significant changes have been made compared with the preceding year.

Note 3 Accounting policies

Conformity with standards and regulations
The consolidated accounts have been prepared in accordance with the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) as well as the interpretations issued by the IFRS Interpretations Committee (IFRSIC) as endorsed by the European Commission for application within the EU. In addition, recommendation RFR 1 – "Supplementary Accounting Policies for Groups", issued by the Swedish Financial Reporting Board (RFR), has been applied. RFR 1 specifies the additions to the IFRS disclosure requirements that are required by the Swedish Annual Accounts Act.

New IFRSs and interpretations effective as from 2017
New or revised accounting standards are not considered to have a material impact on the Vattenfall's Group's financial statements.

New IFRSs and interpretations effective as from 2018 and later
A number of accounting standards and interpretations have been published, but have not become effective. Below are the changes in standards that will affect the Vattenfall Group's financial statements. Other revised accounting standards and interpretations are not considered to have a material impact on the Vattenfall Group's financial statements.

IFRS 9 "Financial Instruments"
Vattenfall has completed its analysis and calculated the effects of application of the new standard IFRS 9 "Financial Instruments", effective as from 1 January 2018. The effect on equity of changed accounting policies as per 1 January 2017 is only SEK 1 million. The effect is attributable solely to the changed rules for recognition of impairment losses under IFRS 9. The low effect is due to the counterparties' good credit ratings. As per 31 December 2017 the effect in the income statement was SEK –1 million and is attributable to impairment. A small portion of short-term investments has been revaluated. However, the effect of this revaluation is zero both as per 1 January 2017 and as per 31 December 2017. With respect to hedge accounting, no comparison figures have been calculated for 2017. The effect of the new hedge accounting rules will have only a marginal effect on Vattenfall's financial statements from 2018.

IFRS 15 – "Revenue from Contracts with Customers"
During 2017 Vattenfall finalised its analysis of the effects of implementation of the new standard IFRS 15 – "Revenue from Contracts with Customers", which becomes effective as from 2018. As communicated in previous reports, the effect in the income statement of implementation of IFRS 15 is limited for the Vattenfall Group. Changes compared with the current revenue recognition standard IAS 18 (including IAS 11), are in the following areas:

BA Customers & Solutions
Vattenfall offers customers discounts and bonuses primarily on sale of electricity through different campaigns. Various types of discounts and bonuses are offered in different countries. Today these discounts and bonuses are generally reported as a reduction of revenue when the customer receives the discount or bonus. According to IFRS 15, discounts and bonuses are to be reported when the performance obligation to the customer is satisfied, which in general is when the customer consumes the electricity. The effect on the restated financial statements for the 2017 financial year is thus a decrease in revenue by SEK 108 million. The effect on a quarterly basis will be presented in the Q1 2018 report.

Vattenfall sells its products through different sales channels and incurs different types of costs in connection with this. According to IFRS 15, incremental costs to obtain contracts are to be capitalised and amortised over the length of the contracts. Since part of these costs have been previously expensed as incurred, an effect of SEK 62 million lower costs arises in the restated 2017 figures. The effect on a quarterly basis will be presented in the Q1 2018 report.

The effect on equity as per 1 January 2017 in the restated financial statements for 2017 from the changes in BA Customers & Solutions is an increase by SEK 216 million.[1]

BA Distribution
Vattenfall has contracts with business and private customers in Sweden covering distribution of electricity. The transaction price for distribution includes a fixed monthly fee and a variable fee based on the customer's electricity consumption. These contracts carry a single performance obligation, which is to stand ready to distribute electricity to the customer. The connection fees paid by the customers for connecting them to the grid are part of the same performance obligation. The performance obligation is satisfied over time. In accordance with IFRS 15, the fixed fees are recognised as revenue as they are invoiced and the variable fees are recognised as revenue based on the customer's consumption. The connection fees are recognised over time since Vattenfall is responsible for maintenance and repairs of the assets used in the physical connection.

Compared with the current reporting under IAS 18, application of IFRS 15 does not entail any changes in revenue recognition for fixed and variable fees. The connection fees are currently recognised as revenue upon connection. An effect on the restated 2017 figures thus arises. The effect on equity as per 1 January 2017 is a decrease by SEK 1,666 million and for the 2017 financial year the effect on revenue is a decrease by SEK 65 million. The effect on a quarterly basis will be presented in the Q1 2018 report.

BA Heat
Vattenfall has contracts with business and private customers in Sweden, Germany and the Netherlands for sales and distribution of heat. The transaction price for the sales and distribution includes a fixed monthly fee and a variable fee based on the customer's consumption. In general customers also pay a connection fee. The accounting conclusion under IFRS 15 for the fixed and variable fees as well as connection fees is the same as described above for BA Distribution.

Compared with the current reporting under IAS 18, application of IFRS 15 does not entail any changes in revenue recognition for fixed and variable fees. For some of Vattenfall's units, connection fees are currently recognised as revenue upon connection. An effect on the restated 2017 figures thus arises. The effect on equity as per 1 January 2017 is a decrease by SEK 183 million, and for the 2017 financial year the effect on revenue is a decrease by SEK 8 million. The effect on a quarterly basis will be presented in the Q1 2018 report.

The combined effects of implementation of IFRS 15 on the restated financial statements for 2017 for the Vattenfall Group are as follows:

- The effect for on 2017 is a decrease in revenue by SEK 181 million and a decrease in costs by SEK 62 million. In addition are some effects on deferred taxes.
- Effect on equity as per 1 January 2017 is a decrease by SEK 1,634 million[1].

[1] The value has been adjusted compared with information previously published in Vattenfall's 2017 year-end report.

IFRS 16 – "Leases"
IFRS 16 – "Leases" is a new standard for reporting leases that requires lessees to recognise assets and liabilities for all leases unless the lease term is 12 months or less or has a low value. IFRS 16 replaces IAS 17 – "Leases" along with the accompanying interpretations. IFRS 16 becomes effective as from 2019. Vattenfall has been conducting an analysis of the new standard since mid-2017. Vattenfall expects the effects of IFRS 16 to be minor with respect to the Group's balance sheet total.

Basis of measurement
Assets and liabilities are reported at cost or amortised cost, with the exception of certain financial assets and liabilities and inventories held for trading, which are measured at fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets and liabilities measured at fair value consist of holdings in the categories financial assets and liabilities recognised at

fair value through profit or loss, holdings in the category available-for-sale financial assets, and all derivatives.

Vattenfall uses valuation methods that reflect the fair value of an asset or liability appropriately. Financial assets and liabilities that are measured at fair value are described below according to the fair value hierarchy (levels), which in IFRS 13 is defined as follows:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices). In Level 2 Vattenfall reports mainly commodity derivatives, currency-forward contracts and interest rate swaps
- Level 3: Inputs for the asset or liability that is not based on observable market data (that is, unobservable inputs)

Classification into a level is determined by the lowest level input that is significant for the measurement of the fair value at the end of a reporting period. Vattenfall assesses whether reclassifications between the levels are necessary. Observable input data are used whenever possible and relevant. For assets and liabilities included in Level 3, fair value is modelled either on the basis of market prices with adjustments that consider specific terms of a contract, or on the basis of unobservable inputs such as future cash flows. The assumptions for the estimated cash flows are monitored on a regular basis and adjusted if necessary.

Functional and presentation currencies

The functional currency is the currency of the primary economic environment in which each Group entity operates. The Parent Company's functional currency is Swedish kronor (SEK), which is also the presentation currency of both the Parent Company and the Group. This means that the financial statements are presented in Swedish kronor. Unless otherwise stated, all figures are rounded off to the nearest million Swedish kronor (SEK million).

Significant accounting policies

The accounting policies of the Group described below or in each respective note to the consolidated accounts (see below), with the exception of what is stated above under the heading New IFRSs and interpretations effective as of 2017, have been applied consistently for all periods presented in the consolidated financial statements.

The accounting policies are described further in the following notes to the consolidated accounts:

- Note 7 Net sales
- Note 8 Operating segments
- Note 13 Financial income
- Note 14 Financial expenses
- Note 15 Income taxes
- Note 16 Leasing
- Note 18 Intangible assets: non-current
- Note 19 Property, plant and equipment
- Note 25 Inventories
- Note 26 Intangible assets: current
- Note 32 Assets held for sale
- Note 34 Pension provisions
- Note 35 Other interest-bearing provisions
- Note 40 Financial instruments by category, offsetting of financial assets and liabilities, and financial instruments' effects on income

Classification of current and non-current assets and liabilities

An asset is classified as a current asset when it is held primarily for the purpose of trading or is expected to be realised within twelve months after the balance sheet date or consists of cash and cash equivalents, provided it is not subject to restrictions on its exchange or use for regulating a liability at least twelve months after the balance sheet date. All other assets are classified as non-current assets.

A liability is classified as a current liability when it is held primarily for the purpose of trading or is expected to be settled within twelve months after the balance sheet date or one for which the Group does not have an unconditional right to defer settlement for a minimum of twelve months after the balance sheet date. All other liabilities are classified as non-current liabilities.

Principles of consolidation

The consolidated financial statements cover the Parent Company, subsidiaries, associated companies, joint ventures and joint arrangements that are reported as a joint operation according to IFRS 11.

Subsidiaries

Subsidiaries are all entities over which the Parent Company has control. Control is considered to exist when the following three criteria are met: (1) the investor is exposed to or is entitled to a variable return from the investment, (2) the investor has the opportunity to influence the return through its opportunity to govern the company, and (3) there is a link between the return that is received and the opportunity to govern the company. By influence is meant the rights that allow the investor to govern the relevant business, that is, the business which significantly influences the company's return. Business combinations are accounted for using the purchase method. The subsidiary's financial statements, which are prepared in accordance with the Group's accounting policies, are included in the consolidated accounts from the point of acquisition to the date when control ceases.

Joint arrangements

A joint arrangement is an arrangement over which two or more parties have joint control. Joint arrangements are classified as a joint operation or joint venture. A joint operation entails that the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint venture entails that the parties that have joint control of the arrangement have rights to the net assets of the arrangement. In a joint operation, the respective owners recognise in relation to their interest in the joint organisation: their assets and liabilities as well as their respective share of assets and liabilities held or incurred jointly; revenue from the sale of their respective shares of the output of the joint operation and their share of the revenue from the sale of the output of the joint operation; and their expenses, including the share of any expenses incurred jointly. Joint ventures are reported in accordance with the equity method.

Associated companies

Associated companies are companies in which the Group has a significant – but not controlling – influence or joint control with other owners over their operational and financial management, usually through shareholdings corresponding to between 20% and 50% of the votes. From the point at which the significant influence is acquired, participations in associated companies are reported in the consolidated accounts in accordance with the equity method.

Transactions that are eliminated upon consolidation

Intra-Group receivables and liabilities, income and expenses, as well as gains or losses arising from intra-Group transactions between Group companies, are eliminated in their entirety when preparing the consolidated accounts. Gains arising from transactions with associated companies and joint ventures are eliminated to an extent that corresponds to the Group's holding in the company. Losses are eliminated in the same manner as gains, but are treated as an indicator of impairment.

Foreign currencies

Transactions in foreign currencies

Transactions in foreign currencies are translated to the functional currency at the exchange rate on the day of the transaction. On the balance sheet date, monetary assets and liabilities in foreign currencies are translated to the functional currency at the exchange rate applicable on that day. Exchange rate differences arising from translation of currencies are reported in the income statement. Operationally derived exchange gains and losses are shown under Other operating income and Other operating expenses, respectively. Financially derived exchange gains and losses are shown as Financial income and Financial expenses, respectively.

Financial reporting of foreign activities

Assets and liabilities of foreign activities, including goodwill and other consolidated surplus and deficit values, are translated to SEK at the exchange rate in effect on the balance sheet date. Income and expenses of foreign activities are translated to SEK using an average exchange rate. Translation differences arising from foreign currency translation of foreign activities are reported in Other comprehensive income.

For the Vattenfall Group, key exchange rates applied in the accounts are provided in Note 6 to the consolidated accounts, Exchange rates.

Financial assets and financial liabilities

Financial instruments are reported initially at cost, corresponding to the instrument's fair value plus transaction costs for all financial instruments, except for those that belong to the category "financial assets at fair value through profit or loss" and all derivatives, which are reported at fair value excluding transaction costs.

A financial asset or financial liability is recognised on the balance sheet when Vattenfall becomes a party to such in accordance with terms of the

instrument's contract. A trade receivable is recognised on the balance sheet when an invoice has been sent. A liability is recognised when the counterparty has performed a service and a contractual obligation to pay exists, even if the invoice has not yet been received. A trade payable is recognised when the invoice has been received.

A financial asset is derecognised from the balance sheet when the rights under the contract are sold, expire, or when Vattenfall no longer retains the risks and rewards of ownership of the asset. The same applies for parts of a financial asset. A financial liability is derecognised from the balance sheet when the contractual obligation has been fulfilled or in some other way extinguished. The same applies for parts of a financial liability.

For financial instruments traded in active financial markets, the fair value is set at the rate applicable when the market closes on the balance sheet date. The same rule applies for fixing the fair value of bilaterally traded financial instruments (OTC trading). For unlisted financial instruments, fair value is set by discounting estimated future cash flows. Discounting is done using discounting factors based on return curves in the cash flows of the respective currencies. The return curves are based on the market interest rates, such as swap rates, that apply on the balance sheet date.

Impairment of financial assets

On each reporting occasion, an assessment is made to determine if there is objective evidence that a financial asset has become impaired. Objective evidence consists in part of observable conditions that have a negative impact on the ability to recover the cost of the asset, and in part of a significant or prolonged decrease in the fair value of an investment in a financial asset that is classified as an available-for-sale financial asset.

Important estimations and assessments in the preparation of the financial statements

Preparation of the financial statements in accordance with IFRS requires the company's executive management and Board of Directors to make estimations and assessments as well as to make assumptions that affect application of the accounting policies and the reported amounts of assets, liabilities, income and expenses. These estimations and assessments are based on historic experience and other factors that seem reasonable under current conditions. The results of these estimations and assessments are then used to establish the reported values of assets and liabilities that are not otherwise clearly documented from other sources. The final outcome may deviate from the results of these estimations and assessments. The estimations and assessments are revised on a regular basis. The effects of changes in estimations are reported in the period in which the changes were made if the changes affected this period only or in the period the changes were made and future periods if the changes affect both the current period and future periods.

Important estimations and assessments are described further in the following notes to the consolidated accounts:

- Note 15 Income taxes
- Note 18 Intangible assets: non-current
- Note 19 Property, plant and equipment
- Note 32 Assets held for sale
- Note 34 Pension provisions
- Note 35 Other interest-bearing provisions

Note 4 Acquired and divested operations

Acquired operations

	Fair value	
	2017	2016
Intangible assets: non-current	1,504	18
Property, plant and equipment	211	93
Participations in associated companies and joint arrangements	41	1
Other shares and participations	28	–
Other non-current assets	–	1
Trade receivables and other receivables	72	91
Current tax asset	5	–
Cash and cash equivalents	48	98
Other interest-bearing liabilities	-146	–
Provisions	-15	–
Deferred tax liabilities	-70	-4
Trade payables and other liabilities	-239	-207
Total net assets	**1,439**	**91**
Goodwill	232	89
Liabilities to owners of non-controlling interests	-110	-51
Total purchase consideration = Cash flow for the year	**1,561**	**129**

Acquisition 2017
The fair values presented above pertain mainly to the acquisition of I Supply Energy Ltd and Windcollectief Wieringermeer B.V. and are based on a preliminary purchase price allocation analysis. Acquisitions/investments in associated companies and other shares and participations amounted to SEK -254 million. I Supply Energy Ltd is a gas and electricity supplier based in Bournemouth, United Kingdom. Vattenfall purchased 100% of the shares in the company, and obtained control over the business as of 1 July 2017. The majority of the assets in the company relate to customer relationships, IT systems and goodwill. Windcollectief Wieringermeer B.V. is located in the Netherlands and is a Wind project consisting of 32 turbines. Vattenfall acquired 100% of the shares in the company, and obtained control over the business in September 2017.

Acquisition 2016
The fair values presented above pertain mainly to the acquisition of Vindstød A/S. Acquisitions/investments in associated companies and other shares and participations amounted to SEK -541 million.

Divested operations

	Carrying amount	
	2017	2016
Intangible assets: non-current	–	70
Property, plant and equipment	995	8,350
Participations in associated companies and joint arrangements	–	5
Deferred tax assets	–	894
Other non-current assets	–	407
Inventories	22	2,336
Trade receivables and other receivables	80	5,660
Cash and cash equivalents	213	9,643
Assets held for sale	700	2,996
Borrowings	–	-41
Provisions	–	-18,245
Deferred tax liabilities	-161	-1,976
Trade payables and other liabilities	-98	-6,546
Liabilities associated with assets held for sale	-270	-3,015
Total net assets	**1,481**	**538**
Non-controlling interests' share of divested net assets	170	28
Sales proceeds received in 2017	-165	152
Proceeds from sales/Cash flow for the year	1,725	1,298
Net of proceeds received in previous years and provision for price adjustments	5	–
Cash flow for the year	**1,725**	**1,298**
Capital gain (+)/loss (–) recognised in the income statement	**254**	**940**

Divestments in 2017
Divestments in 2017 consist in all essential respects of the sale of T.A. Lauta GmbH & Co. oHG, IKWR Industriekraftwerk Rüdersdorf GmbH and Västerbergslagens Kraft AB.

Divestments in 2016
Divestments in 2016 consist in all essential respects of the sale of the lignite operations, which are reported as a discontinued operation, Netzervice Hamburg GmbH, and Metering Hamburg GmbH.

Note 5 Discontinued operations

In accordance with IFRS 5 – "Non-Current Assets Held for Sale and Discontinued Operations", the lignite operations, which have been divested, are reported as a discontinued operation as from the second quarter of 2016. The lignite operations are thus reported on a separate line in the income statement. In the segment reporting, the parts of the Power Generation and Heat segments that pertain to the lignite operations have been reclassified as "Discontinued operations", and the Power Generation and Heat operating segments have been restated for earlier periods so that they only include the continuing operations. In accordance with IFRS 5, the balance sheet has not been restated to reflect earlier periods. The Statement of cash flows has not been restated. Cash flow from the discontinued lignite operations is presented below in this note.

Earnings from discontinued operations

	2017	2016
Net sales	–	13,459
Expenses	–	-13,957
Net financial items	–	-387
Realised gains related to fair value hedges	–	37
Translation differences related to hedging of net investments in foreign operations	–	-477
Capital gain	–	278
Impairment loss recognised on the remeasurement to fair value less costs to sell	–	-21,883
Profit before income taxes from discontinued operations	**–**	**-22,930**
Income taxes	–	-903
Profit for the period from discontinued operations attributable to owners of the Parent Company	**–**	**-23,833**

	2017	2016
Operating profit (EBIT)	–	-22,542
Items affecting comparability	–	22,538
Underlying operating profit	**–**	**-4**

Cash flow from discontinued operations

	2017	2016
Funds from operations (FFO)	–	1,291
Cash flow from operating activities	–	2,200
Cash flow from investing activities	–	-950
Cash flow from financing activities	–	466

For more information see Note 4 to the consolidated accounts, Acquired and divested operations.

Note 6 Exchange rates

Key exchange rates applied in the accounts of the Vattenfall Group:

		Average rate		Balance sheet date rate	
	Currency	2017	2016	31 December 2017	31 December 2016
Euro countries	EUR	9.6392	9.4496	9.8438	9.5525
Denmark	DKK	1.2958	1.2690	1.3222	1.2849
Norway	NOK	1.0316	1.0181	1.0004	1.0513
Poland	PLN	2.2659	2.1647	2.3567	2.1660
UK	GBP	11.0311	11.6081	11.0950	11.1571
USA	USD	8.5405	8.5807	8.2080	9.0622

Note 7 Net sales

Accounting policy
Net sales include sales proceeds from sales and distribution of electricity and heat, sales of gas, trading power derivatives and other revenues such as service and consulting assignments and connection fees.

Sales and distribution of electricity, heat and gas
Sales of electricity, heat and gas and related distribution are recognised as revenue at the time of delivery, excluding value-added tax and excise taxes.

Vattenfall's electricity transactions between Nordic electricity generation and sales activities in the Nordic countries are transactions vis-à-vis the Nordic electricity exchange (Nord Pool Spot). The purchases that the sales activities make from the Nordic electricity exchange are, at the Group level, offset against sales of generation to the Nordic electricity exchange.

The change in fair value of derivatives, including power derivatives, that does not qualify for hedge accounting is reported in net sales profit unless it does not relate to derivative instruments used in financial activities.

Other revenues
In the case of service and consulting assignments, the percentage of completion method is applied, that is, revenues and expenses are reported in proportion to the degree of completion. The degree of completion is established according to the relation between accrued expenses on the balance sheet date and estimated total expenses. In cases where losses are expected, a provision is established immediately. Connection fees for electricity distribution and heat distribution are reported as revenues to the extent that they are not required to cover future obligations.

Financial information

Continuing operations	2017	2016
Sales and distribution of electricity, heat and gas	144,554	147,481
Rendering of service and consulting assignments	8,295	8,438
Excise taxes (included in the above)	-17,554	-16,711
Net sales	**135,295**	**139,208**

Vattenfall did not have transactions in 2017 or 2016 with a single external customer where revenues amounted to more than 10% of the Group's total net sales.

Note 8 Operating segments

Accounting policy
An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses and for which discrete financial information is available. An operating segment's result is reviewed regularly by "the chief operating decision maker", who in Vattenfall is the Chief Executive Officer, to assess its performance and to make decisions about resources to be allocated to the operating segment.

Financial information
Vattenfall is organised in six Business Areas: Customers & Solutions, Generation, Markets, Wind, Heat, and Distribution. The aim with the organisational structure is to increase the Group's business and performance focus, and to capitalise on cross-border synergies. The segment reporting corresponds with Vattenfall's organisational structure.

Areas of responsibility for the operating segments
The Customers & Solutions operating segment is responsible for sales of electricity, gas and energy services in all of Vattenfall's markets.

The Power Generation operating segment comprises the Generation and Markets Business Areas. The segment includes Vattenfall's hydro and nuclear power operations, optimisation and trading operations.

The Wind operating segment is responsible for Vattenfall's wind power operations.

The Heat operating segment comprises Vattenfall's heat operations, including all thermal operations.

The Distribution operating segment comprises Vattenfall's electricity distribution operations in Sweden and Germany (Berlin).

The financial steering key performance indicators for the operating segments are return on capital employed, underlying operating profit, operating expenses and cash flow. The financial information in the IFRS reporting is used to calculate these key performance indicators.

Staff Functions and Shared Service Centres
A number of Group-wide Staff Functions direct, administrate and support the business activities. The Staff Functions are centrally placed within the organisation as a whole and in the Business Areas. Shared Service Centres (Shared Services) focus on transaction-related processes and are an integral part of Vattenfall's business activities. Shared Services are led with a focus on efficiency and utilisation of scale economies. Staff Functions and Shared Services are reported under the heading Other.

	External net sales		Internal net sales		Total net sales	
	2017	2016	2017	2016	2017	2016
Customers & Solutions	**67,510**	**67,862**	**1,551**	**1,368**	**69,061**	**69,230**
Power Generation	**43,648**	**49,276**	**50,769**[3]	**49,721**[3]	**94,417**	**98,997**
Wind	**6,669**	**4,384**	**2,769**	**2,318**	**9,438**	**6,702**
Heat	**14,890**	**15,110**	**15,842**	**13,304**	**30,732**	**28,414**
Distribution	**16,904**	**15,233**	**4,590**	**4,428**	**21,494**	**19,661**
– of which, Distribution Germany	5,970	4,978	4,141	3,954	10,111	8,932
– of which, Distribution Sweden	10,934	10,255	449	474	11,383	10,729
Other[1]	**524**	**326**	**4,427**	**5,037**	**4,951**	**5,363**
Eliminations	**-14,850**[2]	**-12,983**[2]	**-79,948**	**-76,176**	**-94,798**	**-89,159**
Total continuing operations	**135,295**	**139,208**	**–**	**–**	**135,295**	**139,208**
Discontinued operations	–	13,459	–	–	–	13,459
Total	**135,295**	**152,667**	**–**	**–**	**135,295**	**152,667**

	Operating profit before depreciation, amortisation and impairment losses (EBITDA)		Underlying operating profit before depreciation, amortisation and impairment losses	
	2017	2016	2017	2016
Customers & Solutions	**2,901**	**2,775**	**2,994**	**2,825**
Power Generation	**9,254**	**3,962**	**13,936**	**14,354**
Wind	**6,404**	**4,442**	**6,397**	**4,297**
Heat	**7,122**	**7,062**	**6,959**	**7,059**
Distribution	**9,229**	**7,644**	**9,028**	**7,669**
– of which, Distribution Germany	1,822	1,337	1,835	1,355
– of which, Distribution Sweden	7,414	6,307	7,200	6,314
Other[1]	**-391**	**1,326**	**-550**	**-58**
Eliminations	**-59**	**-2**	**-59**	**-2**
Total continuing operations	**34,460**	**27,209**	**38,705**	**36,144**
Discontinued operations	–	943	–	2,068
Total	**34,460**	**28,152**	**38,705**	**38,212**

	Operating profit (EBIT)		Underlying operating profit	
	2017	2016	2017	2016
Customers & Solutions	**1,819**	**1,749**	**1,913**	**1,830**
Power Generation	**6,138**	**-3,648**	**10,820**	**11,410**
Wind	**1,713**	**898**	**2,137**	**878**
Heat	**3,541**	**-3,366**	**3,379**	**3,230**
Distribution	**6,341**	**4,838**	**6,140**	**4,863**
– of which, Distribution Germany	948	527	962	544
– of which, Distribution Sweden	5,400	4,311	5,185	4,319
Other[1]	**-849**	**868**	**-1,007**	**-512**
Eliminations	**-59**	**-2**	**-59**	**-2**
Total continuing operations	**18,644**	**1,337**	**23,323**	**21,697**
Discontinued operations	–	-22,542	–	-4
Total	**18,644**	**-21,205**	**23,323**	**21,693**

Continuing operations	2017	2016
Underlying operating profit	23,323	21,697
Items affecting comparability (for specification, see page 89)	-4,679	-20,360
Financial income and expenses	-5,755	-6,382
Profit before income taxes	**12,889**	**-5,045**

	Participations in the results of associated companies		Depreciation and amortisation		Impairment losses affecting operating profit	
	2017	2016	2017	2016	2017	2016
Customers & Solutions	**–**	**–**	**1,081**	**995**	**–**	**31**
Power Generation	**-17**	**-2,324**	**3,114**	**2,944**	**2**	**4,665**
Wind	**-54**	**-2**	**4,260**	**3,419**	**436**	**125**
Heat	**113**	**224**	**3,581**	**3,829**	**–**	**7,530**
Distribution	**–**	**–**	**2,888**	**2,806**	**–**	**–**
– of which, Distribution Germany	–	–	874	811	–	–
– of which, Distribution Sweden	–	–	2,014	1,995	–	–
Other[1]	**297**	**251**	**457**	**455**	**–**	**3**
Total continuing operations	**339**	**-1,851**	**15,381**	**14,448**	**438**	**12,354**
Discontinued operations	–	–	–	2,073	–	21,413
Total	**339**	**-1,851**	**15,381**	**16,521**	**438**	**33,767**

	Investments		Assets	
	2017	2016	2017	2016
Customers & Solutions	**711**	**474**	**46,460**	**46,103**
Power Generation	**3,419**	**3,955**	**263,820**	**252,024**
Wind	**7,161**	**8,329**	**59,381**	**60,322**
Heat	**4,215**	**3,929**	**101,290**	**101,691**
Distribution	**5,483**	**5,457**	**57,138**	**53,450**
– of which, Distribution Germany	1,490	1,628	16,076	15,614
– of which, Distribution Sweden	3,993	3,829	41,062	37,836
Other[1]	**190**	**-5**	**148,478**	**185,720**
Eliminations	**-6**	**-218**	**-268,699**[4]	**-290,050**[4]
Total continuing operations	**21,173**	**21,921**	**407,868**	**409,260**
Discontinued operations	–	1,149	–	–
Total	**21,173**	**23,070**	**407,868**	**409,260**

[1] "Other" pertains mainly to all Staff functions including treasury activities and Shared Service Centres.

[2] Pertains to Trading's sales to the Nordic electricity exchange. Vattenfall's sales organisation buys the corresponding electricity from the Nordic electricity exchange.

[3] Pertains mainly to Trading's sales of electricity, fuel and CO_2 emission allowances to other segments within Vattenfall.

[4] Chiefly concerns Trading's liquid assets and financial receivables from other operating segments.

Note 9 Information about geographical areas

	External net sales		Internal net sales		Total net sales	
	2017	2016	2017	2016	2017	2016
Sweden	43,433	43,431	4,418	3,302	47,851	46,733
Germany	63,601	67,143	59,824	38,159[2]	123,425	105,302[2]
Netherlands	22,300	24,302	58,514	49,124	80,814	73,426
Other countries	9,942	7,087	1,739	1,631	11,681	8,718
Eliminations	-3,981[1]	-2,755[1]	-124,495	-92,216[2]	-128,476	-94,971[2]
Total continuing operations	**135,295**	**139,208**	**–**	**–**	**135,295**	**139,208**
Discontinued operations	–	13,459	–	–	–	13,459
Total	**135,295**	**152,667**	**–**	**–**	**135,295**	**152,667**

	Operating profit (EBIT)		Underlying operating profit		Intangible assets: non-current, property, plant and equipment and investment property	
	2017	2016	2017	2016	2017	2016
Sweden	11,931	8,282	14,344	12,364	113,442	107,444
Germany	7,092	-7,386	7,395	7,701	71,707	70,445
Netherlands	-860	217	1,031	1,366	34,221	33,127
Other countries	482	224	553	266	25,993	23,040
Total continuing operations	**18,644**	**1,337**	**23,323**	**21,697**	**245,364**	**234,056**
Discontinued operations	–	-22,542	–	-4	–	–
Total	**18,644**	**-21,205**	**23,323**	**21,693**	**245,364**	**234,056**

[1] Pertains to sales from Swedish companies to the Nordic electricity exchange. Vattenfall's sales organisations in other Nordic countries buy the corresponding electricity from the Nordic electricity exchange.

[2] The value has been adjusted compared with information previously published in Vattenfall's 2016 Annual and Sustainability Report. This is due to an elimination that was incorrectly treated.

Note 10 Depreciation and amortisation

Depreciation of property, plant and equipment and of investment property and amortisation of non-current intangible assets in the income statement are broken down as follows:

	2017	2016
Cost of products sold	13,652	13,233
Selling expenses	415	381
Administrative expenses	1,312	812
Research and development costs	2	21
Other operating expenses (investment property)	–	1
Total continuing operations	**15,381**	**14,448**
Discontinued operations	–	2,073
Total	**15,381**	**16,521**

Amortisation of non-current intangible assets for the continuing operations is included in Cost of products sold above in the amount of SEK 957 million (905), Selling expenses in the amount of SEK 209 million (156) and Administrative expenses in the amount of SEK 60 million (47).

Note 11 Impairment losses and reversed impairment losses

Accounting policy

General principles

Assessments are made throughout the year for any indication that an asset may have decreased in value. If there is an indication of this kind, the asset's recoverable amount is estimated. For goodwill and other intangible assets with an indefinite useful life and for intangible assets that are still not ready for use, the recoverable amount is calculated at least annually or as soon there is an indication that an asset has decreased in value.

If the essentially independent cash flow for an individual asset cannot be established for the assessment of any need for impairment, the assets must be grouped at the lowest level where it is possible to identify the essentially independent cash flow (a so-called cash-generating unit). An impairment loss is reported when an asset or cash-generating unit's reported value exceeds the recoverable amount. Any impairment loss is recognised in profit or loss. Impairment of assets attributable to a cash-generating unit is allocated primarily to goodwill. Thereafter, a proportional impairment loss is conducted of other assets that are part of the unit.

Calculation of the recoverable amount

The recoverable amount is the higher of fair value less costs to sell and value in use. When calculating value in use, the future cash flow is discounted by a discounting rate that takes into consideration risk-free interest and the risk associated with the specific asset.

Reversal of impairment losses

Impairment of goodwill is never reversed. Impairment of other assets is reversed if a significant and lasting change has occurred in the assumptions that formed the basis for the calculation of the recoverable amount. An impairment loss is reversed only if the asset's carrying amount after reversal does not exceed the carrying amount that the asset would have had if the impairment loss had not been recognised.

Financial information

Process for impairment testing

The main assumptions that executive management has used in calculating projections of future cash flows in cash-generating units with finite useful lives are based on forecasts of the useful life of the respective assets. The projected cash flows are based on market prices and on Vattenfall's long-term market outlook. The long-term market outlook is based on internal and external input parameters and is benchmarked against external price projections. Based on the price assumptions, the dispatch of the power plants is calculated, taking technical, economic and legal constraints into consideration. Technical flexibility of the assets, that is the ability to adapt generation to changes in spot market prices, has been taken into account. Cash flow projections of other cash-generating units are based on the business plan for the coming five years, after which their residual value is taken into account, based on a growth factor of 0% (0%).

Future cash flows have been discounted to value in use using a discount rate of 4.5% (5.2%) after tax (corresponding to 5.9% before tax) for regulated business. For non-regulated business, future cash flows have been discounted at a rate of 5.1%–7.2% (5.3%–7.3%) after tax (corresponding to 6.7%–9.5% before tax). The discount rate varies for the various asset classes, depending on their risk. When setting the discount rate for non-regulated business, consideration has been given to the extent of exposure this has for changes in wholesale prices of electricity, fuel, CO_2 emission allowances, and regulatory risks. An increase in the discount rate by 0.5 percentage points would give rise to a need to recognise additional impairment losses of approximately SEK 1 billion.

Electricity prices and margins for generation assets represent another major value driver. Electricity prices are relevant for hydro and nuclear power plants, while the most important production margins are the "clean spark spread" for gas-fired power plants and the "clean dark spread" for hard coal-fired power plants. Those spreads include electricity prices as well as the respective cost for fuel and CO_2 emission allowances to produce the electricity, considering fuel type and efficiency factors. Based on the assumptions used in the impairment testing, a decrease in future electricity prices by 5%, with unchanged costs for fuel and CO_2 emission allowances, would lead to a decrease in the value of fossil-based assets in Germany and the Netherlands by between 19% and 28%, depending on the type of asset. This would lead to recognition of further impairment losses of approximately SEK 5 billion. For other assets, such a decrease in electricity prices would not lead to any impairment.

Break down of impairment losses in the income statement and reversed impairment losses

Impairment losses for non-current intangible assets, property, plant and equipment, financial non-current assets and investment properties in the income statement are broken down as follows:

	2017	2016
Cost of products sold	150	11,120
Administrative expenses	262	113
Participations in the result of associated companies	26	1,118
Other operating expenses	–	3
Total continuing operations	**438**	**12,354**
Discontinued operations	–	21,413
Total	**438**	**33,767**

During 2017, previously recognised impairment losses of SEK 4 million were reversed in the income statement, pertaining to wind projects in the UK. Previously recognised impairment losses that were reversed during 2016 of SEK 929 million pertained to waste-to-energy power plants in Germany.

Impairment losses 2017

Vattenfall has performed impairment testing by calculating the value in use of the cash-generating units. The structure of the cash-generating units, which represent the smallest group of identifiable assets that generate continuous cash inflows that are largely independent of other assets or groups of assets, is based on the Group's Business Area structure.

Vattenfall closely monitors market developments on a continuous basis and their impact on operations. In the annual impairment testing carried out during the fourth quarter of 2017, a stabilisation of market conditions was noted. A review of the ongoing development projects in the Wind Business Area indicated a need to recognise impairment for number of projects due to decisions taken to not continue development or lowered profitability estimates. Impairment losses charged against operating profit in 2017 amounted to SEK 438 million, of which SEK 436 million are attributable to the Wind operating segment.

Goodwill is not amortised but is instead tested annually for impairment. Goodwill amounting to SEK 13,324 million is allocated to the Customers & Solutions operating segment (Sales B2B and B2C cash-generating unit). Impairment testing of goodwill is included in the impairment testing process described above.

Impairment losses 2016

Impairment losses charged against operating profit in 2016 amounted to SEK 33,767 million. Of this total, SEK 21,413 million is attributable to discontinued operations, SEK 4,665 million to the Power Generation operating segment, SEK 125 million to the Wind operating segment, SEK 7,530 million to the Heat operating segment, SEK 31 million to the Customers & Solutions operating segment, and SEK 3 million to Other.

Note 12 Operating expenses according to type

Continuing operations	2017	2016
Personnel costs	18,044	17,821
Depreciation and amortisation	15,381	14,448
Impairment losses of non-current assets	438	12,354
Reversed impairment losses of non-current assets	-4	-929
Other operating expenses incl. input commodities	85,411	95,481
Total	**119,270**	**139,175**

Note 13 Financial income

Accounting policy

Interest income is reported as it is earned. The calculation is made on the basis of the return on underlying assets in accordance with the effective interest method. Dividend income is reported when the right to receive payment is established. Interest income is adjusted for transaction costs and any rebates, premiums and other differences between the original value of the receivable and the amount received when due.

Financial information

Continuing operations	2017	2016
Return from the Swedish Nuclear Waste Fund	1,138	866
Interest income attributable to investments	238	381
Net change in value from remeasurement of derivatives	1,194	481
Dividends	88	30
Capital gains from divestments of shares and participations	12	9
Total	**2,670**	**1,767**

Note 14 Financial expenses

Accounting policy

For calculation of interest effects attributable to provisions, various discount rates have been used, see Note 34 to the consolidated accounts, Pension provisions, and Note 35 to the consolidated accounts, Other interest-bearing provisions, for the discount rates used. Issue costs and similar direct transaction costs for raising loans are distributed over the term of the loan in accordance with the effective interest method. Borrowing costs directly attributable to investment projects in non-current assets which take a substantial period of time to complete are not reported as a financial expense but are included in the cost of the non-current asset during the construction period. Leasing fees pertaining to finance leases are distributed between interest expense and amortisation of the outstanding debt. Interest expenses are distributed over the leasing period so that each accounting period is charged in the amount corresponding to a fixed interest rate for the reported debt in each period. Variable fees are carried as an expense in the period in which they arise.

Financial information

Continuing operations	2017	2016
Interest expenses attributable to loans	5,088	3,502
Interest effects attributable to provisions	2,355	3,243
Interest expenses for the net of pension provisions and plan assets	820	954
Exchange rate differences, net	144	187
Net change in value from remeasurement of other financial assets	18	18
Impairment losses for shares and participations	–	181
Other	–	64
Total	**8,425**	**8,149**

Note 15 Income taxes

Accounting policy

Income taxes comprises current tax and deferred tax. Income tax is reported in the income statement except when the underlying transaction is reported in Other comprehensive income or in Equity, whereby also the associated tax effect is reported in Other comprehensive income and Equity, respectively.

Current tax is tax to be paid or received for the current year, with the application of the tax rates that are established or, established in practice as of the balance sheet date. Adjustments of tax paid attributable to previous periods are also included in this.

Deferred tax is calculated in accordance with the balance sheet method on the basis of temporary differences between the reported and taxable values of assets and liabilities. The following temporary differences are not taken into account: temporary differences that arises with the initial recognition of goodwill and temporary differences on initial recognition of assets and liabilities that are not business combinations and at the time of the transaction do not affect either reported or taxable profit. Further, such temporary differences attributable to shares or participations in subsidiaries or associated companies that are not expected to be reversed in the foreseeable future are not taken into account either. The valuation of deferred tax is based on how the reported value of assets or liabilities is expected to be realised or settled. Deferred tax is calculated in accordance with the tax rates and tax rules that have been established or have been established in practice by the balance sheet date.

Deferred tax assets concerning non-deductible temporary differences and tax-loss carryforwards are only reported to the extent that it will be possible for these to be used. The value of deferred tax assets is reduced when it is no longer considered likely that they can be used.

Important estimations and assessments

On its balance sheet, Vattenfall reports deferred tax assets and liabilities that are expected to be realised in future periods. In calculating these deferred taxes, certain assumptions and estimations must be made. The estimations include assumptions about future taxable earnings, that applicable tax laws and tax rates will be unchanged in the countries in which the Group is active, and that applicable rules for utilising tax-loss carryforwards will not be changed. The Group also reports future expenses arising out of ongoing tax audits or tax disputes under Provisions. The outcome of these may deviate from the estimations made by Vattenfall.

Financial information

Break down of the reported income tax

Continuing operations	2017	2016
Current tax expense (-)/ tax income (+)		
Current taxes pertaining to the period:		
Sweden	-1,578	-2,189
Germany	-1,461	-493
Netherlands	-172	–
Other countries	-22	-28
Adjustment of current tax for prior periods:		
Sweden	2	115
Germany	-342	-78
Netherlands	–	-1
Other countries	16	32
Total current tax	**-3,557**	**-2,642**
Deferred tax expense (-)/ tax income (+)		
Sweden	-17	1,133
Germany	195	4,339
Netherlands	67	-232
Other countries	-6	276
Total deferred tax	**239**	**5,516**
Total income tax expense	**-3,318**	**2,874**

The difference between the nominal Swedish tax rate and the effective tax rate is explained as follows:

	2017		2016	
Continuing operations	**%**		**%**	
Profit before tax		12,889		-5,045
Swedish income tax rate at 31 December	-22.0	-2,836	22.0	1,110
Difference in tax rate in foreign operations	-1.8	-230	14.7	740
Tax adjustment for previous periods	-3.4	-444	3.5	178
Revaluation of previously non-valued losses and other temporary differences[1]	0.0	-2	19.5	985
Tax-loss carryforwards from current year that are not valued	-0.3	-40	-0.3	-15
Other non-taxable income[2]	2.3	298	12.8	646
Other non-deductible expenses[3]	-1.5	-190	-5.2	-262
Participations in the results of associated companies	0.9	116	-11.5	-580
Changed tax rates	0.1	10	1.5	72
Effective tax rate	**-25.7**	**-3,318**	**57.0**	**2,874**

[1] In calculating profit for the period for continuing operations in accordance with IFRS 5, profit for 2016 was positively affected without a corresponding tax expense, as it has been possible under the German rules of joint taxation to utilise non-measured losses regarding the companies in the discontinued operations through 31 May 2016. The effect amounts to SEK 1,062 million for 2016.

[2] Of which gains amounts to SEK 26 million (445).

[3] Of which, non-deductible impairment losses amounts to SEK -50 million (-170).

Balance sheet reconciliation of current tax[1]

Total Vattenfall	**2017**	**2016**
Balance brought forward net asset (+)/ net liability (-)	-626	3,073
Translation differences, acquisitions, disposals and assets held for sale	5	78
Interest and discounting effects on non-current tax items	-12	17
Change via income statement	-3,557	-2,642
Tax effect through equity[2]	293	138
Taxes paid, net	3,218	-1,290
Balance carried forward net asset (+)/ net liability (-)	**-679**	**-626**

[1] Including tax liabilities reported under provision for tax disputes.

[2] Of which, equity hedge amounts to SEK 250 million (39).

Balance sheet reconciliation of deferred tax

	2017						
Total Vattenfall	**Balance brought forward**	**Changes via income statement**	**Changes via other comprehensive income**	**Acquisitions, disposals and assets held for sale**	**Translation differences**	**Reclassification**	**Balance carried forward**
Non-current assets	-23,057	-1,405	–	105	22	–	**-24,335**
Current assets	-5,064	32	–	–	-131	–	**-5,163**
Provisions	17,766	1,295	169	–	195	-1	**19,424**
Other non-current liabilities	1,508	-62	–	-14	27	–	**1,459**
Current liabilities	4,788	860	–	–	145	1	**5,794**
Cash flow hedges	143	–	-467	–	-17	–	**-341**
Tax losses carried forward	678	-481	–	-1	3	–	**199**
Total	**-3,238**	**239**	**-298**	**90**	**244**	**–**	**-2,963**

	2016						
Total Vattenfall	**Balance brought forward**	**Changes via income statement**	**Changes via other comprehensive income**	**Acquisitions, disposals and assets held for sale**	**Translation differences**	**Reclassification**	**Balance carried forward**
Non-current assets	-26,974	2,097	–	1,796	24	–	**-23,057**
Current assets	-1,922	-3,038	–	16	-51	-69	**-5,064**
Provisions	14,417	3,107	500	-450	192	–	**17,766**
Other non-current liabilities	546	970	–	-34	26	–	**1,508**
Current liabilities	1,271	3,400	–	-5	53	69	**4,788**
Cash flow hedges	-3,604	–	3,818	-11	-60	–	**143**
Tax losses carried forward	2,561	-1,924	–	–	41	–	**678**
Total	**-13,705**	**4,612**	**4,318**	**1,312**	**225**	**–**	**-3,238**

Accumulated tax-loss carryforwards

	2017	2016
Sweden	56	32
Germany	7,410	8,048
Netherlands	114	267
Other countries	1,780	1,521
Total	**9,360**	**9,868**

The tax-loss carryforwards fall due as follows:

	2017
2018	17
2019–2022	72
2023 and beyond	157
No time limit	9,114
Total	**9,360**

The tax-loss carryforwards correspond to a potential deferred tax asset of SEK 1,400 million, of which SEK 199 million is booked on the balance sheet as of 31 December 2017. Tax-loss carryforwards not included in the computation of deferred tax represent a tax value of SEK 1,201 million and pertain mainly to loss carryforwards in German operations. These have not been assigned any value, since it is unclear at present whether it will be possible to use them.

Note 16 Leasing

Accounting policy
Expenses paid for operating leases are reported in the income statement on a straight-line basis over the leasing period. Leases are classified as either finance or operating leases. A finance lease exists when the economic risks and benefits associated with ownership are, in essence, transferred to the lessee. If this is not the case, it is classified as an operating lease.

Leased assets
Assets leased under finance leases are reported as assets on the consolidated balance sheet. The commitment to pay future leasing charges is reported as a non-current or current liability. The leased assets are depreciated on a straight-line basis over the shorter of the leasing period or useful life, while the leasing payments are reported as interest and amortisation of the debts.

Operating leases normally entail recognition of the leasing charge as an expense on a straight-line basis over the leasing period.

Assets leased out
Assets that are leased out under finance leases are not reported as Property, plant and equipment, since the risks associated with ownership are transferred to the lessee. Instead, a financial receivable is entered for the future minimum lease payments.

Assets leased out under operating leases are reported as Property, plant and equipment and are subject to depreciation.

Financial information
Leasing expenses
Machinery and equipment leased by the Group through finance leasing and reported as Property, plant and equipment comprises:

	2017	2016
Cost	975	973
Accumulated depreciation according to plan	-342	-340
Total	**633**	**633**

Future payment commitments, as of 31 December 2017, for leasing contracts and rental contracts are broken down as follows:

	Finance leasing, nominal	Finance leasing, present value	Operating leasing
2018	77	70	876
2019	78	68	763
2020	553	484	700
2021	4	–	396
2022	4	–	338
2023 and beyond	–	–	639
Total	**716**	**622**	**3,712**

The current year's leasing expenses amounted to SEK 1,033 million (702).

Leasing revenues
Certain Group companies own and operate power facilities on behalf of customers. Revenues from customers are broken down into two components – a fixed component to cover capital expenses and a variable component based on the quantity delivered. On 31 December 2017, cost of assets reported under operating leases amounted to SEK 5,739 million (5,960). Accumulated depreciation amounted to SEK 3,507 million (3,464) and accumulated impairment losses amounted to SEK 280 million (301).

Future payments for this type of facility are broken down as follows:

	Operating leasing
2018	1,093
2019	1,065
2020	1,046
2021	1,025
2022	997
2023 and beyond	2,879
Total	**8,105**

Note 17 Auditors' fees

Total Vattenfall	2017	2016
Annual audit assignment		
EY	39	39
Audit-related activities besides the annual audit assignment		
EY	3	2
Tax consulting		
EY	1	6
Other assignments		
EY	12	10

Note 18 Intangible assets: non-current

Accounting policy
Goodwill
Goodwill is measured at cost less any accumulated impairment losses. Goodwill is not subject to amortisation but is tested at least annually for impairment. Goodwill that arises on acquisition of associated companies or joint ventures is included in the carrying amount of Participations in associated companies and joint ventures.

Other intangible non-current assets
Other intangible non-current assets such as concessions, patents, licences, trademarks and similar rights as well as renting rights, mining rights (divested in 2016) and similar rights acquired by the Group are reported at cost less accumulated amortisation and impairment losses.

Principles for amortisation
Amortisation of Intangible non-current assets other than goodwill is reported on a straight-line basis in the income statement over the estimated useful life of the asset, provided the useful life is not indefinite.

Important estimations and assessments
Intangible assets are tested for impairment in accordance with the accounting policies described in Note 11 to the consolidated accounts, Impairment losses and reversed impairment losses. The recoverable amount for cash-generating units is determined by calculating the value in use or fair value less costs to sell. For these calculations, certain estimations must be made regarding future cash flows along with other adequate assumptions regarding the required rate of return, for example.

Financial information

	2017					
	Development projects in progress	Development costs	Goodwill	Concessions and similar rights with finite useful lives	Renting rights and similar rights with finite useful lives	Total
Cost						
Cost brought forward	18	2,008	41,908	15,832	896	**60,662**
Acquired companies	1	33	232	1,470	–	**1,736**
Investments	9	110	–	368	1	**488**
Transfer from development projects in progress	–	-4	–	–	–	**-4**
Divestments/disposals	–	-19	–	-70	-69	**-158**
Reclassifications	–	–	-33	33	–	**–**
Divested companies	–	–	–	-1	–	**-1**
Translation differences	–	38	1,249	441	3	**1,731**
Accumulated cost carried forward	**28**	**2,166**	**43,356**	**18,073**	**831**	64,454
Amortisation according to plan						
Amortisation brought forward	–	-1,639	–	-10,222	-250	**-12,111**
Amortisation for the year	–	-44	–	-1,176	-6	**-1,226**
Divestments/disposals	–	19	–	78	69	**166**
Reclassifications	–	–	–	3	–	**3**
Divested companies	–	–	–	1	–	**1**
Translation differences	–	-37	–	-307	-2	**-346**
Accumulated amortisation according to plan carried forward	**–**	**-1,701**	**–**	**-11,623**	**-189**	-13,513
Impairment losses						
Impairment losses brought forward	–	-212	-29,027	-1,937	-583	**-31,759**
Impairment losses for the year	–	–	-148	-1	–	**-149**
Reclassifications	–	–	–	-2	–	**-2**
Translation differences	–	–	-857	-34	–	**-891**
Accumulated impairment losses carried forward	**–**	**-212**	**-30,032**	**-1,974**	**-583**	-32,801
Residual value according to plan carried forward	**28**	**253**	**13,324**	**4,476**	**59**	18,140

	2016					
	Development projects in progress	Development costs	Goodwill	Concessions and similar rights with finite useful lives	Renting rights, mining rights and similar rights with finite useful lives	Total
Cost						
Cost brought forward	–	1,888	40,700	15,977	3,966	**62,531**
Acquired companies	–	–	89	19	–	**108**
Investments	18	84	–	376	1	**479**
Advance payments capitalised	–	–	–	7	–	**7**
Divestments/disposals	–	–	-251	-398	-4	**-653**
Reclassifications	–	–	–	10	1	**11**
Divested companies	–	-9	-94	-553	-3,159	**-3,815**
Translation differences	–	45	1,464	394	91	**1,994**
Accumulated cost carried forward	**18**	**2,008**	**41,908**	**15,832**	**896**	**60,662**
Amortisation according to plan						
Amortisation brought forward	–	-1,574	–	-9,549	-2,517	**-13,640**
Amortisation for the year	–	-27	–	-1,091	-12	**-1,130**
Divestments/disposals	–	–	–	282	–	**282**
Divested companies	–	9	–	477	2,346	**2,832**
Translation differences	–	-47	–	-341	-67	**-455**
Accumulated amortisation according to plan carried forward	**–**	**-1,639**	**–**	**-10,222**	**-250**	**-12,111**
Impairment losses						
Impairment losses brought forward	–	-193	-27,735	-2,028	-1,374	**-31,330**
Impairment losses for the year	–	-19	-678	-63	–	**-760**
Divestments/disposals	–	–	249	108	–	**357**
Divested companies	–	–	94	9	812	**915**
Translation differences	–	–	-957	37	-21	**-941**
Accumulated impairment losses carried forward	**–**	**-212**	**-29,027**	**-1,937**	**-583**	**-31,759**
Residual value according to plan carried forward	**18**	**157**	**12,881**	**3,673**	**63**	**16,792**

Contractual commitments for acquisitions of non-current intangible assets amounted to SEK 0 million (372) as per 31 December 2017.

Estimated useful life	
Development costs	3–4 years
Concessions and similar rights	3–30 years
Renting rights, mining rights (divested during 2016) and similar rights	3–50 years

Estimated useful lives are unchanged compared with the preceding year.

Note 19 Property, plant and equipment

Accounting policy
Property, plant and equipment are reported as assets on the balance sheet if it is likely that there will be future financial benefit for the company and the cost of the asset can be calculated in a reliable manner. Cost includes the purchase price and costs directly attributable to putting the asset in place and in a suitable condition for use in accordance with the management's intention of the acquisition. Examples of directly attributable expenses included in cost are delivery and handling, installation, land registration and consulting services. Borrowing costs directly attributable to investment projects in property, plant and equipment, which take a substantial period of time to complete, are included in the cost of the asset during the construction period.

In the nuclear power operations in Germany (impaired during 2011) and Sweden, cost at the time of acquisition includes a calculated present value for estimated costs for dismantling and removing the plant and restoring the site where the plant is located. The equivalent estimated cost calculated on the basis of the present value is reported initially as a provision. See also Note 35 to the consolidated accounts, Other interest-bearing provisions

Subsequent costs
Subsequent costs for property, plant and equipment are only added to the acquisition cost if it is likely that there will be future financial benefits associated with the asset for the company and the cost can be calculated in a reliable manner. All other subsequent costs are reported as expenses in the period when they arise. What is decisive for the assessment when a subsequent cost is added to the acquisition cost is whether the cost concerns the replacement of identified components, or parts of them, whereby such costs are capitalised. Also in cases where new components are created, the cost is added to the cost of the asset. Any undepreciated reported values of replaced components, or parts of components, are retired and carried as an expense in connection with the replacement. Repairs and maintenance are expensed as incurred.

Depreciation principles
Depreciation is reported on a straight-line basis in the income statement over the estimated useful life of the asset except for depreciation related to the German nuclear power plants (impaired during 2011). The Group applies component depreciation, which means that the components' estimated useful life provides the basis for the straight-line depreciation. Estimated useful life is described below in this note. Assessments of the residual value and useful life of an asset are conducted annually. Land and water rights are not subject to depreciation.

Important estimations and assessments
Property, plant and equipment are tested for impairment in accordance with the accounting policies described in Note 11 to the consolidated accounts, Impairment losses and reversed impairment losses. The recoverable amount for cash-generating units is determined by calculating the value in use or fair value less costs to sell. For these calculations, certain estimations must be made regarding future cash flows along with other adequate assumptions regarding the required rate of return, for example.

Financial information

	2017				
	Land and buildings[1]	Plant and machinery and other technical installations	Equipment, tools, fixtures and fittings	Construction in progress[2]	Total
Cost					
Cost brought forward[3]	54,988	428,025	12,084	26,072	**521,169**
Acquired companies	–	–	5	207	**212**
Investments[4]	74	908	463	17,018	**18,463**
Reversed investments	–	–	–	-53	**-53**
Advance payments capitalised	–	–	–	621	**621**
Capitalised/reversed future expenses for decommissioning, restoration	16	4,563	–	–	**4,579**
Transfer from construction in progress	871	16,590	120	-17,577	**4**
Divestments/disposals	-311	-2,607	-482	-154	**-3,554**
Other reclassifications	-26	8	7	6	**-5**
Divested companies	-235	-1,245	-10	-11	**-1,501**
Translation differences	789	6,985	286	338	**8,398**
Accumulated cost carried forward	**56,166**	**453,227**	**12,473**	**26,467**	**548,333**
Depreciation according to plan					
Depreciation brought forward	-24,753	-201,175	-8,592	–	**-234,520**
Acquired companies	–	–	-1	–	**-1**
Depreciation for the year	-920	-12,628	-605	–	**-14,153**
Divestments/disposals	239	2,172	429	–	**2,840**
Other reclassifications	-14	-45	-7	–	**-66**
Divested companies	74	424	8	–	**506**
Translation differences	-476	-3,426	-209	–	**-4,111**
Accumulated depreciation according to plan carried forward	**-25,850**	**-214,678**	**-8,977**	**–**	**-249,505**
Impairment losses					
Impairment losses brought forward	-3,704	-64,087	-399	-2,000	**-70,190**
Impairment losses for the year	–	-18	–	-245	**-263**
Reversed impairment losses for the year	–	4	–	–	**4**
Transfer from construction in progress	–	-249	–	249	**–**
Divestments/disposals	6	31	1	2	**40**
Other reclassifications	–	64	7	–	**71**
Translation differences	-90	-1,475	-11	-8	**-1,584**
Accumulated impairment losses carried forward	**-3,788**	**-65,730**	**-402**	**-2,002**	**-71,922**
Residual value according to plan carried forward	**26,528**	**172,819**	**3,094**	**24,465**	**226,906**
Advance payments to suppliers					**188**
Total					**227,094**

	2016				
	Land and buildings[1]	Plant and machinery and other technical installations	Equipment, tools, fixtures and fittings	Construction in progress[2]	Total
Cost					
Cost brought forward[3]	73,143	520,662	15,072	32,964	**641,841**
Acquired companies	–	–	–	93	**93**
Investments[4]	79	1,691	506	20,499	**22,775**
Reversed investments	–	–	–	-2	**-2**
Advance payments capitalised	–	37	–	1,137	**1,174**
Capitalised/reversed future expenses for decommissioning, restoration	34	4,002	–	-72	**3,964**
Transfer from construction in progress	2,322	25,691	173	-28,186	**–**
Divestments/disposals	-1,993	-9,341	-532	-1,233	**-13,099**
Other reclassifications	-178	-3,269	-31	2,960	**-518**
Assets held for sale	-173	-1,133	-7	-1	**-1,314**
Divested companies	-19,797	-119,588	-3,547	-2,181	**-145,113**
Translation differences	1,551	9,273	450	94	**11,368**
Accumulated cost carried forward	**54,988**	**428,025**	**12,084**	**26,072**	521,169
Depreciation according to plan					
Depreciation brought forward	-33,045	-275,424	-10,968	–	**-319,437**
Depreciation for the year	-1,126	-13,836	-423	–	**-15,385**
Divestments/disposals	770	7,080	474	–	**8,324**
Other reclassifications	33	420	4	–	**457**
Assets held for sale	80	582	6	–	**668**
Divested companies	9,387	85,642	2,642	–	**97,671**
Translation differences	-852	-5,639	-327	–	**-6,818**
Accumulated depreciation according to plan carried forward	**-24,753**	**-201,175**	**-8,592**	**–**	-234,520
Impairment losses					
Impairment losses brought forward	-5,982	-68,097	-741	-4,545	**-79,365**
Impairment losses for the year	-3,506	-28,059	–	-383	**-31,948**
Reversed impairment losses for the year	–	992	–	–	**992**
Transfer from construction in progress	–	-5,017	–	5,017	**–**
Divestments/disposals	114	2,194	6	982	**3,296**
Other reclassifications	-3	2,981	32	-3,218	**-208**
Divested companies	5,856	33,011	328	90	**39,285**
Translation differences	-183	-2,092	-24	57	**-2,242**
Accumulated impairment losses carried forward	**-3,704**	**-64,087**	**-399**	**-2,000**	-70,190
Residual value according to plan carried forward	**26,531**	**162,763**	**3,093**	**24,072**	216,459
Advance payments to suppliers					**677**
Total					217,136

[1] Cost for land and buildings includes cost of land and water rights amounting to SEK 12,599 million (12,476), which are not subject to depreciation.

[2] Borrowing costs during the construction period have been reported as an asset in the amount of SEK 253 million (374) for the year. The average interest rate for 2017 was 2.37% for borrowings in SEK, 4.79% for borrowings in EUR and 4.84% for borrowings in GBP.

[3] Government grants received, balance brought forward, amount to SEK 7,121 million (6,884).

[4] Government grants received during the year amounted to SEK 195 million (219).

At 31 December 2017, contractual commitments for the acquisition of property, plant and equipment amounted to SEK 13,168 million (12,110).

Estimated useful life	
Hydro power installations	5-50 years
Nuclear power installations	3-60 years
Combined heat and power installations	5-50 years
Wind power installations	10-25 years
Solar power installations	5-15 years
Distribution assets	10-35 years
Mining operations (divested during 2016)	4-25 years
Office and warehouse buildings and workshops	15-100 years
Office equipment	3-10 years

Estimated useful lives are unchanged compared to the preceding year.

Note 20 Shares and participations owned by the Parent Company Vattenfall AB and other Group companies

Shares and participations owned by Parent Company Vattenfall AB

	Corporate Identity Number	Registered office	Number of shares 2017	Participation in % 2017	Carrying amount Parent Company 2017	Carrying amount Parent Company 2016
Sweden						
Borås Elhandel AB	556613-7765	Borås	1,000	100	100	100
Chlorout AB	556840-9253	Stockholm	500	100	–	–
Forsaströms Kraft AB	556010-0819	Åtvidaberg	400,000	100	48	48
Forsmarks Kraftgrupp AB	556174-8525	Östhammar	198,000	66	198	198
Försäkrings AB Vattenfall Insurance	516401-8391	Stockholm	200,000	100	200	200
Gotlands Energi AB	556008-2157	Gotland	112,500	75	13	13
Produktionsbalans PBA AB	556425-8134	Stockholm	4,800	100	5	5
Ringhals AB	556558-7036	Varberg	248,572	70	379	379
Svensk Kärnbränslehantering AB	556175-2014	Stockholm	360	36[1]	–	–
Vattenfall Biomass Liberia AB	556809-8809	Stockholm	5,000	100	–	–
Vattenfall Business Services Nordic AB	556439-0614	Stockholm	100	100	130	130
Vattenfall Elanläggningar AB	556257-5661	Solna	1,000	100	1	1
Vattenfall Eldistribution AB	556417-0800	Solna	8,000	100	38,000	38,000
Vattenfall France Holding AB	556815-4214	Stockholm	30,500	100	11	11
Vattenfall Kundservice AB	556529-7065	Stockholm	100,000	100	30	30
Vattenfall Nuclear Fuel AB	556440-2609	Stockholm	100	100	96	96
Vattenfall PHEV Holding AB	556785-9383	Stockholm	1,000	100	–	–
Vattenfall Power Consultant AB	556383-5619	Stockholm	12,500	100	15	15
Vattenfall Power Management AB	556573-5940	Stockholm	6,570	100	12	12
Vattenfall Procurement International AB	556923-6671	Solna	500	100	–	–
Vattenfall Research & Development AB	556390-5891	Älvkarleby	14,000	100	17	17
Vattenfall Services Nordic AB	556417-0859	Stockholm	26,000	100	19	19
Vattenfall Vattenkraft AB	556810-1520	Stockholm	1,200	100	1	1
Vattenfall Vindkraft AB	556731-0866	Stockholm	1,000	100	14,000	10,000
Västerbergslagens Energi AB	556565-6856	Ludvika	14,674	51	15	15
Denmark						
Vattenfall A/S	213 11 332	Copenhagen	10,040,000	100	515	515
Vattenfall Energy Trading A/S	310 811 81	Copenhagen	500	100	49	49
Vindstød A/S	34045143	Århus	1,333,333	70[2]	37	37
Finland						
Vattenfall Sähkömyynti Oy	1842073-2	Helsinki	85	100	5	5
Germany						
Vattenfall GmbH	(HRB) 124048	Berlin	500,000,000	100	51,366	51,366
Poland						
Vattenfall IT Services Poland Sp.z.o.o	0000402391	Gliwice	58,000	100	12	12
Vattenfall Energy Trading Sp.z.o.o (Liquidated)	0000233066	Warsaw			–	9
Netherlands						
N.V. Nuon Energy	33292246	Amsterdam	136,794,964	100	44,138	44,138
Other countries						
Vattenfall UK Sales Limited	05461926	London	104,000,400	100	288	–
Vattenfall Reinsurance S.A., Luxembourg	(B) 49528	Luxembourg	13,000	100	150	150
Total					**149,850**	**145,571**

[1] The Group owns a further 30% via Forsmarks Kraftgrupp AB.

[2] The remaing 30 % of the shares will be paid in three tranches: 2019, 2020 and 2022.

Larger shareholdings owned by other Group companies than the Parent Company Vattenfall AB

When calculating the participation percentages, consideration is taken for the non-controlling interests in the respective companies.

	Registered office	Participation in % 2017
Sweden		
Vattenfall Indalsälven AB	Bispgården	74
Denmark		
Vattenfall Vindkraft A/S	Esbjerg	100
Vattenfall Vindkraft Nørrekær Enge A/S	Esbjerg	100
Germany		
DanTysk Offshore Wind GmbH & Co. KG	Hamburg	51
Fernheizwerk Neukölln AG	Berlin	81
Kernkraftwerk Brunsbüttel GmbH & Co. oHG	Hamburg	67
MVR Müllverwertung Rugenberger Damm GmbH & Co. KG	Hamburg	55
Nuon Epe Gasspeicher GmbH	Gronau	100
Sandbank Offshore Wind GmbH	Hamburg	51
Stromnetz Berlin GmbH	Berlin	100
Vattenfall Energy Trading GmbH	Hamburg	100
Vattenfall Europe Business Services GmbH	Hamburg	100
Vattenfall Europe Information Services GmbH	Hamburg	100
Vattenfall Europe Kundenservice GmbH	Hamburg	100
Vattenfall Europe New Energy GmbH	Hamburg	100
Vattenfall Europe New Energy Ecopower GmbH	Rostock	100
Vattenfall Europe Nuclear Energy GmbH	Hamburg	100
Vattenfall Europe Sales GmbH	Hamburg	100
Vattenfall Europe Windkraft GmbH	Hamburg	100
Vattenfall Wärme Berlin AG	Berlin	100
Vattenfall Heizkraftwerk Moorburg GmbH	Hamburg	100
Vattenfall Wasserkraft GmbH	Berlin	100
Vattenfall Wärme Hamburg GmbH	Hamburg	75

	Registered office	Participation in % 2017
Netherlands		
Feenstra N.V.	Amsterdam	100
Feenstra Verwarming B.V.	Lelystad	100
N.V. Nuon Duurzame Energie	Arnhem	100
N.V. Nuon Energy Sourcing	Amsterdam	100
N.V. Nuon Klantenservice	Arnhem	100
N.V. Nuon Sales	Amsterdam	100
N.V. Nuon Sales Nederland	Amsterdam	100
N.V. Nuon Warmte	Amsterdam	100
Nuon Epe Gas Service B.V.	Amsterdam	100
Nuon Power Generation B.V.	Utrecht	100
Nuon Power Projects I B.V.	Amsterdam	100
Nuon Renewables NSW I B.V.	Amsterdam	100
Nuon Storage B.V.	Amsterdam	100
Windcollectief Wieringermeer B.V.	Kroon	100
Vattenfall Energy Trading Netherlands N.V.	Amsterdam	100
Zuidlob Wind B.V.	Amsterdam	100
UK		
Kentish Flats Ltd	London	100
Nuon UK Ltd	Cornwall	100
Pen Y Cymoedd Wind Farm Ltd.	Cornwall	100
Thanet Offshore Wind Ltd	London	100
Vattenfall Wind Power Ltd	London	100
Ormonde Energy Ltd	London	51
Aberdeen Offshore Wind Farm Ltd	Aberdeen	100
I Supply Energy Ltd	Poole	100

Subsidiaries with material non-controlling ownership interests

Forsmarks Kraftgrupp

Forsmarks Kraftgrupp conducts nuclear power operations from three nuclear reactors in Östhammar municipality, Uppsala County. Forsmarks Kraftgrupp is owned by Vattenfall AB (66.0%) together with Mellansvensk Kraftgrupp AB (25.5%), with Fortum as the largest owner, and Sydkraft Nuclear Power AB (8.5%). The part-owners have a consortium agreement that regulates how the operations of Forsmarks Kraftgrupp are conducted and how decision-making is done. Forsmarks Kraftgrupp is reported as a Group company in the Vattenfall Group since Vattenfall has control over Forsmarks Kraftgrupp according to IFRS 10 – "Consolidated Financial Statements".

Sales of the electric power that is generated are made on a pro rata basis to the part owners at cost, pursuant to the consortium agreement. In addition, the consortium agreement entails that the part owners are responsible for the company's funding on a pro rata basis, and that the company's operations shall in principle not generate any profit. Generation in 2017 amounted to 24.5 TWh (24.0), and the average availability for Forsmark was 88.0% (84.0%).

Ringhals

Ringhals conducts nuclear power operations from four nuclear reactors on the Swedish west coast in Varberg municipality. Ringhals is owned by Vattenfall AB (70.4%) and Sydkraft Nuclear Power AB (29.6%). The part-owners have a consortium agreement that regulates how the operations of Ringhals are conducted and how decision-making is done. Ringhals is reported as a Group company in the Vattenfall Group since Vattenfall has control over Ringhals according to IFRS 10 – "Consolidated Financial Statements".

Sales of the electric power that is generated are made on a pro rata basis to the part owners at cost, pursuant to the consortium agreement. In addition, the consortium agreement entails that the part owners are responsible for the company's funding on a pro rata basis, and that the company's operations shall in principle not generate any profit. Generation in 2017 amounted to 27.4 TWh (22.9), and the average availability for Ringhals was 82.2% (68.2%).

Vattenfall Wärme Hamburg

Vattenfall owns 74.9% of the shares in Vattenfall Wärme Hamburg, based in Hamburg, Germany. The other part-owner, the City of Hamburg, has a veto right in decisions that require a 75.0% majority. The veto right does not limit Vattenfall's control over the company's continuing operations according to IFRS 10 – "Consolidated Financial Statements".

Since there is a profit-and-loss transfer agreement in place between the company and Vattenfall GmbH, the City of Hamburg does not have a profit participation in the annual result, but receives an annual guaranteed fixed dividend. If Vattenfall GmbH decides to terminate the profit-and-loss transfer agreement, the City of Hamburg has the right to sell its shares back to Vattenfall. In addition, the City of Hamburg has a right to purchase Vattenfall's 74.9% shareholding with effect in 2019.

Following is condensed financial information for Forsmarks Kraftgrupp, Ringhals, and Vattenfall Wärme Hamburg:

	2017			2016		
	Forsmarks Kraftgrupp	**Ringhals**	**Vattenfall Wärme Hamburg**	**Forsmarks Kraftgrupp**	**Ringhals**	**Vattenfall Wärme Hamburg**
Income statements in summary						
Net sales	6,535	7,476	3,408	7,258	8,249	2,987
Profit for the year	606	237	96	606	213	-266
– of which allocated to non-controlling interests	103	24	–	206	62	–
Balance sheets in summary						
Non-current assets	53,324	39,875	4,614	49,595[1]	36,561[1]	4,699
Current assets	4,867	3,458	2,833	5,073	4,292	2,319
Total assets	**58,191**	**43,333**	**7,447**	**54,668**[1]	**40,853**[1]	**7,018**
Equity	10,497	-863	2,563	10,078[1]	-768[1]	2,492
Liabilities	47,694	44,196	4,884	44,590	41,621	4,526
Total equity and liabilities	**58,191**	**43,333**	**7,447**	**54,668**[1]	**40,853**[1]	**7,018**
Statement of cash flows in summary						
Cash flow from operating activities	749	1,969	368	921[1]	2,161[1]	212
Cash flow from investing activities	-1,198	-663	-211	-1,275	-956	-266
Cash flow from financing activities	521	-1,458	155	325[1]	-1,212[1]	-797
Cash flow for the year	72	-152	312	-29	-7	-851

[1] The value has been adjusted compared with information previously published in Vattenfall's 2016 Annual and Sustainability Report.

Note 21 Participations in associated companies and joint arrangements

Shares and participations owned by the Parent Company Vattenfall AB or by other Group companies

	Corporate Identity Number	Registered office	Participation in % 2017	Carrying amount Group 2017	Carrying amount Group 2016	Carrying amount Parent Company 2017	Carrying amount Parent Company 2016
Associated companies and joint ventures owned by the Parent Company Vattenfall AB							
Sweden							
BrainHeart Energy Sweden Holding AB	556813-3846	Stockholm	35	41	–	41	–
Norway							
NorthConnect KS	996625001	Kristiansand	33	14	11	14	11
NorthConnect AS	995878550	Kristiansand	30	2	4	–	2
Associated companies and joint ventures owned by other Group companies than the Parent Company Vattenfall AB							
Sweden							
Taggen Vindpark Elnät AB	556701-3981	Gothenburg	50	–	24	–	–
V² Plug-In Hybrid Vehicle Partnership HB	969741-9175	Gothenburg	50	499	487	–	–
UK							
East Anglia Offshore Wind Ltd	06990367	Hexham	50	45	53	–	–
Germany							
Solytic GmbH	HRB 190395 B	Berlin	36	29	–	–	–
DOTI Deutsche Offshore-Testfeld- und Infrastruktur-GmbH & Co. KG	HRA 200395	Oldenburg	26	155	211	–	–
GASAG Berliner Gaswerke AG	HRB 44343	Berlin	32	3,719	3,514	–	–
Kernkraftwerk Brokdorf GmbH & Co. oHG	HRA 99143	Hamburg	20	–	–	–	–
Kernkraftwerk Stade GmbH & Co. oHG	HRA 99146	Hamburg	33	–	–	–	–
Netherlands							
B.V. Nederlands Elektriciteit Administratiekantoor	09018339	Arnhem	23	76	73	–	–
C.V. Groettocht	37085868	Amsterdam	50	2	6	–	–
C.V. Oudelandertocht	37085867	Amsterdam	50	3	10	–	–
C.V. Waardtocht	37085866	Amsterdam	50	1	6	–	–
C.V. Waterkaaptocht	37085865	Amsterdam	50	2	9	–	–
C.V. Windpoort	34122462	Heemskerk	40	4	5	–	–
NoordzeeWind C.V.	34195602	Ijmuiden	50	196	249	–	–
V.O.F. Windpark Oom Kees	09210903	Amsterdam	13	2	1	–	–
Westpoort Warmte B.V.	34121626	Amsterdam	50	69	54	–	–
Windpark Hoofdplaatpolder B.V.	22053732	Sluis	70	102	117	–	–
V.O.F. Noordpier Wind	51173441	Heemskerk	50	4	5	–	–
Vliegasunie B.V.	30123419	De Bilt	20	20	–	–	–
Total				**4,985**	**4,839**	**55**	**13**

Financial information pertaining to associated companies of material significance for Vattenfall

	GASAG Berliner Gaswerke AG[1]		V2 Plug-In Hybrid Vehicle Partnership HB[1]	
	2017	**2016**	**2017**	**2016**
Net sales	10,653	11,032	781	705
Profit or loss after tax	255	452	594	501
Other comprehensive income	129	442	–	–
Total comprehensive income	384	894	594	501
Non-current assets	17,463	17,052	205	278
Current assets	2,383	2,733	475	254
Non-current liabilities	9,063	9,584	–	–
Current liabilities	2,992	2,966	30	20
Paid dividend	24	107	–	–
Contingent liabilities	128	472[2]	–	–

[1] The figures in the table pertain to 100% of the values in the respective companies.

[2] The value has been adjusted compared with information previously presented in Vattenfall's 2016 Annual and Sustainability Report.

GASAG Berliner Gaswerke AG is an energy service provider based in Berlin, Germany. The business activities of the GASAG Group involve the transportation, distribution and sale of natural gas, heat, electricity and water, the operation of storage facilities and other gas-related activities. Vattenfall owns 31.58% of the shares in GASAG.

V2 Plug-In Hybrid Vehicle Partnership HB is a joint venture arrangement with Volvo Cars in Gothenburg, Sweden. The company was formed to develop and license PHEV systems for electrification of drive lines for integration in vehicles and therewith compatible activities. Vattenfall owns 50% of the shares in the company.

Information pertaining to joint arrangements of material significance for Vattenfall

Vattenfall owns 50% of the shares in the German nuclear power company Kernkraftwerk Krümmel GmbH & Co. oHG, which is classified as a joint operation. With this method of accounting Vattenfall recognises its share of Kernkraftwerk Krümmel GmbH & Co. oHG's assets and liabilities as well revenues and expenses. For more information about accounting treatment of joint operations, see Note 3 to the consolidated accounts, Accounting policies.

Note 22 Share in the Swedish Nuclear Waste Fund

	2017	**2016**
Balance brought forward	36,199	34,172
Payments	1,903	2,021
Disbursements	-649	-860
Returns	1,138	866
Balance carried forward	**38,591**	**36,199**

According to the Swedish Nuclear Activities Act (1984:3), any organisation in Sweden with a permit to own or run a nuclear installation is obliged to dismantle the plant in a safe manner, to manage spent fuel and other radioactive waste and to conduct necessary research and development. The permit holder shall also finance this dismantling. The financing of future fees for spent nuclear fuel is currently ensured by Swedish law. The reactor owner is required to pay a generation-based fee to the board of the Swedish Nuclear Waste Fund, which manages paid-in funds. The fund reimburses the owner of the reactor for expenses as the owner's obligations pursuant to the Swedish law are fulfilled. According to agreements between the Swedish state, Vattenfall AB and E.ON Sverige AB, fund assets for Ringhals AB shall be managed by Vattenfall AB. On 31 December 2017, the fair value of the Vattenfall Group's share in the Swedish Nuclear Waste Fund was SEK 40,736 million (38,866).

As stated in Note 35 to the consolidated accounts, Other interest-bearing provisions, provisions for future expenses for decommissioning within Swedish nuclear power operations amount to SEK 53,830 million (47,719). Contingent liabilities attributable to the Swedish Nuclear Waste Fund are described in Note 44 to the consolidated accounts, Contingent liabilities.

Note 23 Derivative assets and derivative liabilities

Derivative assets

	Non-current portion, maturity 1–5 years		Non-current portion, maturity >5 years		Total non-current portion		Current portion		Total	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Financial contracts	1,549	1,960	3,817	4,762	**5,366**	**6,722**	673	1,044	**6,039**	**7,766**
Commodity and commodity-related contracts	7,241	7,260	194	54	**7,435**	**7,314**	10,356	9,612	**17,791**	**16,926**
Total	**8,790**	**9,220**	**4,011**	**4,816**	**12,801**	**14,036**	**11,029**	**10,656**	**23,830**	**24,692**

Derivative liabilities

	Non-current portion, maturity 1–5 years		Non-current portion, maturity >5 years		Total non-current portion		Current portion		Total	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Financial contracts	1,199	1,776	3,460	3,359	**4,659**	**5,135**	815	1,247	**5,474**	**6,382**
Commodity and commodity-related contracts	7,479	6,577	660	752	**8,139**	**7,329**	12,385	10,305	**20,524**	**17,634**
Total	**8,678**	**8,353**	**4,120**	**4,111**	**12,798**	**12,464**	**13,200**	**11,552**	**25,998**	**24,016**

Note 24 Other non-current receivables

	Receivables from associated companies		Other receivables		Total	
	2017	2016	2017	2016	2017	2016
Balance brought forward	3	27	3,785	9,457	**3,788**	**9,484**
New receivables	5	–	-178	-71	**-173**	**-71**
Payments received	–	-24	-10	-12	**-10**	**-36**
Divested companies	–	–	–	-53	**–**	**-53**
Reclassifications	–	–	332	-5,592	**332**	**-5,592**
Translation differences	–	–	26	56	**26**	**56**
Balance carried forward	**8**	**3**	**3,956**	**3,785**	**3,964**	**3,788**
Breakdown of non-current receivables						
Non-current interest-bearing receivables	8	3	1,619	1,126	**1,627**	**1,129**
Non-current noninterest-bearing receivables	–	–	2,337	2,659	**2,337**	**2,659**
Total	**8**	**3**	**3,956**	**3,785**	**3,964**	**3,788**

Note 25 Inventories

Accounting policy

Inventories (except for inventories held for trading) are valued at the lower of their cost and net realisable value. Net realisable value is the estimated sales price in operating activities, less estimated costs for completion and to bring about a sale. The consumption of nuclear fuel is calculated as a depletion of the energy content of the fuel rods, and is based on the cost of each batch of fuel loaded into the core. The cost of inventories is calculated, depending on the type of inventory, either through application of the first-in, first-out (FIFO) method or through the application of a method based on average prices. Both methods include costs that arose on acquisition of the inventory assets.

Inventories held for trading are valued at fair value less costs to sell. For CO_2 emission allowances that are held for trading, fair value is based on quoted prices (Level 1). For other commodities fair value measurement is derived from an observable market price (API#2 for coal), which means a categorisation into Level 2 of the fair value hierarchy. See Note 3 to the consolidated accounts, Accounting policies.

The value of the energy stored in the form of water in reservoirs is not reported as an asset.

Financial information

	2017	2016
Inventories held for own use		
Nuclear fuel	6,853	6,939
Materials and spare parts	2,794	2,708
Fossil fuel	1,377	1,233
Other	460	348
Total	**11,484**	**11,228**
Inventories held for trading		
Fossil fuel	1,131	2,599
CO_2 emission allowances/certificates	2,997	694
Biomass	58	45
Total	**4,186**	**3,338**
Total inventories	**15,670**	**14,566**

Inventories recognised as an expense in 2017 amount to SEK 23,497 million (50,816). Impairment losses for inventory for own use amounted to SEK 68 million (3) during the year. Reversed impairment amounted to SEK 15 million (11).

Note 26 Intangible assets: current

Accounting policy

CO_2-emission allowances held for own use

Purchased emission allowances held for own use are reported as intangible assets under current assets at cost less accumulated impairment losses. As carbon dioxide is emitted, an obligation arises to deliver emission allowances (EUAs, CERs, ERUs) to the authorities in the respective countries. This obligation is reported as an expense and a liability. This liability is valued in the amount at which it is expected to be settled.

Certificates held for own use

Accumulated certificates, which are received free of charge, are reported as intangible assets under current assets at fair value when obtained. The corresponding amount is recognised as revenue under Net sales. Purchased certificates held for own use are reported at cost less accumulated impairment losses. When electricity is sold, an obligation arises to deliver certificates to the authorities in the respective countries. This obligation is reported as an expense and as a liability. The liability is valued at the amount at which it is expected to be settled.

Financial information

	CO_2 emission allowances		Certificates		Total	
	2017	**2016**	**2017**	**2016**	**2017**	**2016**
Balance brought forward	10	812	305	279	**315**	**1,091**
Purchases	3,240	11,596	70	380	**3,310**	**11,976**
Received free of charge	–	–	34	306	**34**	**306**
Sold	-481	-6,542	-107	-619	**-588**	**-7,161**
Redeemed	-1,223	-5,880	-8	-5	**-1,231**	**-5,885**
Disposals	–	–	-29	-37	**-29**	**-37**
Translation differences	33	24	1	1	**34**	**25**
Balance carried forward	**1,579**	**10**	**266**	**305**	**1,845**	**315**

Note 27 Trade receivables and other receivables

Accounting policy

Vattenfall classifies trade receivables as doubtful when – after a missed or significantly late payment and individual assessment of the debtor's financial conditions – a need to recognise impairment can be considered to exist. Impairment is determined on the basis of historical experience of customer losses for similar receivables. Impaired trade receivables are reported at the present value of anticipated future cash flows. When determining any need to recognise impairment, the existence of any credit insurance and other forms of security is also taken into account.

Financial information

	2017	**2016**
Accounts receivable - trade	17,805	17,242
Receivables from associated companies	148	7
Other receivables	5,143	8,759
Total	**23,096**	**26,008**

Age analysis

The collection period is normally between 10 and 30 days.

	2017			2016		
	Receivables, gross	**Impaired receivables**	**Receivables, net**	**Receivables, gross**	**Impaired receivables**	**Receivables, net**
Accounts receivable - trade						
Not due	16,218	5	**16,213**	15,218	33	**15,185**
Past due 1–30 days	750	9	**741**	1,059	13	**1,046**
Past due 31–90 days	276	14	**262**	465	15	**450**
Past due >90 days	1,446	857	**589**	1,537	976	**561**
Total	**18,690**	**885**	**17,805**	**18,279**	**1,037**	**17,242**
Receivables from associated companies						
Not due	148	–	**148**	7	–	**7**
Past due >90 days	2	2	**–**	2	2	**–**
Total	**150**	**2**	**148**	**9**	**2**	**7**
Other receivables						
Not due	5,123	–	**5,123**	7,729	–	**7,729**
Past due 1–30 days	1	–	**1**	721	–	**721**
Past due 31–90 days	1	–	**1**	3	–	**3**
Past due >90 days	35	17	**18**	399	93	**306**
Total	**5,160**	**17**	**5,143**	**8,852**	**93**	**8,759**

Note 28 Advance payments paid

	2017	2016
Margin calls paid, energy trading	2,054	893
Other advance payments	1,546	418
Total	**3,600**	**1,311**

A margin call paid is a marginal security (collateral) that Vattenfall pays its counterparty, that is, to the holder of a derivative position to cover the counterpart's credit risk, either bilaterally via OTC or through an exchange. In Vattenfall's business activities, margin calls occur in energy trading and in the financing activities.

Margin calls paid within energy trading are recognised on the balance sheet as advance payments paid and are thereby recognised in the statement of cash flows as cash flows from changes in operating assets. Margin calls paid within financing activities are recognised as short-term investments (Note 30 to the consolidated accounts, Short-term investments) and are thereby reported in the statement of cash flows as cash flows from financing activities.

Note 29 Prepaid expenses and accrued income

	2017	2016
Prepaid expenses and accrued income, electricity	4,467	3,562
Prepaid nuclear power-related tax	445	834
Prepaid insurance premiums	23	21
Prepaid expenses, other	906	868
Accrued income, other	1,169	1,178
Total	**7,010**	**6,463**

Note 30 Short-term investments

	2017	2016
Interest-bearing investments	15,343	20,756
Margin calls paid, financing activities	2,749	2,541
Total	**18,092**	**23,297**

Note 31 Cash and cash equivalents

	2017	2016
Cash and bank balances	6,125	9,236
Cash equivalents	2,680	10,759
Total	**8,805**	**19,995**

Note 32 Assets held for sale

Accounting policy

Non-current assets (or disposal groups) are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. To be classified as held for sale a number of criteria must be met, see the heading "Important estimations and assessments". Assets held for sale are valued at the lower of their carrying amount and fair value less costs to sell and are not subject to amortisation or depreciation. Assets (and liabilities) held for sale are classified as current assets (current liabilities) when the sale transaction is expected to be settled within twelve months after the balance sheet date.

Important estimations and assessments

Certain criteria must be fulfilled to classify an asset as held for sale. The asset must be available for immediate sale in its present condition subject to usual and customary terms. Further, the sale must be highly probable within one year from the date of classification. The last-mentioned criterion means that a plan for the disposal must have been prepared and approved at the appropriate level of management, an active programme for the disposal must have been initiated, and the asset must be marketed for sale at a price that is reasonable in relation to its current fair value. In the event shareholder approval is required before a sale can be carried out, Vattenfall is of the opinion that a transaction cannot be regarded as likely until shareholder approval has been obtained.

Financial information

As per 31 December 2017 there are no assets held for sale. Assets held for sale as per 31 December 2016 refers to waste-to-energy power plant assets in Germany.

	2017	2016
Property, plant and equipment	–	652
Trade receivables and other receivables	–	16
Other current assets	–	26
Total assets	**–**	**694**
Other interest-bearing provisions	–	146
Other non-current liabilities	–	42
Deferred tax liabilities	–	5
Trade payables and other liabilities	–	161
Total liabilities	**–**	**354**

Note 33 Interest-bearing liabilities and related financial derivatives

Interest-bearing liabilities include Hybrid Capital and other interest-bearing liabilities – mainly bond issues and liabilities pertaining to acquisitions of Group companies.

The hybrid bonds are reported as an interest-bearing liability and are subordinated to Vattenfall's other debt instruments. The credit rating agencies Moody's and Standard & Poor's classify 50% of the hybrid bonds as equity in their credit analyses. The two SEK bonds of SEK 3 billion and the EUR bond of EUR 1 billion have set terms of 62 years, and the USD bond of USD 400 million has a set term of 63 years. Vattenfall has an option at specifically defined points in time to redeem the bonds at a call date prior to maturity. These call dates arise for the first time in 2022 for the two SEK-denominated bonds, in 2023 for the USD-denominated bond, and in 2027 for the EUR-denominated bond.

Hybrid Capital is reported as follows:

	2017	2016
Balance brought forward	19,164	18,546
Effects from hedge accounting	5	6
Translation differences	-51	612
Balance carried forward	**19,118**	**19,164**

Reported values for Hybrid Capital and other interest-bearing liabilities are specified as follows:

	Non-current portion maturity 1–5 years		Non-current portion maturity >5 years		Total non-current portion		Current portion		Total	
	2017	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
Bond issues	21,319	26,031	18,839	23,499	**40,158**	**49,530**	5,358	–	**45,516**	**49,530**
Commercial paper	–	–	–	–	**–**	**–**	4,192	3,602	**4,192**	**3,602**
Liabilities to credit institutions	2,256	2,431	–	–	**2,256**	**2,431**	149	244	**2,405**	**2,675**
Liabilities pertaining to acquisitions of subsidiaries	161	51	–	–	**161**	**51**	–	–	**161**	**51**
Liabilities to owners of non-controlling interests	157	150	10,212	9,721	**10,369**	**9,871**	–	238	**10,369**	**10,109**
Liabilities to associated companies	–	–	–	–	**–**	**–**	462	2,798	**462**	**2,798**
Other liabilities	735	957	656	654	**1,391**	**1,611**	3,540[1]	7,127[1]	**4,931**	**8,738**
Total interest-bearing liabilities excl. Hybrid Capital	**24,628**	**29,620**	**29,707**	**33,874**	**54,335**	**63,494**	**13,701**	**14,009**	**68,036**	**77,503**
Hybrid Capital	–	–	19,118	19,164	**19,118**	**19,164**	–	–	**19,118**	**19,164**
Total interest-bearing liabilities	**24,628**	**29,620**	**48,825**	**53,038**	**73,453**	**82,658**	**13,701**	**14,009**	**87,154**	**96,667**
Derivatives (swaps) attributable to the above interest-bearing liabilities	-288	-214	-358	-1,404	**-646**	**-1,618**	150	-25	**-496**	**-1,643**

[1] Of which, margin calls within financing activities SEK 3,312 million (3,961).

Undiscounted future cash flows including interest payments on the interest-bearing liabilities mentioned above, future cash flow for derivatives, trade payables and financial instruments with contractual payments on 31 December, are shown in the table below. Floating interest cash flows with future interest fixing dates are estimated based on observable interest rate curves at year end. All future cash flows in foreign currency are translated to SEK using the rate on the balance sheet date for the annual accounts.

	Non-current portion maturity 1–5 years		Non-current portion maturity > 5 years		Total non-current portion		Current portion		Total	
	2017	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
Interest-bearing liabilities	39,396	40,690	52,567	66,827	**91,963**	**107,517**	16,987	17,498	**108,950**	**125,015**
Derivatives (swaps)	-752	-1,275	-1,931	-3,268	**-2,683**	**-4,543**	-178	-375	**-2,861**	**-4,918**
Trade payables and other financial liabilities	1,784	1,925	4,786	4,515	**6,570**	**6,440**	23,872	25,330	**30,442**	**31,770**
Total	**40,428**	**41,340**	**55,422**	**68,074**	**95,850**	**109,414**	**40,681**	**42,453**	**136,531**	**151,867**

The table below shows the largest benchmark bond issues by Vattenfall.

Type	Issued	Currency	Nominal amount	Coupon %	Maturity
Euro Medium Term Note	2003	EUR	499	5.000	2018
Euro Medium Term Note	2008	EUR	645	6.750	2019
Euro Medium Term Note	2009	GBP	273	6.125	2019
Euro Medium Term Note	2009	EUR	1,085	6.250	2021
Euro Medium Term Note	2004	EUR	500	5.375	2024
Euro Medium Term Note	2009	GBP	750	6.875	2039

In November 2017 Vattenfall bought back GBP 250 million of its GBP 1 billion bond maturing in 2039.

Note 34 Pension provisions

Accounting policy
Vattenfall's pension obligations in the Group's Swedish and German companies are to a large extent defined benefit pension obligations. The concerned pension plans are primarily retirement pensions, disability pensions and family pensions. There are also pension plans in these and other countries that are defined contribution plans.

Defined benefit pension plans
The Group's defined benefit pension obligations are calculated separately for each plan in accordance with the Projected Unit Credit Method by calculating employees' current and past service cost. Estimated future salary adjustments are taken into consideration as well as taxes levied on pension costs, for example, the Swedish special employers' payroll tax ("särskild löneskatt"). The net obligation comprises the discounted present value of the total earned future salaries less the fair value of any plan assets. The discount rate consists of the interest rate on the balance sheet date of high quality corporate bonds with lifetimes that corresponds to the Group's pension obligations. When there is no deep market in corporate bonds of this kind, the market rate yield on government bonds with an equivalent lifetime should be used instead.

Items related to the earnings of defined benefit pensions and interest on the net of defined benefit plans assets and liabilities are recognised in the income statement. When benefits in a plan are improved, the proportion of the increased benefit attributable to the employees' past service cost is reported as an expense in the income statement, as well as gains and losses arising on settlement of a pension liability.

Remeasurements recognised in Other comprehensive income under the heading "Items that will not be reclassified to profit or loss" consist of actuarial gains and losses. Actuarial gains and losses arise from the effects of changes in actuarial assumptions and from experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred). The difference between the actual and the calculated return on pension assets are also recognised in Other comprehensive income. When the calculation leads to an asset for the Group, the reported value of the asset is limited to the present value of future repayments from the plan or reduced future payments to the plan.

Defined contribution pension plans
Defined contribution pension plans are post-employment benefit plans according to which fixed fees are paid to a separate legal entity. There is no legal or constructive obligation to pay additional fees if the legal entity does not have sufficient assets to pay all benefits to the employees. Fees for defined contribution pension plans are reported as an expense in the income statement in the period they apply to.

Important estimations and assessments
The value of pension obligations for defined benefit pension plans is determined through actuarial computations that are based on assumptions about the discount rate, future salary increases, inflation and demographic conditions. Every change in these assumptions affects the calculated value of pension obligations.

For pension provisions in Sweden, the discount rate in 2017 was reduced to 2.5% from 2.75% in the preceding year. The discount rate is based on mortgage bonds with high credit ratings, the market for which is large and liquid. In Germany, where the discount rate is based on high quality corporate bonds, the discount rate in 2017 was unchanged at 1.75%.

Financial information
Swedish pension plans
The Swedish pension plans supplement the Swedish social insurance system and are the result of agreements between employer and employee organisations. Essentially all Vattenfall employees in Sweden are enrolled in the collectively bargained ITP-Vattenfall pension plan. For employees born in 1978 and earlier, the plan is mostly a defined benefit solution, while for employees born in 1979 and later, the plan is entirely a defined contribution solution.

In defined benefit pension solutions, the employee is guaranteed a lifetime pension that corresponds to a set percentage of the employee's final salary. Defined benefit pensions are secured through provisions on the balance sheet, and the obligation is covered by credit insurance with PRI Pensionsgaranti. In addition, certain pensions attributable the time prior to Vattenfall's incorporation are covered by a government guarantee via the Swedish National Debt Office. Defined contribution pensions are secured through insurance with any of the insurance companies that are electable within the framework of the ITP plan.

Certain of Vattenfall's obligations in the ITP plan such as spousal benefits and disability pensions are secured through an insurance policy from Alecta. According to a statement (UFR 10) issued by the Swedish Financial Reporting Board, this plan is a multi-employer defined benefit plan. As in previous years, Vattenfall has not had access to such information to make it possible to report this plan as a defined benefit plan. The pension plan according to ITP secured by insurance in Alecta is therefore reported as a defined contribution plan. This year's share of the total savings premium in Alecta is 0.27601%, while Vattenfall's share of the total number of actively insured in Alecta is 1.3539%. Alecta's surplus can be distributed among the policyholders and/or the insureds. At the end of 2017, Alecta's surplus in the form of its so-called collective funding amounted to 154% (149%). Collective funding consists of the fair value of Alecta's assets as a percentage of the insurance obligations calculated in accordance with Alecta's actuarial calculation assumptions.

German pension plans
The pension plans in Germany are based on collective agreements in line with market terms and conditions. Substantial defined benefit plans exist for employees in Berlin and Hamburg.

Berlin
Two pension plans exist, both secured through Pensionskasse der Bewag, a mutual insurance company. Obligations are secured through funds paid in by Vattenfall and its employees. One plan has been classified as a defined contribution plan and is reported as such since the benefit is based on paid-in premiums and Pensionskasse der Bewag's financial position. For employees who began their employment before 1 January 1984, there is a supplementary agreement providing employees working until retirement age with a pension equal to up to 80% of the salary on which the pension is based. Half of the statutory pension and the entire benefit from Pensionskasse der Bewag, including surpluses, are credited to the guaranteed amount. Vattenfall's obligations encompass the entire pension obligation. The plan assets attributable to personnel hired before 1 January 1984 are reported as plan assets at fair value. Pensionskasse der Bewag's operations are supervised by a regulatory authority. The assets of Pensionskasse are investment funds that are not listed on the stock exchange. The fair value is determined by the repurchase price.

Hamburg
Vattenfall has pension obligations for employees in Hamburg that mainly consist of the company's obligations to personnel employed before 1 April 1991 and who have been employed for at least 10 years. The sum of the retirement pension, statutory pension and pensions from third parties normally amounts to a maximum of 65% of pensionable salary.

Dutch pension plans
In the Netherlands Vattenfall has the majority of the pension obligations secured through the ABP pension fund and the "Metaal en Techniek" pension fund. The ABP and "Metaal en Techniek" plans are classified and reported as defined contribution plans.

Defined benefit pension plans

	2017				
		Germany			
	Sweden	Plan Berlin	Plan Hamburg	Other countries	Total
Present value of unfunded obligations	11,624	455	22,607	–	**34,686**
Present value of fully or partly funded obligations	–	16,052	172	–	**16,224**
Present value of obligations	**11,624**	**16,507**	**22,779**	**–**	**50,910**
Fair value of plan assets	–	8,824	124	–	**8,948**
Net defined benefit liability	**11,624**	**7,683**	**22,655**	**–**	**41,962**

	2016				
		Germany			
	Sweden	Plan Berlin	Plan Hamburg	Other countries	Total
Present value of unfunded obligations	11,085	475	21,451	1	**33,012**
Present value of fully or partly funded obligations	–	16,520	133	–	**16,653**
Present value of obligations	**11,085**	**16,995**	**21,584**	**1**	**49,665**
Fair value of plan assets	–	8,898	123	–	**9,021**
Net defined benefit liability	**11,085**	**8,097**	**21,461**	**1**	**40,644**

Changes in obligations

	2017	2016
Balance brought forward	49,665	47,878
Benefits paid by the plan	-2,164	-2,361
Service cost	667	653
Contributions by plan participants	5	5
Actuarial gains (–) or losses (+) due to changes in financial assumptions	490	3,525
Actuarial gains (–) or losses (+) due to plan experience	105	-1,632
Current interest expense	975	1,166
Divested companies	–	-1,046
Translation differences	1,167	1,477
Balance carried forward	**50,910**	**49,665**

Changes in plan assets

	2017	2016
Balance brought forward	9,021	8,959
Benefits paid by the plan	-458	-459
Contributions by employer	21	22
Contributions by plan participants	5	5
Interest income	155	199
Difference between calculated and actual return	-64	87
Divested companies	–	-144
Translation differences	268	352
Balance carried forward	**8,948**	**9,021**

Plan assets consist of the following

	2017	2016
Shares and participations	4,091	3,459
Interest-bearing instruments	3,368	4,146
Property	1,157	1,130
Other	332	286
Total	**8,948**	**9,021**

Payments for employer contributions to defined benefit plans during 2018 are estimated at SEK 20 million.

Pension costs

Continuing operations	2017	2016
Defined benefit plans:		
Current service cost	644	626
Interest expenses	975	1,153
Interest income	-155	-199
Past service cost	23	18
Total cost for defined benefit plans	**1,487**	**1,598**
Cost for defined contribution plans	822	793
Total pension costs	**2,309**	**2,391**

Pension costs are reported on the following lines in the income statement:

Continuing operations	2017	2016
Cost of products sold	1,260	1,303
Selling expenses	71	61
Administrative expenses	158	73
Financial expenses	820	954
Total pension costs	**2,309**	**2,391**

In calculating pension obligations, the following actuarial assumptions have been made (%):

	Sweden		Germany	
	2017	2016	2017	2016
Discount rate	2.50	2.75	1.75	1.75
Future annual salary increases	3.00	3.00	2.50	2.50
Future annual pension increases	1.50	1.50	0.0-2.0	0.0-2.0

Sensitivity to key actuarial assumptions

	Sweden				Germany			
	2017		2016		2017		2016	
		%		%		%		%
Impact on the defined benefit obligation at 31 December of a:								
Increase by 50 basis points in the discount rate	-950	-8.2	-918	-8.3	-2,593	6.6	-2,582	-6.7
Decrease by 50 basis points in the discount rate	1,056	9.1	996	9.0	2,952	7.5	2,901	7.5
Increase by 50 basis points in the annual pension increases	1,056	9.1	996	9.0	2,280	5.8	2,234	5.8
Decrease by 50 basis points in the annual pension increases	-950	-8.2	-918	-8.3	-2,195	5.6	-2,044	-5.3

At 31 December 2017 the weighted duration of pension obligations was 14.5 (14.6) years for Germany and 17.3 (17.2) years for Sweden.

Note 35 Other interest-bearing provisions

Accounting policy

A provision is reported on the balance sheet when the Group has a legal or constructive obligation as a result of an event and it is probable that an outflow of financial resources will be required to regulate the obligation and a reliable estimate of the amount can be made. Where the effect of the time when payment is made is material, provisions are estimated by discounting the anticipated future cash flow at an interest rate before tax that reflects market estimates of time value of money. The discount rate does not reflect such risks that are taken into consideration in the estimated future cash flow.

Changes in discounted provisions for dismantling, restoration or similar measures, which at the time of acquisition have also been reported as tangible non-current assets, are reported as follows: In cases where the change is due to a change in the estimated outflow of resources or a change in the discount rate, the cost of a non-current tangible asset is changed in an amount corresponding to the provision. The periodic change of the present value is recognised as a financial expense.

Provisions are also reported for onerous contracts, that is, where unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received from the contract.

Important estimations and assessments

Provisions for future expenses for nuclear power operations

Provisions for future expenses for nuclear power operations, which pertain to future obligations for handling the decommissioning of Vattenfall's nuclear power plants in Sweden and Germany as well as for handling nuclear waste, are based on long-term cash flow estimations with respect to future expenses. These long-term cash flow estimations mainly pertain to technical plans, estimations on the amount of the expenses, when in time these are expected to fall due, and the discount rate. In many cases, these cash flow estimations must be approved by the pertinent authorities.

For provisions for future expenses for nuclear power operations in Sweden, the discount rate has been reduced to 3.25% (3.75%) compared with the preceding year. The estimated duration of the remaining nuclear power provisions in Germany has been shortened significantly compared with the preceding year, which has entailed a decrease in the discount rate to 1.25% (1.75%) compared with the preceding year.

Other provisions than pension provisions and provisions for future expenses for nuclear power operations

For other types of provisions, such as provisions for future expenses for gas and wind operations and other environmental measures/undertakings, and for personnel-related provisions for non-pension purposes, provisions for tax and legal disputes, or other provisions, the following discount rates are used: Sweden 3.25% (3.75%), Germany 0.75–3.00% (1.25%–3.5%), Netherlands 1.00% (1.25%), Denmark 3.00% (3.5%) and the UK 3.75% (3.75%).

Financial information

	Non-current portion		Current portion		Total	
	2017	**2016**	**2017**	**2016**	**2017**	**2016**
Provisions for future expenses of nuclear power operations	70,104	63,797	1,765	17,091	**71,869**	**80,888**
Provisions for future expenses of gas and wind operations and other environmental measures/undertakings	6,465	4,197	43	96	**6,508**	**4,293**
Personnel-related provisions for non-pension purposes	4,542	5,008	1,113	745	**5,655**	**5,753**
Provisions for tax and legal disputes	2,218	2,200	359	144	**2,577**	**2,344**
Other provisions	2,672	4,139	437	283	**3,109**	**4,422**
Total	**86,001**	**79,341**	**3,717**	**18,359**	**89,718**	**97,700**

Provisions for future expenses for nuclear power operations
Vattenfall's nuclear power producers in Sweden and Germany have a legal obligation upon the cessation of production to decommission and dismantle the nuclear power plants and to restore the plots of land where the plants are located.

On 3 July 2017, Vattenfall paid SEK 12.9 billion (EUR 1.33 billion) plus an additional risk premium of SEK 4.4 billion (EUR 460 million) into the new nuclear energy fund in Germany. The payment shifts the liability for transport, intermediate and final storage of nuclear waste to the German state. Vattenfall now remains responsible for decommissioning and dismantling the nuclear power plants, and the share of provisions for this purpose remains in the company. As of 30 June 2017 SEK 15.674 million was classified as a financial liability, which can be seen below in the row "Reclassification to liabilities".

The Swedish obligation also encompasses the safeguarding and final storage of spent radioactive fuel and other radioactive materials used by the plants. The provisions include future expenses for the handling of low- and intermediate-level radioactive waste. As the permit-holder in Sweden, Vattenfall is responsible for the financing of this handling. As shown in Note 22 to the consolidated accounts, Share in the Swedish Nuclear Waste Fund, Vattenfall's share in the Swedish Nuclear Waste Fund amounts to SEK 38,591 million (36,199).

	Sweden	Germany	Total
Balance brought forward	47,719	33,169	**80,888**
Provisions for the period	1,749	1,582	**3,331**
Interest effects	1,736	314	**2,050**
Revaluations versus non-current assets	3,796	–	**3,796**
Reclassification to liabilities	–	-15,674	**-15,674**
Reversed provisions	–	-946	**-946**
Provisions used	-1,170	-1,080	**-2,250**
Translation differences	–	674	**674**
Balance carried forward	**53,830**[1]	**18,039**[2]	**71,869**

[1] Of which, approximately 28% (28%) pertains to the dismantling of nuclear power plants and approximately 72% (72%) to the handling of spent radioactive fuel.

[2] Of which, approximately 67% (43%) pertains to the dismantling of nuclear power plants and approximately 33% (57%) to the handling of nuclear waste.

Provisions for future expenses for gas and wind operations and other environmental measures/undertakings
Provisions are made in the Netherlands for the dismantling and removal of assets and restoration of sites where the Group conducts gas operations. Provisions are also made for restoration of sites where the Group conducts wind operations and for environmental measures/undertakings within other activities carried out by the Group.

Balance brought forward	4,293
Provisions for the period	150
Interest effects	175
Reclassified to/from other provision	1,157
Revaluations	771
Provisions used	-32
Provisions reversed	-111
Translation differences	105
Balance carried forward	**6,508**

Personnel-related provisions for non-pension purposes
Provisions are made for future costs pertaining to long-term time accounts, jubilee payments, severance payments related to restructuring measures, and other costs for giving notice to personnel.

Balance brought forward	5,753
Provisions for the period	855
Interest effects	55
Revaluations	-1
Provisions used	-1,069
Provisions reversed	-97
Translation differences	159
Balance carried forward	**5,655**

Provisions for tax and legal disputes
Provisions are made for possible future tax expenses due to ongoing tax audits and for ongoing legal disputes and actions. These include provisions related to ongoing legal actions concerning encroachment regarding cable laying on land in eastern Germany.

Balance brought forward	2,344
Acquired companies	8
Provisions for the period	184
Interest effects	57
Provisions used	-18
Provisions reversed	-58
Translation differences	60
Balance carried forward	**2,577**

Other provisions
Other provisions include, among others, provisions for onerous contracts, restructuring and guarantee commitments.

Balance brought forward	4,422
Acquired companies	7
Provisions for the period	263
Interest effects	3
Reclassified to/from other provision	-1,157
Revaluations	-26
Provisions used	-330
Provisions reversed	-159
Translation differences	86
Balance carried forward	**3,109**

Future expenses of non-current provisions

With the current assumptions, provisions are expected to result in outgoing payments as shown below:

	Provision for nuclear Germany	Provision for gas and wind operations	Personnel-related provision	Provision for tax and legal disputes	Other provisions	Total
2–5 years	5,468	1,366	2,564	1,718	1,982	**13,098**
6–10 years	6,412	1,596	1,512	499	688	**10,707**
11–20 years	4,275	2,161	365	1	1	**6,803**
Beyond 20 years	120	1,342	101	–	1	**1,564**
Total	**16,275**	**6,465**	**4,542**	**2,218**	**2,672**	**32,172**

Payments of future expenses for nuclear power in Sweden are not included in the amounts reported above, since the owners of the reactors are compensated in corresponding amounts from the Swedish Nuclear Waste Fund.

Note 36 Other noninterest-bearing liabilities (non-current)

Of total liabilities of SEK 6,570 million (6,440), SEK 4,785 million (4,5150%) falls due after more than five years. Of the total liabilities, SEK 5,378 million (5,108) pertains to deferred income and SEK 1,192 million (1,332) to other liabilities.

Note 37 Trade payables and other liabilities

	2017	2016
Accounts payable - trade	16,198	15,420
Liabilities to associated companies	136	355
Other liabilities	7,538	9,555
Total	**23,872**	**25,330**

Note 38 Advance payments received

	2017	2016
Margin calls received, energy trading	8,745	2,164
Total	**8,745**	**2,164**

A margin call received is marginal security (collateral) that Vattenfall's counterparty pays to Vattenfall as the holder of a derivative position to cover Vattenfall's credit risk, either bilaterally via OTC or through an exchange. In Vattenfall's business activities, margin calls occur in energy trading and in the treasury operations.

Margin calls received within energy trading are recognised on the balance sheet as Advance payments received and are thereby recognised in the statement of cash flows as cash flows from changes in operating liabilities while margin calls received within financing activities are recognised on the balance sheet as Current interest-bearing liabilities (Note 33 to the consolidated accounts, Interest-bearing liabilities and related financial derivatives) and are thereby recognised in the statement of cash flows recognised as cash flows from financing activities.

Note 39 Accrued expenses and deferred income

	2017	2016
Accrued personnel-related costs	2,321	2,286
Accrued expenses, CO_2 emission allowances	1,582	1,383
Accrued expenses, connection fees	90	83
Accrued nuclear power-related fees and taxes	795	1,131
Accrued interest expense	2,203	2,368
Other accrued expenses	3,676	4,967
Deferred income and accrued expenses, electricity	2,350	2,917
Other deferred income	569	346
Total	**13,586**	**15,481**

Note 40 Financial instruments by category, offsetting of financial assets and liabilities, and financial instruments' effects on income

Accounting policy

For assets and liabilities with a remaining maturity less than three months (that is cash and bank balances, trade receivables and other receivables and trade payables and other payables), fair value is considered to be equal to the carrying amount. For Other shares and participations carried at cost, in the absence of fair value, cost is considered to be equal to the carrying amount. The fair value hierarchy is described in Note 3 to the consolidated accounts, Accounting policies.

Financial assets

Financial assets are classified in various categories depending on the purpose of the acquisition of the financial asset. The classification is determined at the original point of acquisition. Settlement day accounting is applied for spot purchases and spot sales of financial assets.

Financial assets at fair value through profit or loss

This category includes assets classified as held for trading, which means that the intention is for them to be divested in the near term. Derivative instruments not held for hedging purposes are always regarded as held for trading. Fair value of currency forward contracts is calculated by discounting the difference between the contracted forward rate and the forward rate that can be contracted on the balance sheet date for the remaining contract period. Discounting is done at a risk-free interest rate based on government bonds. Fair value of interest rate swaps is based on a discounting of calculated future cash flows in accordance with the contract's terms and due dates, based on the market rate of interest. Fair value of options is based on quoted prices, where such are available. The value of unquoted options is calculated using the Black-Scholes model, based on underlying market data.

Fair value of commodity contracts is calculated by discounting the difference between the contracted forward price and the contracted forward price that can be obtained on the balance sheet date for the remaining contract period.

For Vattenfall, the category "Financial assets at fair value through profit or loss" also includes short-term liquid investments with terms of less than three months, since Vattenfall follows up and measures these based on fair values. The category also includes short-term investments with original maturities in excess of three months. For listed securities, fair value is based on the quoted buying price on the balance sheet date. For other short-term investments, fair value is calculated by discounting estimated future cash flows in accordance with the contract's terms and maturity dates, and based on the market rate of interest for similar instruments on the balance sheet date. The assets are remeasured on a continuous basis to fair value, with changes in value presented in profit or loss.

Loans and receivables
Trade receivables are reported at the amount expected to be paid, that is, less doubtful debts. Impairment losses on trade receivables are reported under operating expenses. Trade receivables have a short anticipated term and are therefore valued at a nominal amount without discounting. Fair value of loans is calculated for disclosure purposes by discounting future cash flows using the current interest rate. For trade receivables, the reported value is considered to reflect fair value.

Available-for-sale financial assets
Financial assets that are available for sale are measured at fair value, with changes in value recognised in Other comprehensive income. On the date that the assets are derecognised from the balance sheet, any previously recognised accumulated gain or loss in Other comprehensive income is transferred to the income statement. Holdings in listed companies are measured based on the share price on the balance sheet date. Shares and participations for which there are no balance sheet date quotations and for which a fair value cannot be established are valued at cost, after taking accumulated impairment losses into account.

Financial liabilities
Financial liabilities have been classified in various categories depending on the purpose of the acquisition of the financial liability. The classification is determined at the date of original acquisition.

Financial liabilities at fair value through profit or loss
Derivative instruments not held for hedging purposes are always classified in this category. These financial liabilities are measured at fair value with changes in value recognised in profit or loss. For a description of how fair value is measured, see above under the heading "Financial assets at fair value through profit or loss".

Other financial liabilities
In this category, interest-bearing and noninterest-bearing financial liabilities that are not held for trading purposes are reported. Other financial liabilities are measured at amortised cost. Trade liabilities have a short anticipated term and are therefore valued at a nominal amount without discounting.

Fair value of other financial liabilities is calculated for disclosure purposes by discounting future cash flows using the current interest rate for the remaining term, with the exception of trade payables, where the reported value is considered to reflect fair value. Liabilities included in a hedge relationship are reported in accordance with the principles described below.

Derivative instruments
Vattenfall uses various types of derivative instruments (forwards, futures and swaps) to hedge various financial risks, primarily interest rate risks, currency risks and commodity price risks.

Derivative instruments are reported at fair value on the balance sheet date. The reporting of changes in value depends on whether the derivative instrument is classified as a hedge or not. In a situation where hedging is not applied, the change in value is recognised in profit or loss in the period in which it arises. Based on the purpose of the contract, changes in value are reported either under operating profit or as financial income/expense. Effects of hedge accounting are described below.

Hedge accounting
Hedge accounting is applied for derivative instruments that are included in a documented hedge relationship. The reporting of changes in value depends on the type of hedge entered into.

Cash flow hedges
Cash flow hedges are used primarily in the following cases: i) when forward commodity contracts are used to hedge commodity price risk in future purchases and sales, ii) when forward exchange rate contracts are used to hedge currency risk in future purchases and sales in foreign currencies, and iii) when interest rate swaps are used to replace borrowing at a floating interest rate with a fixed interest rate.

For derivative instruments that constitute a hedge instrument in a cash flow hedge, the effective part of the change in value is reported in Other comprehensive income while the ineffective part is recognised directly in profit or loss. The part of the change in value that is reported in Other comprehensive income is then transferred to the income statement in the period when the hedged item affects the income statement. In cases where the hedged item refers to a future transaction, which is later capitalised as a non-financial asset or liability on the balance sheet (for example, when hedging future purchases of non-current assets in a foreign currency), the part of the change in value reported in Other comprehensive income is transferred to and included in the cost of the asset or liability.

If the conditions for hedging are no longer met, the accumulated changes in value that were reported in Other comprehensive income are transferred to the income statement/balance sheet in the later period when the hedged item affects the income statement/balance sheet. Changes in value from the day on which the conditions for hedging ceased to be met are recognised directly in profit or loss. If the hedged transaction is no longer expected to occur, the hedges accumulated changes in value are immediately transferred from Other comprehensive income to the Income statement.

Hedges of fair value
A hedge of fair value is primarily used in cases where interest rate swaps are used to replace borrowing at a fixed interest rate with a floating interest rate.

Hedges of net investments in foreign operations
Hedging of net investments is primarily used when forward exchange rate contracts and loans in foreign currencies are used to hedge the currency risk of the company's investments in foreign subsidiaries.

Financial information
Risks arising from financial instruments are described under the heading Risks and risk management on pages 62–69 in this Annual and Sustainability Report.

Financial instruments by category

	2017		2016	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets at fair value through profit or loss				
Derivative assets	17,208	17,208	20,348	20,348
Short-term investments	15,342	15,342	20,756	20,756
Cash equivalents	2,680	2,680	10,759	10,759
Total	**35,230**	**35,230**	**51,863**	**51,863**
Derivative assets for hedging purposes for:				
Fair value hedges	1,874	1,874	1,948	1,948
– of which interest rate swaps	1,874	1,874	1,948	1,948
Cash flow hedges	4,748	4,748	2,396	2,396
– of which commodities and commodity-related contracts	4,480	4,480	1,703	1,703
– of which currency-forward contracts and other	–	–	693	693
Total	**6,622**	**6,622**	**4,344**	**4,344**
Loans and receivables				
Share in the Swedish Nuclear Waste Fund	38,591	40,736	36,199	38,866
Other non-current receivables	3,964	3,990	3,788	3,818
Trade receivables and other receivables	19,946	19,946	23,100	23,100
Advance payments paid	2,054	2,054	893	893
Short-term investments	2,749	2,749	2,541	2,543
Cash and bank balances	6,125	6,125	9,236	9,236
Total	**73,429**	**75,600**	**75,757**	**78,456**
Available-for-sale financial assets				
Other shares and participations carried at cost	148	148	118	118
Total	**148**	**148**	**118**	**118**
Financial liabilities at fair value through profit or loss				
Derivative liabilities	22,063	22,063	20,676	20,676
Total	**22,063**	**22,063**	**20,676**	**20,676**
Derivative liabilities for hedging purposes for:				
Cash flow hedges	3,935	3,935	3,340	3,340
– of which commodities and commodity-related contracts	3,631	3,631	3,325	3,325
– of which currency-forward contracts and other	–	–	15	15
Total	**3,935**	**3,935**	**3,340**	**3,340**
Other financial liabilities				
Hybrid Capital, non-current interest-bearing liability	19,118	19,799	19,164	18,317
Other non-current interest-bearing liabilities	54,335	61,155	63,494	72,033
Other non-current noninterest-bearing liabilities	6,570	6,570	6,440	6,440
Current interest-bearing liabilities	13,701	13,833	14,009	14,011
Trade payables and other liabilities	17,319	17,319	17,509	17,509
Advance payments received	8,745	8,745	2,164	2,164
Total	**119,788**	**127,421**	**122,780**	**130,474**

Offsetting financial assets and financial liabilities

Presented below are financial assets and liabilities that are subject to enforceable master netting arrangements and similar agreements.

Assets 31 December 2017

				Related amounts not set off on the balance sheet		
	Gross amounts of recognised financial assets	Gross amounts of recognised financial liabilities set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Financial liabilities, not intended to be settled net[1]	Cash collateral received	Net amount
Derivatives, financial operations	6,039	–	6,039	2,715	3,265	59
Derivatives, commodity contracts	51,751	34,855	16,896	–	8,568	8,328
Total	**57,790**	**34,855**	**22,935**	**2,715**	**11,833**	**8,387**
Derivatives, not subject to offsetting	895	–	895	–	–	895
Total derivative assets			**23,830**			**9,282**

Assets 31 December 2016

				Related amounts not set off on the balance sheet		
	Gross amounts of recognised financial assets	Gross amounts of recognised financial liabilities set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Financial liabilities, not intended to be settled net[1]	Cash collateral received	Net amount
Derivatives, financial operations	7,767	–	7,767	3,611	3,916	240
Derivatives, commodity contracts	62,596	48,283	14,313	–	2,165	12,148
Total	**70,363**	**48,283**	**22,080**	**3,611**	**6,081**	**12,388**
Derivatives, not subject to offsetting	2,612	–	2,612	–	–	2,612
Total derivative assets			**24,692**			**15,000**

Liabilities 31 December 2017

				Related amounts not set off on the balance sheet		
	Gross amounts of recognised financial liabilities	Gross amounts of recognised financial assets set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Financial assets, not intended to be settled net[1]	Cash collateral pledged	Net amount
Derivatives, financial operations	5,473	–	5,473	2,715	2,695	63
Derivatives, commodity contracts	52,255	34,855	17,400	–	2,176	15,224
Total	**57,728**	**34,855**	**22,873**	**2,715**	**4,871**	**15,287**
Derivatives, not subject to offsetting	3,125	–	3,125	–	–	3,125
Total derivative liabilities			**25,998**			**18,412**

Liabilities 31 December 2016

				Related amounts not set off on the balance sheet		
	Gross amounts of recognised financial liabilities	Gross amounts of recognised financial assets set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Financial assets, not intended to be settled net[1]	Cash collateral pledged	Net amount
Derivatives, financial operations	6,382	–	6,382	3,611	2,531	240
Derivatives, commodity contracts	60,544	48,283	12,261	–	868	11,393
Total	**66,926**	**48,283**	**18,643**	**3,611**	**3,399**	**11,633**
Derivatives, not subject to offsetting	5,373	–	5,373	–	–	5,373
Total derivative liabilities			**24,016**			**17,006**

[1] These items cannot be settled net as each transaction has a unique due date and they were not entered into with the purpose to be settled net. Settlement can be entailed only in case of default.

Financial assets and liabilities that are measured at fair value on the balance sheet at 31 December 2017

	Level 1	Level 2	Level 3	Total
Assets				
Derivative assets	–	23,701	129	**23,830**
Short-term investments and cash equivalents	10,700	7,322	–	**18,022**
Total assets	**10,700**	**31,023**	**129**	**41,852**
Liabilities				
Derivative liabilities	–	25,900	98	**25,998**
Total liabilities	**–**	**25,900**	**98**	**25,998**

Financial assets and liabilities that are measured at fair value on the balance sheet at 31 December 2016

	Level 1	Level 2	Level 3	Total
Assets				
Derivative assets	–	24,438	254	**24,692**
Short-term investments and cash equivalents	13,935	17,580	–	**31,515**
Total assets	**13,935**	**42,018**	**254**	**56,207**
Liabilities				
Derivative liabilities	–	23,898	118	**24,016**
Total liabilities	**–**	**23,898**	**118**	**24,016**

Information about fair value of financial assets and liabilities which are, on the balance sheet at 31 December 2017, measured at amortised cost

	Level 1	Level 2	Total
Assets			
Share in the Swedish Nuclear Waste Fund	40,736	–	**40,736**
Other non-current receivables	–	3,990	**3,990**
Total assets	**40,736**	**3,990**	**44,726**
Liabilities			
Hybrid Capital	–	19,799	**19,799**
Other non-current interest-bearing liabilities	–	61,155	**61,155**
Current interest-bearing liabilities	–	13,833	**13,833**
Total liabilities	**–**	**94,787**	**94,787**

Information about fair value of financial assets and liabilities which are, on the balance sheet at 31 December 2016, measured at amortised cost

	Level 1	Level 2	Total
Assets			
Share in the Swedish Nuclear Waste Fund	38,866	–	**38,866**
Other non-current receivables	–	3,818	**3,818**
Total assets	**38,866**	**3,818**	**42,684**
Liabilities			
Hybrid Capital	–	18,317	**18,317**
Other non-current interest-bearing liabilities	–	72,033	**72,033**
Current interest-bearing liabilities	–	14,011	**14,011**
Total liabilities	**–**	**104,361**	**104,361**

Information about fair value of financial assets and liabilities which are, on the balance sheet at 31 December 2016, measured at amortised cost

	Derivative assets		Derivative liabilities	
	2017	**2016**	**2017**	**2016**
Balance brought forward	254	408	118	1,438
Revaluations recognised in operating profit (EBIT)	-130	-168	-23	-1,361
Translation differences	5	14	3	41
Balance carried forward	**129**	**254**	**98**	**118**
Total revaluations for the period included in operating profit (EBIT) for assets and liabilities held at 31 December	129	49	-24	-183

Sensitivity analysis for electricity and fuel derivatives
The price of electricity is the main factor impacting the change in fair value recognised in other comprehensive income. Changes in fair value that are recognised in the income statement originate from the prices for gas and oil. The sensitivity analysis is based on volumes and market prices at year-end. The analysis pertains to profit before tax.

Fair valuation on the balance sheet date of 31 December 2017 of +/–10% would change the fair value of Vattenfall's electricity and fuel derivatives by –/+ SEK 387 million (–/+1,195) in other comprehensive income (hedge-accounted derivatives) and +/– SEK 2,902 million (+/–19) in the income statement (non-hedge-accounted derivatives).

Sensitivity analysis for Level 3 contracts
For the determination of fair value of financial instruments, Vattenfall strives to use valuation techniques that maximise the use of observable market data where it is available and rely as little as possible on entity-specific estimates.

Entity-specific estimates are based on internal valuation models that are subject to a defined process of validation, approval and monitoring. In the first step the model is designed by the business. The valuation model and calibration of the valuation model is then independently reviewed and approved by Vattenfall's risk organisation. If deemed necessary, adjustments are required and implemented. Afterwards, Vattenfall's risk organisation continuously monitors whether the application of the method is still appropriate. This is made by usage of several back-testing tools. In order to reduce valuation risks, the application of the model can be restricted to a limited scope.

Vattenfall's Level 3 contracts consist of CDM, long-term electricity contracts, virtual gas storage contracts, gas swing contracts, and virtual power plants. Presented below are Vattenfall's material Level 3 contracts.

Virtual gas storage contracts:
A virtual gas storage contract is a contract that allows Vattenfall to store gas without owning a gas storage facility. The virtual gas storage contracts include constraints to the maximum storage capacity and the maximum injection and withdrawal per day. The valuation of the contract is based on the storage, injections and withdrawal fees included in the contract, the expected spread between gas prices in the summer and winter which is observable and the optionality value, which is marked to model (Level 3). The valuation methodology is based on a backward estimation of the value of the contracts under different price and operational scenarios and a forward step that selects the optimal exercise. The price scenarios are based on simulating the forward prices until the beginning of their respective delivery periods and the simulation of the daily spot prices during the delivery period. The spot prices are simulated using the forward prices as a starting point. Finally, the spot volatility is calibrated using three years of historical data.

The net value as per 31 December 2017 has been calculated at SEK 89 million (189) and is most sensitive to the optionality volatility. A change in the value of the daily volatility of +/–5% would affect the total value by approximately +/–SEK 17 million (+/–13).

Gas swing contracts:
A gas swing contract is a contract that provides flexibility on the timing and amount of gas purchases. The contract is based on a price formula with a maximum and minimum annual and daily gas quantity. The valuation of the contract is based on observable price difference between the contract prices and indexes and the optional value, which is marked to model (Level 3). The valuation methodology is based on a backward estimation of the value of the contracts under different price and operational scenarios and a forward step that selects the optimal exercise. The price scenarios are based on simulating the forward prices until the beginning of their respective delivery periods and the simulation of the daily spot prices during the delivery period. The spot prices are simulated using the forward prices as a starting point. Finally, the spot volatility is calibrated using three years of historical data.

The net value as per 31 December 2017 has been calculated at SEK –59 million (–115) and is most sensitive to the optionality volatility. A change in the value of the daily volatility of +/–5% would affect the total value by approximately –/+ SEK 4 million (–/+8).

Financial instruments: Effects on income by category
Net gains (+)/losses(–) and interest income and expenses for financial instruments recognised in the income statement:

	2017			2016		
Total Vattenfall	**Net gains/ losses[1]**	**Interest income**	**Interest expenses**	**Net gains/ losses[1]**	**Interest income**	**Interest expenses**
Derivative assets and derivative liabilities	-3,215	117	-34	1,758	203	-475
Available-for-sale financial assets	100	–	–	-143	–	–
Loans and receivables	-202	1,253	–	25	1,004	–
Financial liabilities measured at amortised cost	312	–	-5,018	-816	–	-3,017
Total	**-3,005**	**1,370**	**-5,052**	**824**	**1,207**	**-3,492**

[1] Exchange rate gains and losses are included in net gains/losses.

Note 41 Specifications of the cash flow statement

Other, including non-cash items

Total Vattenfall	2017	2016
Undistributed results from participation in associated companies	-287	923
Unrealised foreign exchange gains/losses	-214	801
Unrealised changes in values related to derivatives	2,838	1,097
Changes in fair values for inventories	-13	-990
Changes in interest receivables	104	583
Changes in interest liabilities	176	-345
Changes in the Swedish Nuclear Waste Fund	-2,392	-2,027
Changes in provisions	1,595	6,871
Other	57	–
Total	**1,864**	**6,913**

Interest paid totalled SEK 4,896 million (3,409) and interest received totalled SEK 289 million (979). Dividends received totalled SEK 166 million (220).

Other investments in non-current assets

Total Vattenfall	2017	2016
Investments in intangible assets: non-current, including advance payments	-488	-487
Investments in property, plant and equipment, including advance payments	-19,448	-22,995
Total	**-19,936**	**-23,482**

Divestments

Total Vattenfall	2017	2016
Divestments of shares and participations	1,731	1,298
Divestments of property, plant and equipment	1,064	3,104
Total	**2,795**	**4,406**

Note 42 Specifications of equity

Share capital

As of 31 December 2017 the registered share capital comprised 131,700,000 shares with a share quota value of SEK 50.

Translation reserve

The translation reserve comprises all exchange rate differences arising from the translation of financial reports from non-Swedish operations that prepare their reports in a currency other than that in which the Group reports. Further, the translation reserve includes exchange rate differences arising from the reassessment of debts raised as hedges for net investments in non-Swedish operations.

Reserve for hedges

The reserve for hedges comprises mostly unrealised changes in values of commodity derivatives used to hedge future sales (cash flow hedges). The reserve for hedges is expected to affect the income statement and cash flow, respectively, in the periods indicated below:

	2017		2016	
	Cash flow	Income statement	Cash flow	Income statement
Within 1 year	2	416	-1,004	-403
Between 1-5 years	-174	69	-896	-728
Total	**-172**	**485**	**-1,900**	**-1,131**
Other	-191	–	-224	–
Total	**-363**	**485**	**-2,124**	**-1,131**

Amounts that have reduced the reserve for hedges are included in the following line items in the income statement:

	2017	2016
Net sales	2,845	-1,175
Cost of products sold	-38	-1,630
Other operating expenses	-8	39
Financial income	42	1
Financial expenses	2	28
Total	**2,843**	**-2,737**

Amounts that have reduced the reserve for hedges are included in the following line items on the balance sheet:

	2017	2016
Property, plant and equipment	-4	-66
Inventories	-8	-5
Total	**-12**	**-71**

Retained earnings including profit for the year

Retained earnings including profit for the year include earned profits in the Parent Company and its subsidiaries, associated companies and joint ventures, and effects of remeasurements of defined benefit pension plans.

Translation exposure of equity in other currencies than SEK

	Equity		Hedging after tax		Net exposure after tax		Average net exposure after tax	
Original currency	2017	2016	2017	2016	2017	2016	2017	2016
EUR	71,333	70,309	30,392	29,903	40,941	40,406	39,345	49,491
DKK	3,692	2,752	–	–	3,692	2,752	3,216	1,777
GBP	15,897	14,034	6,491	8,703	9,406	5,332	6,850	5,623
Other currencies	–	126	–	–	–	126	104	133
Total	**90,922**	**87,221**	**36,883**	**38,606**	**54,039**	**48,616**	**49,515**	**57,024**

Note 43 Collateral

	2017	2016
Shares pledged to PRI Pensionsgaranti, as security for credit insurance in respect of pension obligations in Vattenfall's Swedish operations	7,295	7,295
Blocked bank funds as security for trading on the Nordic electricity exchange and trading with CO_2 emission allowances	2,235	1,085
Blocked bank funds as security for guarantees issued by bank	1	1
Total	**9,531**	**8,381**

In addition to the collateral mentioned above, Vattenfall has the following significant commitments:

To fulfil the requirements for security in the derivative market, in its energy trading and financial operations Vattenfall has pledged security to counterparties for the negative fair value of derivative positions. As per 31 December 2017 this security amounted to SEK 2,054 million (893) for energy trading and SEK 2,749 million (2,541) for the financial operations. The amounts are reported as assets on the balance sheet under Advance payments (Note 28 to the consolidated accounts, Advance payments paid) and under Short-term investments (Note 30 to the consolidated accounts, Short-term investments). The counterparties are obligated to repay this security to Vattenfall in the event the negative fair value decreases.

In a similar manner, Vattenfall's counterparties in energy trading and the financial operations have pledged security to Vattenfall. Security received as per 31 December 2017 amounted to SEK 8,745 million (2,164) for energy trading and SEK 3,312 million (3,961) for the financial operations. The amounts are reported as liabilities on the balance sheet under Advance payments received for the energy trading position (Note 38 to the consolidated accounts, Advance payments received) and Interest-bearing liabilities (current) for the financial operations (Note 33 to the consolidated accounts, Interest-bearing liabilities and related financial derivatives).

Note 44 Contingent liabilities

As per 31 December 2017 contingent liabilities amounted to SEK 1,086 million (1,067). The contingent liabilities mainly consist of the following:

- Vattenfall Wind Power Ltd., together with Scottish Power Renewables Ltd., takes part in developing up to 7,200 MW of wind capacity off the coast of East Anglia as part of The Crown Estate's Round Three wind programme, known as East Anglia Offshore Wind Ltd. The issued guarantees related to East Anglia Offshore Wind amounts to SEK 61 million per 31 December 2017
- Pending legal issues
- Pension commitments PRI
- Various contingent liabilities in relation to eSett Oy (replacing Svenska Kraftnät), the Swedish Nuclear Waste Fund, Forsmark, Ringhals and Vattenfall Energy Trading Hamburg

In addition to the contingent liabilities mentioned above, Vattenfall has the following significant commitments.

In certain rivers, joint regulation facilities exist for several hydro power plants. The owners of the power plants have payment obligations for their share of these regulation costs. Vattenfall has an obligation to compensate certain owners of water rights, in rivers where hydro power stations are built, through the delivery of power. In 2017, such compensation deliveries amounted to 0.8 TWh (0.7), for a value of approximately SEK 249 million (212).

Under Swedish law, Vattenfall has strict and unlimited liability for third-party loss resulting from dam accidents. Together with other hydro power producers in the Nordic countries, Vattenfall has liability insurance that is limited to payment of a maximum of SEK 10,000 million (10,000) in benefits for these types of claims.

In Germany, nuclear power operators have strict and unlimited liability to third parties. By law, nuclear power plants are required to have insurance or other financial guarantees for amounts up to EUR 2,500 million. Claims of up to EUR 256 million are covered by the German Mutual Atomic Energy Reinsurance Pool. The nuclear power plants and their German parent companies (in Vattenfall's case, Vattenfall GmbH) are liable for amounts in excess of this, in proportion to the ownership interests the respective parent companies have in the nuclear power plants. It is not until these resources are exhausted that a joint liability insurance agreement (Solidarvereinbarung) takes force between the owners of the German nuclear power plants (Vattenfall GmbH, E.ON, RWE and EnBW), for amounts up to EUR 2,500 million. Since the liability is unlimited, the nuclear power plants and their German parent companies are ultimately liable for losses that exceed this amount.

Vattenfall owns nuclear power plants in Germany together with other partners in the legal form oHG partnerships. The liability of partners in those partnerships is joint and several. Accounting is based on the assessment that the partnerships themselves as well as the partners are able to fulfil the legal and financial obligations of the partnerships. The total amount of the liabilities (including provisions) of the German nuclear companies as per 31 December 2017 is as follows:

	Share %	Total liabilities	Of which reported in Vattenfall's consolidated statements
Kernkraftwerk Brunsbüttel GmbH & Co. oHG	66.7	11,852	11,852
Kernkraftwerk Krümmel GmbH & Co. oHG	50.0	13,644	6,821
Kernkraftwerk Stade GmbH & Co. oHG	33.3	3,327	–
Kernkraftwerk Brokdorf GmbH & Co. oHG	20.0	15,829	–

Atomic liability in Sweden is strict and limited to 300 million Special Drawing Rights (SDRs) (rate 11,7238), corresponding to SEK 3,517 million (3,669), which means that the companies that are owners of nuclear power plants are only liable for damage to the surrounding environment up to this amount. The obligatory atomic liability insurance for this amount is issued by the Nordic Nuclear Insurers and by the mutual insurance company ELINI (European Liability Insurance for the Nuclear Industry). As policyholders of the mutual insurance companies ELINI and EMANI (European Mutual Association for Nuclear Insurance), Vattenfall's Swedish nuclear power plants Forsmark and Ringhals have an obligation to cover any deficits in insurance reserves in these insurance companies.

In 2009 Vattenfall AB, together with its subsidiary the Swedish Nuclear Fuel and Waste Management Company (SKB) and the other part-owners of that company, signed a long-term co-operation agreement with the Östhammar and Oskarshamn municipalities. The agreement covers the period 2010 to approximately 2025 and regulates development efforts in association with the implementation of the Swedish nuclear waste programme. Through development initiatives in areas such as training, enterprise and infrastructure, over time the parties will generate value-added worth SEK 1,500 million to SEK 2,000 million. The parties are to finance the development efforts in proportion to their ownership interests. The Vattenfall Group's ownership interest is 56%. Implementation of the efforts is being carried out across two periods: a period before all necessary permits have been received (Period 1), and a period during implementation and operation of the facilities (Period 2). As per 31 December 2017 Vattenfall reported a provision of SEK 34 million (56) for its share of Period 1 activities.

As a consequence of the Group's continuing business activities, companies in the Group become parties to legal processes. In addition, disputes arise in the Group's operations that do not lead to legal processes. Vattenfall's management assesses these legal processes and disputes on a regular basis and makes provisions in cases where it believes an obligation exists and this can be judged with a reasonable degree of certainty. In 2017, Vattenfall was not party to any legal actions, concerning alleged anti-competitive behaviour or incidents of bribery or corruption. For legal processes or disputes where at present it cannot be determined whether an obligation exists or where for other reasons it is not possible to calculate the amount of a possible provision with a reasonable degree of certainty, management makes the overall judgement that there is no risk for material impact on the Group's result of operations or financial position. As part of the Group's business activities, in addition to the contingent liabilities stated here, guarantees are made for the fulfilment of various contractual obligations.

Note 45 Commitments under consortium agreements

Power plants are often built on a joint venture basis. Under the consortium agreements, each owner is entitled to electricity in proportion to its share of ownership, and each owner is liable, regardless of output, for an equivalent proportion of all the joint venture's costs. Vattenfall's investments often entail a liability for costs in proportion to its share of ownership. For more information, see Note 20 to the Consolidated accounts, Shares and participations owned by the Parent Company Vattenfall AB and other Group companies.

Note 46 Number of employees and personnel costs

Number of employees at 31 December, full-time equivalents:

	2017			2016		
	Men	Women	Total	Men	Women	Total
Sweden	6,582	2,226	**8,808**	6,519	2,165	**8,684**
Denmark	204	51	**255**	182	50	**232**
Germany	5,332	1,505	**6,837**	5,440	1,558	**6,998**
Netherlands	2,623	852	**3,475**	2,715	880	**3,595**
UK	275	123	**398**	155	61	**216**
Other countries	198	70	**268**	150	60	**210**
Total continuing operations	**15,214**	**4,827**	**20,041**	**15,161**	**4,774**	**19,935**

Average number of employees during the year, full-time equivalents:

	2017			2016		
	Men	Women	Total	Men	Women	Total
Sweden	6,536	2,201	**8,737**	6,571	2,187	**8,758**
Denmark	195	51	**246**	193	49	**242**
Germany	5,379	1,541	**6,920**	5,682	1,702	**7,384**
Netherlands	2,671	858	**3,529**	2,921	921	**3,842**
UK	198	90	**288**	144	55	**199**
Other countries	175	68	**243**	143	58	**201**
Total continuing operations	**15,154**	**4,809**	**19,963**	**15,654**	**4,972**	**20,626**
Discontinued operations	–	–	**–**	4,226	916	**5,142**
Total	**15,154**	**4,809**	**19,963**	**19,880**	**5,888**	**25,768**

Personnel costs:

Continuing operations	**2017**	**2016**
Salaries and other remuneration	12,970	12,994
Social security costs[1]	5,074	4,898
Total	**18,044**	**17,892**

[1] Pension costs are specified in Note 34 to the Consolidated accounts, Pension provisions.

Benefits for board members of Vattenfall AB and senior executives of the Vattenfall Group

	2017			2016		
Amounts in SEK thousands	**Directors' fees and base salary including vacation pay**	**Other remuneration and benefits**	**Pension and severance costs**	**Directors' fees and base salary including vacation pay**	**Other remuneration and benefits**	**Pension and severance costs**
Board of Directors						
Lars G. Nordström, Chairman of the Board	710	–	–	655	–	–
Fredrik Arp, board member	395	–	–	338	–	–
Viktoria Bergman, board member	365	–	–	338	–	–
Staffan Boman, board member until 27 April 2017	120	–	–	240	–	–
Håkan Erixon, board member	382	–	–	338	–	–
Tomas Kåberger, board member	382	–	–	338	–	–
Jenny Lahrin, board member	–	–	–	–	–	–
Åsa Söderström Jerring, board member	380	–	–	353	–	–
Fredrik Rystedt, board member from 27 April 2017	267	–	–	–	–	–
Hilde Tonne, board member until 7 October 2017	279	–	–	230	–	–
Employee representatives	–	–	–	–	–	–
Former board members[1]	–	–	–	206	–	–
Total, Board of Directors	**3,280**	**–**	**–**	**3,036**	**–**	**–**

[1] See Vattenfall's 2016 Annual and Sustainability Report, pages 134–135.

Amounts in SEK thousands	2017 Directors' fees and base salary including vacation pay	2017 Other remuneration and benefits	2017 Pension and severance costs	2016 Directors' fees and base salary including vacation pay	2016 Other remuneration and benefits	2016 Pension and severance costs
Executive Group Management[2]						
Magnus Hall, President and CEO	14,876	68	4,375	14,672	68	4,288
Stefan Dohler, CFO until 31 October 2017	8,001	118	1,840	7,161	78	1,647
Anna Borg, CFO from 1 November 2017[3]	4,710	–	1,357	–	–	–
Torbjörn Wahlborg, Senior Vice President, Head of Generation Business Area	7,129	67	2,107	7,011	61	2,067
Tuomo Hatakka, Senior Vice President, Head of Heat Business Area	12,242	92	2,651	11,778	9	2,599
Kerstin Ahlfont, Head of Human Resources Staff Function	4,225	18	1,249	4,145	18	1,225
Gunnar Groebler, Head of Wind Business Area	5,494	91	979	5,275	90	936
Anne Gynnerstedt, Head of Legal & CEO Office Staff Function and Secretary to the Board of Directors	4,917	55	1,410	4,612	55	1,382
Martijn Hagens, Head of Customers & Solutions Business Area	6,487	135	774	6,680	200	284
Niek den Hollander, Head of Markets Business Area from 1 November 2017[3]	1,125	2,383[4]	202	–	–	–
Andreas Regnell, Head of Strategic Development Staff Function	4,541	42	1,327	4,481	18	1,301
Karin Lepasoon, Head of Group Communication	4,740	32	1,293	3,199	–	950
Other senior executives[2]						
Björn Linde, Head of Ringhals, Head of Forsmark	2,700	58	799	2,040	127	606
Annika Viklund, Head of Distribution Business Area	4,768	30	1,405	4,705	24	1,378
Former senior executives						
Ingrid Bonde, employed until 15 February 2017	912	–	353	7,457	–	2,134
Other former senior executives[1]	–	–	–	4,678	173	3,307
Total Executive Group Management and senior executives	**86,867**	**3,189**	**22,121**	**87,894**	**921**	**24,104**
Total Board of Directors, Executive Group Management and other senior executives	**90,147**	**3,189**	**22,121**	**90,930**	**921**	**24,104**

[1] See Vattenfall's 2016 Annual and Sustainability Report, pages 134–135.

[2] For persons who changed positions in 2017, their most recent position is indicated.

[3] Fees and salary pertain only to remuneration received during time on the Executive Group Management in 2017.

[4] Of this amount, SEK 2,366 thousand pertains to payment of variable remuneration received in December 2017 related to a previous position at Vattenfall.

Board of Directors

As of 27 April 2017 the Annual General Meeting resolved in favour of increasing these fees by 9.6% and 10%, respectively, entailing that directors' fees for the period until the end of the next Annual General Meeting shall amount to SEK 685 thousand for the Chairman of the Board and SEK 330 thousand for each of the other directors elected at the Annual General Meeting. In addition, it was resolved that for service on the Audit Committee, a fee of SEK 90 thousand shall be paid to the respective committee chairs and SEK 70 thousand to the other committee members. For service on the Remuneration Committee, a fee of SEK 60 thousand shall be paid to the respective committee chairs and SEK 45 thousand to the other committee members. No directors' fees are paid to board members who are employed by the Swedish Government Offices or to employee representatives. The fees paid to each individual board member are shown in the table above. The board members' respective committee assignments are described in the Corporate Governance section on pages 70–84.

President and Chief Executive Officer

Magnus Hall received a salary of SEK 14,876 thousand in 2017. The value of other benefits in 2017 amounted to SEK 68 thousand and pertain to the benefit of an annual pass with SJ. Magnus Hall has no variable salary component in his employment as President and CEO of Vattenfall AB.

Magnus Hall has a defined contribution pension solution. Premiums paid for 2017 totalled SEK 4,375 thousand, which corresponds to 30% of his 2017 salary excluding benefits. Magnus Hall's term of employment is until further notice, with a mutual notice period of six months. In the event Vattenfall serves notice, Magnus Hall is entitled to a maximum of 18 months' severance pay after the notice period, but not longer than until his date of retirement. The amount of the severance pay shall be based on the fixed salary that applied at the time the notice was served. In the event Magnus Hall accepts new employment or earns income from other business activities, the severance pay shall be reduced by an amount corresponding to the new income or other benefit received during the period in question. Severance pay is to be paid out monthly. Magnus Hall's terms of employment are in agreement with the Swedish government's guidelines.

Other senior executives

Salaries and other remuneration

For other members of the Executive Group Management, a total of 11 individuals (10), the sum of salaries and other remuneration for 2017, including the value of company cars and other benefits, was SEK 66,644 thousand. For other persons defined as senior executives by Vattenfall, who are not members of the Executive Group Management – a total of 2 individuals (4) – the sum of salaries and other remuneration for 2017, including the value of company cars and other benefits, was SEK 7,556 thousand.

Retirement benefits
Kerstin Ahlfont, Stefan Dohler, Gunnar Groebler, Anne Gynnerstedt, Tuomo Hatakka, Andreas Regnell, Torbjörn Wahlborg, Björn Linde, Annika Viklund, Karin Lepasoon, Anna Borg and Niek den Hollander all have defined contribution pension solutions. Martijn Hagens has a pension solution under collective agreements in the Netherlands. All pensions for these executives are in compliance with the Swedish government's guidelines.

Terms of notice on the part of the company
According to the government's guidelines, the notice period for a senior executive in the event the company serves notice shall not exceed six months. In addition, severance pay equivalent to a maximum of 12 months' salary[1] is payable thereafter. In the event the individual in question accepts new employment or receives income from other business activities, the severance pay shall be reduced by an amount corresponding to the new income or benefit received during the time in question. The severance pay is paid out monthly. All senior executives have severance terms that are in compliance with the government's guidelines.

Incentive programmes
The members of the Executive Group Management and other senior executives do not receive any variable salary component.

Payment from variable remuneration programmes
Vattenfall offers short-term variable performance-based remuneration programmes to certain categories of employees in order to attract, retain and motivate.

Amounts in SEK thousands	Payment 2017	Payment 2016
Type of programme:		
Profit-sharing	187,404[2]	24,048
Short-term incentive programmes	219,837	222,633
Long-term incentive programmes	24,038	25,157

[1] Based on new guidelines from the government. Contracts entered into before the Annual General Meeting 27 April 2017 have severance pay corresponding to a maximum of 18 months.

[2] Payments were made to employees under the variable remuneration programme in 2017, but not in 2016.

Note 47 Gender distribution among senior executives

	Women, %		Men, %	
	2017	2016	2017	2016
Gender distribution among board members	29	33	71	67
Gender distribution among other senior executives	36	30	64	70

Note 48 Related party disclosures

Vattenfall AB is 100%-owned by the Swedish state. The Vattenfall Group's products and services are offered to the state, state authorities and state companies in competition with other vendors under generally accepted commercial terms. In a similar manner, Vattenfall AB and its Group companies purchase products and services from state authorities and state companies at market prices and otherwise under generally accepted commercial terms. No significant share of the Vattenfall Group's net sales, purchasing or earnings is attributable to the Swedish state or any of its authorities or companies.

Disclosures of transactions with key persons in executive positions in the company are shown in Note 46 to the Consolidated accounts, Number of employees and personnel costs.

Disclosures of transactions with major associated companies in 2017 and associated receivables and liabilities as per 31 December 2017 are described below.

Kernkraftwerk Brokdorf GmbH & Co. oHG
This is a nuclear power plant from which Vattenfall purchases electricity. Purchases amounted to SEK -1,536 million (698), of which SEK -1,760 million pertains to refund of Nuclear Fuel tax. Operating revenue from the company amounted to SEK 0 million (0). Vattenfall's interest expense to the company amounted to SEK 23 million (22). Loan liabilities amounted to SEK 0 million (2,305).

GASAG Berliner Gaswerke AG
The company sells, distributes and stores natural gas in the Berlin area. Vattenfall received SEK 213 million (121) in operating revenue from the company, and purchases from the company totalled SEK 12 million (12). Trade liabilities amounted to SEK 98 million (56). Vattenfall's part of contingent liabilities of the company amounted to SEK 127 million (151).

Note 49 Events after the balance sheet date

The Swedish Radiation Safety Authority (SSM) has recommended that the Government grant a licence for a final repository for spent nuclear fuel in Forsmark. The Land and Environment Court approved the site of Forsmark, the encapsulation plant in Oskarshamn and the environmental impact assessment. The court has requested additional information from SKB regarding the copper canisters. This information will be sent directly to the Government, which is now responsible.

Note 50 Operations requiring permits

During the year Vattenfall conducted operations that require permits under national legislation in Sweden, Finland, Denmark, Germany, the Netherlands and the UK. Vattenfall AB conducts operations that require permits in accordance with the Swedish Environmental Code. These consist primarily of electricity and heat production plants that require permits and/or registration. Vattenfall's other operations requiring permits that make up a significant part of the business are conducted primarily by subsidiaries.

Note 51 Significant accounting policies applicable as from 1 January 2018

IFRS 9 – "Financial instruments"
IFRS 9 – "Financial instruments" replaces IAS 39 – "Financial Instruments: Recognition and Measurement". IFRS 9 includes new principles for classification and measurement of financial instruments, changed principles for impairment of credit losses, and new rules for hedge accounting.

IFRS 9 is applicable for Vattenfall as from 1 January 2018, and the following accounting policies replace some of the accounting policies in Vattenfall's 2017 Annual and Sustainability Report: Note 3 to the consolidated accounts, Accounting policies; Note 27 to the consolidated accounts, Trade receivables and other receivables; and Note 40 to the consolidated accounts, Financial instruments by category, offsetting of financial assets and liabilities, and financial instruments' effects on income.

Vattenfall has chosen to apply IFRS retrospectively, and recalculated amounts for 2017 will be presented in the 2018 financial statements. Adjustments of the carrying amount of financial assets and liabilities are thereby reported in the opening balance of retained earnings at 1 January 2017. Vattenfall has chosen to apply the policies for hedge accounting in IFRS 9, which are applied prospectively as from 1 January 2018.

Classification and measurement
Financial assets
The following principles replace the corresponding Financial assets section in Note 40 to the consolidated accounts, except for principles for the method of fair value measurement, which are still described in Note 40 to the consolidated accounts. Financial assets are classified in various categories based in part on the objective (the business model) of holding the financial asset, and in part on the financial instrument's contractual cash flows, in the event they consist only of principal amounts and interest. The classification is determined at the original point of acquisition. Settlement day accounting is applied for spot purchases and spot sales of financial assets.

Amortised cost
Financial assets (debt instruments) are classified in this category if they are held in a business model whose objective is to hold financial assets

in order to collect their contractual cash flows, and if the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. These instruments are measured at amortised cost, where the reported gross value is adjusted for expected credit losses. For Vattenfall this category includes the items Share in the Swedish Nuclear Waste Fund, Other non-current receivables, Trade receivables and other receivables, Advance payments paid, certain Short-term investments, and Cash and bank balances.

Fair value through profit or loss
This category includes all of Vattenfall's financial assets (debt instruments) that are not measured at amortised cost. This includes assets held for trading, which entails that the objective is that they will be sold in the near term, assets held for sale, and assets that Vattenfall is monitoring and measuring based on fair value. Debt instruments are also classified in this category if the contractual terms do not consist solely of payments of principal and interest. This category also includes Cash equivalents with terms shorter than three months, which Vattenfall monitors and measures based on their fair value. The category also includes certain Short-term investments with original terms in excess of three months.

Derivative assets are always measured at fair value through profit or loss, except for derivative instruments designed as hedge instruments in an effective hedge, where the principles for hedge accounting are used.

Vattenfall classifies holdings of equity instruments at fair value through profit or loss. Vattenfall has not applied the irrevocable option to measure equity instruments that are not held for trading at fair value through other comprehensive income.

The assets in this category are remeasured on a regular basis to fair value with changes in value reported in profit or loss.

Financial liabilities
IFRS 9 has not entailed any change in the reporting of financial liabilities for Vattenfall. For the policies regarding financial liabilities, see Note 40 to the consolidated accounts in Vattenfall's 2017 Annual and Sustainability Report.

Impairment
The following policies replace the sub-section in Note 3 to the consolidated accounts, Impairment of financial assets, and Note 27 to the consolidated accounts, Trade receivables and other receivables. Impairment of financial assets is based on models for expected credit losses.

For trade receivables that do not include a significant financing component, a simplified method is used, where calculation of the loss reserve is based on expected credit losses for the remaining term. A collective method is used where the receivables are grouped together based on e.g., the number of days past due including any past-due receivables, and a credit loss percentage is calculated for the respective intervals, where in the model Vattenfall has based its calculations on experience from historic loss levels for similar receivables while taking into account forward-looking macroeconomic conditions that may affect expected cash flows. For individual, significant receivables, an individual assessment may be made. Impairment of trade receivables is reported in operating expenses.

For other financial assets where the policies for impairment are applied, a loss reserve is reported that corresponds to 12 months' expected credit losses at initial recognition. If the credit risk increases significantly since initial recognition, a reserve corresponding to expected credit losses during the entire term is reported. Vattenfall presumes that the credit risk has not increased significantly if the instrument has a low credit risk on the balance sheet date, such as instruments with an investment grade rating. The credit risk is considered to have increased significantly if the counterparty's rating has been lowered to a lower rating than investment grade or, alternatively, if the counterparty already had a lower credit rating than investment grade at initial recognition and this rating was significantly lowered further. Expected credit losses are calculated by assessing the probability of default, the loss given default and the exposure at default.

Hedge accounting
IFRS 9 has not entailed any changed reporting of hedge conditions for Vattenfall. For the policies concerning hedge accounting, see Note 40 to the consolidated accounts in Vattenfall's 2017 Annual and Sustainability Report.

IFRS 15 – "Revenue from Contracts with Customers"
IFRS 15 – "Revenue from Contracts with Customers" is a new revenue recognition standard applicable as from 2018 that provides a single, principles-based model for all revenue recognition, regardless of the type of transaction or sector. IFRS 15 replaces all previously issued standards and interpretations that address revenue recognition, including IAS 11, IAS 18 and the related IFRICs 13, 15 and 18. The framework establishes principles about the nature, amount, timing and uncertainty for revenue and cash flow arising from an entity's contracts with customers.

The basic principle for revenue recognition in IFRS 15 is the transfer of control of the goods or services to the customer. Revenues may be accounted for either at one point in time or over time.

The core principle in IFRS 15 is that revenue should be recognised in a way that reflects the transfer of control of goods or services to the customers (i.e. when the customer obtains control) in an amount that reflects the consideration to which we expect to be entitled. In this aspect, control is defined as the ability to direct the use of and obtain substantially all of the remaining benefits from the asset included in the goods or services.

IFRS 15 introduces a five step model to be applied when recognizing revenue in accordance with the core principle. The five steps in the model are as follows:

- Step 1. Identify the contracts with the customer, which also includes an assessment of whether several contracts should be treated as a single contract.
- Step 2. Identify the performance obligations in the contract, which also includes identification of separate delivery terms in the contract.
- Step 3. Determine the transaction price, including additional guidance on the treatment of variable consideration.
- Step 4. Allocate the transaction price to the performance obligations in the contract, including allocation in the event of subsequent changes to the agreed consideration.
- Step 5. Recognise revenue when (or as) the entity satisfies a performance obligation, which may be either over time or at a certain point in time.

The standard also contains special rules concerning the recognition of costs related to the obtaining of contracts with customers, to the performance of the contracts.

The effects of implementing IFRS 15 in Vattenfall Group are explained in Note 3 to the Consolidated accounts, Accounting policies.

Parent Company Vattenfall AB

Condensed review of 2017
A condensed income statement and balance sheet for the Parent Company are presented below.

- Net sales amounted to SEK 31,276 million (29,752).
- Profit before appropriations and income taxes was SEK 6,580 million (-6,510).
- Profit was affected by capital gain of SEK 132 million upon liquidation of Vattenfall Energy Trading Sp.z.o.o and a small capital gain from the sale of a heating plant in Munksund. In addition, profit was affected by a reversal of liabilities to subsidiaries in the amount of SEK 4,493 million and by dividends received of SEK 230 million. Profit for the corresponding period a year ago was affected by an impairment loss of SEK 13,333 million for shares in subsidiaries and by dividends received of SEK 1,729 million.
- The balance sheet total was SEK 245,640 million (261,902).
- Investments during the period amounted to SEK 5,204 million (7,629), of which SEK 4,000 million (7,000) is related to a shareholder contribution to Vattenfall Vindkraft AB and SEK 288 million (0) is related to a new share issue in Vattenfall UK Sales Ltd.
- Cash and cash equivalents, and Short-term investments amounted to SEK 23,598 million (35,682).

Parent Company income statement

Amounts in SEK million, 1 January – 31 December	Note	2017	2016
Net sales	5, 6	31,276	29,752
Cost of products sold	6	-23,611	-23,999
Gross profit		**7,665**	**5,753**
Selling expenses		-743	-840
Administrative expenses		-1,610	-1,522
Research and development costs		-28	-36
Other operating income		791	561
Other operating expenses		-227	-286
Operating profit	7, 8, 15, 16	**5,848**	**3,630**
Result from participations in subsidiaries	9	4,855	-11,545
Result from participations in associated companies	10	–	-2
Result from other shares and participations		–	1
Other financial income	11	1,445	5,127
Other financial expenses	12	-5,568	-3,721
Profit before appropriations and income taxes		**6,580**	**-6,510**
Appropriations	13	1,037	1,466
Profit before income taxes		**7,617**	**-5,044**
Income taxes	14	-647	-1,480
Profit for the year		**6,970**	**-6,524**

Parent Company statement of comprehensive income

Amounts in SEK million, 1 January – 31 December	2017	2016
Profit for the year	6,970	-6,524
Total other comprehensive income	–	–
Total comprehensive income for the year	**6,970**	**-6,524**

Parent Company balance sheet

Amounts in SEK million	Note	31 December 2017	31 December 2016
Assets			
Non-current assets			
Intangible assets: non-current	17	185	174
Property, plant and equipment	18	4,277	4,151
Shares and participations	19	149,914	145,586
Deferred tax assets	14	363	329
Other non-current receivables	20	52,904	58,897
Total non-current assets		**207,643**	**209,137**
Current assets			
Inventories	21	221	255
Intangible assets: current		246	275
Current receivables	22	13,826	16,553
Current tax assets	14	106	–
Short-term investments	23	17,229	18,733
Cash and cash equivalents	24	6,369	16,949
Total current assets		**37,997**	**52,765**
Total assets		**245,640**	**261,902**
Equity, provisions and liabilities			
Equity			
Restricted equity			
Share capital (131,700,000 shares with a share quota value of SEK 50)		6,585	6,585
Revaluation reserve		37,989	37,989
Other reserves		1,322	1,316
Non-restricted equity			
Retained earnings		43,613	50,142
Profit for the year		6,970	-6,524
Total equity		**96,479**	**89,508**
Untaxed reserves	13	12,284	13,294
Provisions	25	5,194	5,308
Non-current liabilities			
Hybrid capital	26	19,500	19,101
Other interest-bearing liabilities	26	41,264	49,870
Other noninterest-bearing liabilities	27	9,689	13,099
Total non-current liabilities		**70,453**	**82,070**
Current liabilities			
Other interest-bearing liabilities	26	54,436	64,688
Current tax liabilities	14	–	520
Other noninterest-bearing liabilities	28	6,794	6,514
Total current liabilities		**61,230**	**71,722**
Total equity, provisions and liabilities		**245,640**	**261,902**

See also information on Collateral (Note 30), Contingent liabilities (Note 31) and Commitments under consortium agreements (Note 32), in the notes to the Parent Company accounts.

Parent Company cash flow statement

Amounts in SEK million, 1 January – 31 December	Note	2017	2016
Operating activities			
Profit before income taxes		7,617	-5,044
Reversal of depreciation, amortisation and impairment losses		513	13,851
Tax paid		-1,308	-539
Capital gains/losses, net		-132	-60
Other, incl. non-cash items	36	-4,727	-4,994
Funds from operations (FFO)		**1,963**	**3,214**
Changes in inventories		34	86
Changes in operating receivables		2,259	1,482
Changes in operating liabilities		-1,366	-3,934
Cash flow from changes in operating assets and operating liabilities		**927**	**-2,366**
Cash flow from operating activities		**2,890**	**848**
Investing activities			
Investments in subsidiaries		-4,289	-7,077
Investments in associated companies and other shares and participations		-66	-11
Other investments in non-current assets		-849	-541
Total investments		**-5,204**	**-7,629**
Divestments		358	88
Cash flow from investing activities		**-4,846**	**-7,541**
Cash flow before financing activities		**-1,956**	**-6,693**
Financing activities			
Changes in short-term investments		1,504	9,758
Loans raised		12,923	11,350
Amortisation of other debts		-31,262	-34,613
Effect of early termination of swaps related to financing activities		105	2,244
Amortisation received from subsidiaries		5,982	24,700
Amortisation received from associated companies		–	24
Dividend received from subsidiaries		230	1,729
Group contributions received/paid		1,894	-1,853
Cash flow from financing activities		**-8,624**	**13,339**
Cash flow for the year		**-10,580**	**6,646**
Cash and cash equivalents			
Cash and cash equivalents at start of year		16,949	10,303
Cash flow for the year		-10,580	6,646
Cash and cash equivalents at end of year		**6,369**	**16,949**

Parent Company statement of changes in equity

Amount in SEK million	Share capital	Revaluation reserve	Other reserves[1]	Non-restricted equity	Total
Balance brought forward 2016	6,585	37,989[2]	1,286	50,173	**96,033**
Fund for development costs	–	–	30[3]	-30[3]	**–**
Profit for the year	–	–	–	-6,524	**-6,524**
Balance carried forward 2016	**6,585**	**37,989**	**1,316**	**43,619**	**89,509**
Dividend paid to owners	–	–	–	–	**–**
Fund for development costs	–	–	6[3]	-6[3]	**–**
Profit for the year	–	–	–	6,970	**6,970**
Balance carried forward 2017	**6,585**	**37,989**	**1,322**	**50,583**	**96,479**

[1] Other reserves consist of Statutory reserve SEK 1,286 million (1,286) and Fund for development costs SEK 36 million (30).

[2] Pertains to the revaluation of shares in Vattenfall Eldistribution AB. This revaluation is a non-taxable item, and the book value before the revaluation was SEK 11 million.

[3] Pertains to the year's capitalised costs less depreciation according to plan for own development work that have been reserved in the Fund for development costs. The capitalised costs are considered to be tax-deductible once the assets they pertain to become operational and depreciation according to plan is made.

As of 31 December 2017 the registered share capital comprised 131,700,000 shares with a share quota value of SEK 50.

Notes to the Parent Company accounts

Amounts in SEK million unless indicated otherwise

Note 1 Company information

Vattenfall AB's 2017 Annual Report was approved in accordance with a decision by the Board of Directors on 21 March 2018. Vattenfall AB (publ) with corporate identity number 556036-2138, which is the Parent Company of the Vattenfall Group, is a limited liability company with its registered office in Solna, Sweden and with the address SE-169 92 Stockholm, Sweden. The balance sheet and income statement of the Parent Company included in Vattenfall's Annual and Sustainability Report will be submitted at the Annual General Meeting (AGM) on 25 April 2018.

Note 2 Proposed distribution of profits

The Annual General Meeting as at its disposal retained profits including the result for the year, totalling SEK 50,582,732,113. In accordance with the dividend policy adopted by the Annual General Meeting of Vattenfall AB, the Board of Directors and President propose, in view of the result for the year, that the profits to be distributed as follows:

To be distributed to the shareholder	2,000,000,000
To be carried forward	48,582,732,113
Total	**50,582,732,113**

Note 3 Accounting policies

General
The Parent Company's accounts are prepared in accordance with the Swedish Annual Accounts Act and recommendation RFR 2 – "Accounting for Legal Entities", issued by the Swedish Financial Reporting Board (RFR). RFR 2 entails that the Parent Company should apply all standards and interpretations issued by IASB and IFRIC as endorsed by the European Commission for application within the EU. This should be done as far as possible within the framework of the Swedish Annual Accounts Act by taking into consideration the relationship between accounting and taxation.

The changes in recommendation RFR 2 and in the Annual Accounts Act that apply as from 2017 are not considered to have a material impact on the Parent Company's financial statements.

The applied accounting policies are outlined in applicable parts of Note 3 to the consolidated accounts, Accounting policies, or in the respective notes for the Group, with the following addition for the Parent Company.

Depreciation and amortisation
As in the consolidated accounts, depreciation and amortisation are based on cost and are applied on a straight-line basis over the estimated useful life of the asset in question. In addition, certain accelerated depreciation/amortisation (the difference between depreciation/amortisation according to plan and depreciation/amortisation for tax purposes) in the Parent Company is reported under Appropriations and Untaxed reserves, respectively.

Financial instruments
The Parent Company applies the exemption rule for IAS 39 "Financial instruments", in accordance with RFR 2, which means that all financial instruments are reported in accordance with a method based on cost, in accordance with the Swedish Annual Accounts Act. Valuation is done at the lower of cost or market. Unrealised derivatives used to hedge exchange rate and price risks in underlying items are handled off the balance sheet until maturity.

A financial asset is derecognised from the balance sheet when the rights under the contract are realised, expire, or when the Parent Company no longer bears the risks and rewards associated with the asset. The same applies for a part of a financial asset. A financial liability is derecognised from the balance sheet when the obligation under the contract is fulfilled or is extinguished in some other manner. The same applies for a part of a financial liability.

The Parent Company applies hedge accounting for assets in a foreign currency effectively hedged by loans in a foreign currency. Effects of changes in exchange rates are therefore not recognised for loans raised for the financing of foreign subsidiaries, associated companies and joint arrangements. Nonmonetary assets acquired in a foreign currency are recognised at the exchange rate at the time of the acquisition.

Foreign currency
Assets and liabilities in foreign currencies that not applies hedge accounting for are recognised at the exchange rates of the balance sheet date.

Capitalised costs for own development work
For costs for own development work that are capitalised, a corresponding amount is transferred from unrestricted equity to the fund for development costs.

Income taxes
Tax legislation in Sweden allows companies to defer tax payments by making provisions to untaxed reserves. In the Parent Company, untaxed reserves are reported as a separate item on the balance sheet that includes deferred tax. In the Parent Company's income statement, provisions to untaxed reserves and dissolution of untaxed reserves are reported under the heading Appropriations.

Important estimations and assessments in the preparation of the financial statements
Preparation of the financial statements requires the company's executive management and Board of Directors to make estimations and assessments as well as to make assumptions that affect application of the accounting policies and the reported amounts of assets, liabilities, income and expenses. These estimations and assessments are based on historic experience and other factors that seem reasonable under current conditions. The results of these estimations and assessments are then used to establish the reported values of assets and liabilities that are not otherwise clearly documented from other sources. The final outcome may deviate from the results of these estimations and assessments. The estimations and assessments are revised on a regular basis. The effects of changes in estimations are reported in the period in which the changes were made if the changes affected this period only or in the period the changes were made and future periods if the changes affect both the current period and future periods. Important estimations and assessments are described further in Note 19 to the Parent Company, Shares and participations.

Significant accounting policies applicable as from 1 January 2018
Starting in 2018, no amended reporting standards or interpretations, apart from IFRS 9 – "Financial Instruments" and IFRS 15 – "Revenue from Contracts with Customers", are considered to have a material impact on the Parent Company's financial statements.

The following two amendments in RFR 2 will be implemented, and in the financial statements for 2018, figures for the comparison year 2017 will be recalculated as a result of the changed accounting policies.

IFRS 9 "Financial Instruments"
See Note 51 to the consolidated accounts, Significant accounting policies applicable as from 1 January 2018. The Group's application of IFRS 9 has no effect on the Parent Company's financial statements. This applies both for the opening balance of equity as well as for profit for 2017.

The Parent Company has applied the exemption rule for IAS 39 "Financial Instruments" provided by RFR 2 until year-end 2017. Starting in 2018 the company will no longer apply this exemption and will instead change over to reporting in accordance with IFRS 9. The combined effects for the Parent Company of implementation of IFRS 9 are:

- The effect on profit for the year 2017 is a decrease by SEK 139 million.
- The effect on opening equity as per 1 January 2017 is a decrease by SEK 2,102 million.

IFRS 15 – "Revenue from Contracts with Customers"
See Note 51 to the consolidated accounts, Significant accounting policies applicable as from 1 January 2018. There are no exceptions in RFR 2 with respect to IFRS 15. The areas that remain and are affected in the Parent Company are BA Customers & Solutions and BA Heat. The combined effects for the Parent Company of implementation of IFRS 15 are:

- The effect on 2017 is SEK 5 million lower revenue and a smaller effect on deferred tax.
- The effect on opening equity as per 1 January 2017 is a decrease by SEK 156 million.

Note 4 Exchange rates

See Note 6 to the consolidated accounts, Exchange rates.

Note 5 Net sales

	2017	2016
Sales of electricity and heat	33,002	31,003
Rendering of services and consulting assignments	1,527	1,581
Excise taxes (included in the above)	-3,253	-2,832
Total	**31,276**	**29,752**

Net sales per geographical area	2017	2016
Nordic	27,383	27,040
Germany	3,488	2,064
Netherlands	352	460
Other countries	53	188
Total	**31,276**	**29,752**

Net sales for products and services	2017	2016
Optimisation and Trading	13,721	12,283
Energy sales	13,824	12,827
Heat	2,301	2,338
Other	1,430	2,304
Total	**31,276**	**29,752**

Note 6 Intra Group transactions

Of the Parent Company's total income from sales and total purchase costs, transactions with subsidiaries account for 21% (18%) of sales and 40% (46%) of purchase costs.

Note 7 Depreciation and amortisation

Amortisation of intangible non-current assets and depreciation of property, plant and equipment in the income statement are broken down as follows:

	2017	2016
Cost of products sold	463	497
Selling expenses	33	1
Administrative expenses	–	1
Total	**496**	**499**

Amortisation of intangible non-current assets is included above in Cost of products sold with the amount of SEK 90 million (71).

Note 8 Impairment losses

No impairment was recognised of intangible non-current assets or of property, plant and equipment 2017 or 2016 financial years.

Note 9 Result from participations in subsidiaries

	2017	2016
Dividends	230	1,729
Impairment losses[1]	–	-13,335
Capital gains/losses on divestments	132	61
Reversed debt to subsidiaries	4,493	–
Total	**4,855**	**-11,545**

[1] See Note 19 to the Parent Company accounts, Shares and participations.

Note 10 Result from participations in associated companies

	2017	2016
Impairment of shares	–	-2
Total	**–**	**-2**

Note 11 Other financial income

	2017	2016
Interest income from subsidiaries	1,306	1,211
Other interest income	139	2,421
Foreign exchange gains and losses, net	–	1,495
Total	**1,445**	**5,127**

Note 12 Other financial expenses

	2017	2016
Interest expenses to subsidiaries	32	44
Other interest expenses	5,046	3,677
Foreign exchange gains and losses, net	490	–
Total	**5,568**	**3,721**

Note 13 Appropriations and untaxed reserves

Appropriations

	2017	2016
Group contributions paid	-2,774	-3,240
Group contributions received	2,800	3,118
Provision/Dissolution of untaxed reserves, net	1,011	1,588
Total	**1,037**	**1,466**

Untaxed reserves

	Balance brought forward	Provision (+)/ dissolution (-)	Balance carried forward
Accelerated depreciation	2,360	-88	**2,272**
Tax allocation reserves for 2011-2017 tax years	10,935	-923	**10,012**
Total	**13,295**	**-1,011**	**12,284**

Note 14 Income taxes

The reported tax income/tax expense is broken down as follows:

	2017	2016
Current tax	-681	-1,596
Deferred tax	34	116
Total	**-647**	**-1,480**

The tax effect of the standard interest on tax allocation reserves amounts to SEK 9 million (13).

The difference between the nominal Swedish tax rate and the effective tax rate is explained as follows:

	2017		2016	
	%		%	
Profit before tax		7,617		-5,044
Swedish income tax rate at 31 December	-22.0	-1,676	22.0	1,110
Current tax adjustment attributable to previous years	0.0	3	4.3	216
Non-taxable income	13.8	1,045	8.4	421
Impairment losses, non-deductible	0.0	–	-58.2	-2,933[1]
Other non-deductible expenses	-0.3	-19	-5.8	-294
Effective tax rate in Sweden	**-8.5**	**-647**	**-29.3**	**-1,480**

[1] Chiefly concerns non-deductible impairment losses for shares in Vattenfall GmbH and Vattenfall A/S.

Balance sheet reconciliation – Deferred tax:

	Balance brought forward		Changes via income statement		Balance carried forward	
	2017	2016	2017	2016	2017	2016
Non-current assets	2	2	–	–	2	2
Current assets	192	132	-90	60	102	192
Provisions	153	140	-27	11	126	151
Other non-current liabilities	-10	73	156	-81	146	-8
Current liabilities	-8	-135	-5	127	-13	-8
Total	**329**	**212**	**34**	**117**	**363**	**329**

Note 15 Leasing

Leasing expenses

Future payment commitments, as of 31 December 2017 for leasing contracts and rental contracts are broken down as follows:

	Operating leases
2018	72
2019-2022	626
2023 and beyond	–
Total	**698**

Leasing expenses for the year amounted to SEK 71 million (68).

Leasing revenues

In early 2017 the heating plant in Munksund was sold. As a result of this sale the Parent Company no longer receives any leasing revenue.

Note 16 Auditors' fees

Annual audit assignment:

	2017	2016
EY	7	6

Note 17 Intangible assets: non-current

	2017			
	Capitalised development costs	Concessions and similar rights	Renting and similar rights	Total
Cost				
Cost brought forward	342	847	68	**1,257**
Investments	8	90	–	**98**
Transfer from construction in progress	5	–	–	**5**
Divestments/disposals	–	-4	-68	**-72**
Reclassifications	1	-1	–	**–**
Accumulated cost carried forward	**356**	**932**	**–**	**1,288**
Amortisation according to plan				
Amortisation brought forward	-189	-710	–	**-899**
Amortisation for the year	-4	-86	–	**-90**
Divestments/disposals	–	2	–	**2**
Accumulated amortisation according to plan carried forward	**-193**	**-794**	**–**	**-987**
Impairment losses				
Impairment losses brought forward	-116	–	-68	**-184**
Divestments/disposals	–	–	68	**68**
Accumulated impairment losses carried forward	**-116**	**–**	**–**	**-116**
Residual value according to plan carried forward	**47**	**138**	**–**	**185**

	2016			
	Capitalised development costs	Concessions and similar rights	Renting and similar rights	Total
Cost				
Cost brought forward	304	1,056	68	**1,428**
Investments	37	40	–	**77**
Divestments/disposals	–	-248	–	**-248**
Reclassifications	1	-1	–	**–**
Accumulated cost carried forward	**342**	**847**	**68**	**1,257**
Amortisation according to plan				
Amortisation brought forward	-187	-882	–	**-1,069**
Amortisation for the year	-1	-70	–	**-71**
Divestments/disposals	–	241	–	**241**
Reclassifications	-1	1	–	**–**
Accumulated amortisation according to plan carried forward	**-189**	**-710**	**–**	**-899**
Impairment losses				
Impairment losses brought forward	-116	-1	-68	**-185**
Divestments/disposals	–	1	–	**1**
Accumulated impairment losses carried forward	**-116**	**–**	**-68**	**-184**
Residual value according to plan carried forward	**37**	**137**	**–**	**174**

At 31 December 2017 there were no contractual commitments for the acquisition of intangible non-current assets.

Note 18 Property, plant and equipment

	2017				
	Land and buildings	Plant and machinery and other technical installations	Equipment, tools, fixtures and fittings	Construction in progress	Total
Cost					
Cost brought forward	1,212	8,278	440	508	**10,438**
Investments	–	–	102	649	**751**
Transfer from construction in progress	52	231	5	-292	**-4**
Divestments/disposals	-84	-418	-39	–	**-541**
Accumulated cost carried forward	**1,180**	**8,091**	**508**	**865**	10,644
Depreciation according to plan					
Depreciation brought forward	-716	-5,271	-297	–	**-6,284**
Depreciation for the year	-27	-300	-79	–	**-406**
Divestments/disposals	48	240	38	–	**326**
Accumulated depreciation according to plan carried forward	**-695**	**-5,331**	**-338**	**–**	-6,364
Impairment losses					
Impairment losses brought forward	-1	-2	–	–	**-3**
Accumulated impairment losses carried forward	**-1**	**-2**	**–**	**–**	-3
Residual value according to plan carried forward	**484**	**2,758**	**170**	**865**	4,277
Accumulated accelerated depreciation	–	-2,272	–	–	**-2,272**
Carrying amount	**484**	**486**	**170**	**865**	2,005

	2016				
	Land and buildings	Plant and machinery and other technical installations	Equipment, tools, fixtures and fittings	Construction in progress	Total
Cost					
Cost brought forward	1,230	7,998	491	421	**10,140**
Investments	–	–	77	387	**464**
Transfer from construction in progress	3	294	3	-300	**–**
Divestments/disposals	-21	-14	-131	–	**-166**
Accumulated cost carried forward	**1,212**	**8,278**	**440**	**508**	10,438
Depreciation according to plan					
Depreciation brought forward	-707	-4,947	-361	–	**-6,015**
Depreciation for the year	-29	-334	-65	–	**-428**
Divestments/disposals	20	10	129	–	**159**
Accumulated depreciation according to plan carried forward	**-716**	**-5,271**	**-297**	**–**	-6,284
Impairment losses					
Impairment losses brought forward	-1	-2	–	–	**-3**
Accumulated impairment losses carried forward	**-1**	**-2**	**–**	**–**	-3
Residual value according to plan carried forward	**495**	**3,005**	**143**	**508**	4,151
Accumulated accelerated depreciation	–	-2,360	–	–	**-2,360**
Carrying amount	**495**	**645**	**143**	**508**	1,791

At 31 December 2017 there were no contractual commitments for the acquisition of property, plant and equipment.

Note 19 Shares and participations

Important estimations and assessments
Participations in subsidiaries are tested for impairment in accordance with the accounting policies described in Note 11 to the consolidated accounts, Impairment losses and reversed impairment losses. The recoverable amount for cash-generating units is determined by calculating the value in use or fair value less costs to sell. For these calculations, certain estimations must be made regarding future cash flows along with other adequate assumptions regarding the required rate of return, for example.

Financial information

	2017				2016			
	Participations in subsidiaries	Participations in associated companies	Other shares and participations	Total	Participations in subsidiaries	Participations in associated companies	Other shares and participations	Total
Balance brought forward	145,571	13	2	145,586	151,842	21	2	151,865
Investments	1	41	6	48	38	–	–	38
Shareholder contributions	4,000	19	–	4,019	7,039	11	–	7,050
New share issue	288	–	–	288	–	–	–	–
Divestments	-10	–	–	-10	-1	–	–	-1
Profit participations in associated companies	–	-17	–	-17	–	-17	–	-17
Liquidation	–	–	–	–	-14	–	–	-14
Impairment losses	–	–	–	–	-13,333[1]	-2	–	-13,335
Balance carried forward	**149,850**	**56**	**8**	**149,914**	**145,571**	**13**	**2**	**145,586**

[1] Pertains to impairment loss (not tax-deductible) for shares in Vattenfall GmbH and Vattenfall A/S.

For a breakdown of the Parent Company's shares and participations in subsidiaries, associated companies and other shares and participations, see Notes 20–22 to the consolidated accounts.

Note 20 Other non-current receivables

	2017				2016			
	Receivables from subsidiaries	Receivables from associated companies	Other receivables	Total	Receivables from subsidiaries	Receivables from associated companies	Other receivables	Total
Balance brought forward	58,162	–	735	**58,897**	82,860	24	740	**83,624**
New receivables	–	5	9	**14**	–	–	9	**9**
Payments received	-5,982	–	–	**-5,982**	-24,700	-24	–	**-24,724**
Foreign exchange gains/losses	–	–	17	**17**	2	–	23	**25**
Reclassification between non-current and current receivables	–	–	-42	**-42**	–	–	-37	**-37**
Balance carried forward	**52,180**	**5**	**719**	**52,904**	**58,162**	**–**	**735**	**58,897**

Note 21 Inventories

Accounting policies
The cost of inventories is calculated, depending on the type of inventory, either through application of the first-in, first-out (FIFO) method or through the application of a method based on average prices. Both methods include costs that arose on acquisition of the inventory assets.

Financial information
Inventories consist mainly of biofuels and fossil fuels for heat production.

Note 22 Current receivables

	2017	2016
Advance payments paid	116	116
Accounts receivable - trade	1,489	1,288
Receivables from subsidiaries	8,408	11,685
Other receivables	1,054	871
Prepaid expenses and accrued income	2,759	2,593
Total	**13,826**	**16,553**

Age analysis of current receivables
The collection period is normally 30 days.

	2017			2016		
	Receivables gross	Impaired receivables	Receivables net	Receivables gross	Impaired receivables	Receivables net
Accounts receivable – trade						
Not due	1,416	–	1,416	1,206	–	**1,206**
Past due 1–30 days	63	–	63	66	–	**66**
Past due 31–90 days	8	–	8	8	–	**8**
Past due >90 days	39	37	2	37	29	**8**
Total	**1,526**	**37**	**1,489**	**1,317**	**29**	**1,288**

Receivables from subsidiaries, Receivables from associated companies, and Other receivables include no receivables that are due for payment.

Note 23 Short-term investments

	2017	2016
Fixed-income investments	14,480	16,192
Margin calls, financing activities[1]	2,749	2,541
Total	**17,229**	**18,733**

[1] With respect to pledged assets, see Note 30 to the Parent Company accounts, Collateral.

Note 24 Cash and cash equivalents

	2017	2016
Cash and bank balances	3,766	6,222
Cash equivalents	2,603	10,727
Total	**6,369**	**16,949**

Note 25 Provisions

Accounting policies
The Parent Company's defined benefit pension plans are reported in accordance with the simplification rule. For the pension plans that are subject to the Act on Safeguarding of Pension Obligations, ("Tryggandelagen"), the calculation of future obligations to pay pensions is made in accordance with the stipulations of the Act. For other pension plans, the obligations are calculated on the basis of actuarial principles. See also Note 34 to the consolidated accounts, Pension provisions.

Financial information

	2017	2016
Pension provisions[1, 2]	4,160	4,165
Personnel-related provisions for non-pension purposes	487	613
Provisions for environmental measures/ undertakings	52	62
Other provisions	495	468
Total	**5,194**	**5,308**
[1] Of which, information registered by PRI	3,718	3,705
[2] Of which, covered by credit insurance with FPG/PRI	4,153	4,160

The Parent Company owns, together with Svafo Ågestaverket, a nuclear power station that previously produced district heating in southern Stockholm. Vattenfall is settling its obligation for dismantling, restoration and final storage through payments to the Swedish Nuclear Waste Fund. Vattenfall's payments to the Swedish Nuclear Waste Fund have been expensed in the Parent Company's accounts and are therefore not recognised as a liability for the obligation nor a balance with the Swedish Nuclear Waste Fund in the Parent Company. See also Note 22, Share in Nuclear Waste Fund and Note 35, Other interest-bearing provisions in the notes to the consolidated accounts.

Note 26 Other interest-bearing liabilities

	Non-current portion maturity 1–5 years		Non-current portion maturity >5 years		Total non-current portion		Current portion		Total	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Bond issues	22,575	29,978	15,920	19,257	**38,495**	**49,235**	5,494	–	**43,989**	**49,235**
Commercial paper	–	–	–	–	**–**	**–**	7,642	6,594	**7,642**	**6,594**
Liabilities to credit institutions	2,256	–	–	–	**2,256**	**–**	149	244	**2,405**	**244**
Liabilities to subsidiaries	513	635	–	–	**513**	**635**	37,537	53,889	**38,050**	**54,524**
Other liabilities (margin calls within financing activities)[1]	–	–	–	–	**–**	**–**	3,614	3,961	**3,614**	**3,961**
Total interest-bearing liabilities excluding Hybrid capital	**25,344**	**30,613**	**15,920**	**19,257**	**41,264**	**49,870**	**54,436**	**64,688**	**95,700**	**114,558**
Hybrid capital[2]	6,000	–	13,500	19,101	**19,500**	**19,101**	–	–	**19,500**	**19,101**
Total interest-bearing liabilities	**31,344**	**30,613**	**29,420**	**38,358**	**60,764**	**68,971**	**54,436**	**64,688**	**115,200**	**133,659**

[1] With respect to pledged assets, see Note 30 to the Parent Company accounts, Collateral.

[2] See Note 33 to the consolidated accounts, Interest-bearing liabilities and related financial derivatives.

Note 27 Other noninterest-bearing liabilities (non-current)

	2017	2016
Liabilities to subsidiaries	9,643	13,048
Other liabilities	46	51
Total	**9,689**	**13,099**

Liabilities to subsidiaries refer mainly to liabilities pertaining to Group contributions and to a non-current liability to Forsmarks Kraftgrupp AB for power charges. For this latter debt, in accordance with an agreement between the co-owners, no interest is payable on the debt. Of other liabilities, SEK 19 million (21) falls due after more than five years.

Note 28 Other noninterest-bearing liabilities (current)

	2017	2016
Advance payments from customers	–	13
Accounts payable - trade	651	749
Liabilities to subsidiaries	2,800	2,279
Other liabilities	419	208
Accrued expenses and deferred income	2,924	3,265
Total	**6,794**	**6,514**

Breakdown of accrued expenses and deferred income:

	2017	2016
Accrued personnel-related costs	306	287
Accrued interest expenses	1,760	1,871
Other accrued expenses	361	483
Deferred income and accrued expenses, electricity	483	620
Other deferred income	14	4
Total	**2,924**	**3,265**

Note 29 Financial instruments: Carrying amount and fair value

The categories for assets and liabilities below correspond to the categories described in Note 40 to the consolidated accounts, Financial instruments by category, offsetting of financial assets and liabilities, and financial instruments' effects on income. However, the Parent Company recognises all financial instruments based on cost in accordance with the Swedish Annual Accounts Act, that is, the categories do not determine how the instruments are measured or recognised. For disclosures on how fair value is calculated, see Note 3 to the consolidated accounts, Accounting policies. The column fair value is included for information purposes only.

	2017		2016	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets at fair value through profit or loss				
Derivative assets	—[1]	8,363	—[1]	10,777
Short-term investments	17,229	17,229	18,733	18,733
Cash equivalents	2,602	2,602	10,727	10,727
Total	**19,831**	**28,194**	**29,460**	**40,237**
Loans and receivables				
Share in the Swedish Nuclear Waste Fund[2]	–	273	–	283
Other non-current receivables	52,904	52,904	58,897	58,897
Trade receivables and other receivables	13,710	13,710	16,437	16,437
Advance payments paid	116	116	116	116
Cash and bank balances	3,767	3,767	6,222	6,222
Total	**70,497**	**70,770**	**81,672**	**81,955**
Available-for-sale financial assets				
Other shares and participations carried at cost	63	63	15	15
Total	**63**	**63**	**15**	**15**
Financial liabilities at fair value through profit or loss				
Derivative liabilities	—[1]	9,043	—[1]	10,196
Total	**–**	**9,043**	**–**	**10,196**
Other financial liabilities				
Hybrid capital	19,500	19,799	19,101	18,317
Other non-current interest-bearing liabilities	41,264	48,072	49,870	58,293
Other non-current noninterest-bearing liabilities	9,689	9,689	13,099	13,099
Current interest-bearing liabilities	54,436	54,568	64,688	64,692
Trade payables and other liabilities	6,794	6,794	6,501	6,501
Advance payments received	–	–	13	13
Total	**131,683**	**138,922**	**153,272**	**160,915**

[1] The carrying amount of derivatives is included in related items, that is in the hedged items or in the interim entries, with a net value of SEK -364 million (670).

[2] The carrying amount for the provision to the Swedish Nuclear Waste Fund for Ågestaverket is zero, since the provision is expensed directly. See also Note 22, Share in the Swedish Nuclear Waste Fund, Note 40, Financial instruments by category, offsetting of financial assets and liabilities, and financial instruments' effects on income and Note 44 Contingent liabilities in the notes to the consolidated accounts.

For assets and liabilities with a remaining maturity of less than three months (for example cash and bank balances, trade receivables and other receivables and trade payables and other payables) fair value is considered to be equal to the carrying amount.

Note 30 Collateral

Collateral and pledged assets (given)

	2017	2016
Shares pledged to the Swedish insurance company PRI Pensionsgaranti as security for credit insurance for pension obligations in Vattenfall's Swedish operations	7,295	7,295
Pledged security to counterparties (derivative market)[1]	2,749	2,541
Blocked bank funds as security for trading on Nord Pool, ICE and EEX	2,017	445
Blocked bank funds as security for guarantees issued by bank	1	1
Total	**12,062**	**10,282**

Collateral and pledged assets (received)

	2017	2016
Pledged security from counterparties (derivative market)[1]	3,312	3,961

[1] To fulfil the requirements for security in the derivative market, in its financial operations Vattenfall has pledged security to counterparties for the negative fair value of derivative positions. The counterparties are obligated to repay this security to Vattenfall in the event the negative fair value decreases. In a similar manner, counterparties of Vattenfall have pledged security to Vattenfall.

Note 31 Contingent liabilities

Guarantees pertaining to:

	2017	2016
Swedish Nuclear Waste Fund	15,448	15,448
Contractor guarantees provided by order of subsidiaries	10,038	12,376
Guarantees provided as collateral for the subsidiaries within Vattenfall Energy Trading's energy trading	5,760	10,779
Other contingent liabilities	11,497	11,918
Total	**42,743**	**50,521**

Swedish Nuclear Waste Fund

According to the Swedish Act (2006:647) on the Financing of Future Expenses for Nuclear Waste Management, a party that has a permit to conduct nuclear engineering activities, such as Ringhals AB and Forsmarks Kraftgrupp AB, is required to pledge security to the Swedish state as a guarantee that sufficient funds exist to cover the future costs of nuclear waste management. The security is pledged in the form of guarantee commitments to the owners of the nuclear power companies. In a decision made on 18 December 2014, the Swedish government set new guarantee amounts for the years 2015–2017. As security for the subsidiaries Forsmarks Kraftgrupp AB and Ringhals AB, the Parent Company Vattenfall AB has made guarantee commitments for a combined value of SEK 15,448 million (15,448). Two types of guarantees have been issued. The first guarantee – so-called Financing Security, totalling SEK 10,633 million – is intended to cover the requisite need for fees that have been decided on but not yet been paid in during the so-called earnings period (25 years of operation). The second guarantee – so-called Complementary Security, totalling SEK 4,815 million – pertains to potential future cost increases stemming from unforeseen events. The amounts for both of these types of security have been determined based on a probability-based risk analysis in which the former amount has been determined as such that there is a 50% probability that it, together with currently funded amounts (the median value), will provide full cost coverage for all waste produced to date. The latter amount consists essentially of the supplement that would be required if the corresponding probability was 90%. See also Note 22 to the consolidated accounts, Share in the Swedish Nuclear Waste Fund and Note 35 to the consolidated accounts, Other interest-bearing provisions.

Contract guarantees provided by order of subsidiaries

As collateral for contractors' obligations, Vattenfall AB has issued guarantees amounting to SEK 10,038 million (12,376), mainly attributable to obligations in the Wind Business Area, which decreased significantly in 2017.

Guarantees provided as collateral for subsidiaries in Vattenfall Energy Trading's energy trading

Vattenfall AB has issued guarantees with a total value of SEK 36,099 million (30,532) for energy trading conducted by the subsidiary Vattenfall Energy Trading. As per 31 December 2017 a total of SEK 5,760 million (10,779) of these guarantees had been utilised, which is included in the reported amount of contingent liabilities.

Other contingent liabilities

Other contingent liabilities SEK 11,497 million (11,918) consists mainly of guarantees that Vattenfall AB has issued for the Customers & Solutions and Wind Business Areas (for the latter, see Note 44 to the consolidated accounts, Contingent liabilities), and pension obligations, which amounted to SEK 1,294 million (unchanged).

In addition to the contingent liabilities mentioned above, Vattenfall has the following significant commitments

In 2009 Vattenfall AB, together with its subsidiary SKB (the Swedish Nuclear Fuel and Waste Management Company) and the other part-owners of that company, signed a long-term cooperation agreement with the Östhammar and Oskarshamn municipalities. The agreement covers the period 2010 to approximately 2025 and regulates development efforts in association with the implementation of the Swedish nuclear waste programme. Through development initiatives in areas such as training, enterprise and infrastructure, over time the parties will generate value-added worth SEK 1,500 million to SEK 2,000 million. The parties are to finance the development efforts in proportion to their ownership interests. The Vattenfall Group's ownership interest is 56%. Implementation of the efforts is being carried out across two periods: a period before all necessary permits have been received (Period 1), and a period during implementation and operation of the facilities (Period 2). In 2017 Vattenfall reported a provision of SEK 34 million (56) for its share of Period 1 activities.

Atomic liability in Sweden is strict and limited to 300 million Special Drawing Rights (SDRs) (rate 11.7268), corresponding to about SEK 3,517 million (3,669), which means that the companies that are owners of nuclear power plants are only liable for damage to the surrounding environment up to this amount.

Note 32 Commitments under consortium agreements

See Note 45 to the consolidated accounts, Commitments under consortium agreements.

Note 33 Average number of employees and personnel costs

Average number of employees

	2017			2016		
	Men	Women	Total	Men	Women	Total
Sweden	1,129	530	**1,659**	1,153	534	**1,687**

Personnel costs

	2017	2016
Salaries and other remuneration	1,199	1,148
Social security expenses	778	756
– of which pension costs[1]	322	256
Total	**1,977**	**1,904**

[1] SEK 15 million (24) of the pension costs are attributable to senior executives, i.e. the current and former Presidents and Executive Vice Presidents. The company's outstanding pension obligations attributable to these executives amounted to SEK 0 million (0).

None of the board members receive any pension benefits in connection with their board duties.

Salaries and other remuneration:

	2017			2016		
	Senior executives[1]	Other employees	Total	Senior executives[1]	Other employees	Total
Sweden	73	1,126	**1,199**	62	1,086	**1,148**

[1] Senior executives comprise board members and deputy board members as well as the President and the Executive vice president. The term also refers to former board members and deputy board members, former Presidents and Executive Vice Presidents, and other senior executives who are members of the Executive Group Management.

Total salaries and other remuneration to board members and Presidents include bonuses of SEK 0 million (0). For benefits to senior executives at Vattenfall AB, see Note 46 to the consolidated accounts, Number of employees and personnel costs.

Note 34 Gender distribution among senior executives

See Note 47 to the consolidated accounts, Gender distribution among senior executives.

Note 35 Related party disclosures

See Note 48 to the consolidated accounts, Related party disclosures.

Note 36 Specification of the cash flow statement

Other, including non-cash items

	2017	2016
Unrealised foreign exchange gains/losses	963	-190
Changes in interest receivables	68	-2,258
Changes in interest liabilities	132	205
Group contributions and received dividends	-257	-1,607
Changes in provisions	-113	473
Changes in appropriations	-1,010	-1,588
Reversed debt to subsidiaries	-4,493	0
Other	-17	-29
Total	**-4,727**	**-4,994**

Interest paid totalled SEK 4,946 million (3,516), and interest received totalled SEK 1,513 million (1,373).

Financial liabilities

	Current	Non-current
Financial liabilities at 1 January 2017	64,688	68,971
Cashflow	-10,938	-8,485
Non-cash effecting currency effects	717	264
Other non-cash flow effecting items	-31	14
Financial liabilities at 31 December 2017	**54,436**	**60,764**

Note 37 Events after the balance sheet date

See Note 49 to the consolidated accounts, Events after the balance sheet date.

Auditor's Report

To the general meeting of the shareholders of Vattenfall AB, corporate identity number 556036-2138

Report on the annual accounts and consolidated accounts
Opinions
We have audited the annual accounts and consolidated accounts of Vattenfall AB (publ) except for the corporate governance statement on pages 70–84 for the year 2017. The annual accounts and consolidated accounts of the company are included on pages 2–5, 8–11, 62–155 in this document.

In our opinion, the annual accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the parent company as of 31 December 2017 and its financial performance and cash flow for the year then ended in accordance with the Annual Accounts Act. The consolidated accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the group as of 31 December 2017 and their financial performance and cash flow for the year then ended in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, and the Annual Accounts Act. Our opinions do not cover the corporate governance statement on pages 70–84. The statutory administration report is consistent with the other parts of the annual accounts and consolidated accounts.

We therefore recommend that the general meeting of shareholders adopts the income statement and balance sheet for the parent company and the group.

Basis for Opinions
We conducted our audit in accordance with International Standards on Auditing (ISA) and generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the *Auditor's Responsibilities* section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

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

Key audit matters
Key audit matters of the audit are those matters that, in our professional judgment, were of most significance in our audit of the annual accounts and consolidated accounts of the current period. These matters were addressed in the context of our audit of, and in forming our opinion thereon, the annual accounts and consolidated accounts as a whole, but we do not provide a separate opinion on these matters.

Key audit matters, the Group
Valuation of Tangible and Intangible assets

Description of the matter	How this matter has been reflected in the audit
In the Group's statement of financial position as per December 31, 2017 reported value of fixed tangible and intangible assets amounts to SEK 245 234 million, which equals 60,1 % of the Group's total assets. Of the carrying value, SEK 13 324 million was goodwill. As described in note 11 the Company is making assessments throughout the year for any indication that an asset may have decreased in value. If there is an indication of this kind, the asset's recoverable amount is calculated in order to determine whether there is any need for impairment. For goodwill the recoverable amount is calculated at least annually or as soon as there is an indication that an asset has decreased in value. The Company has grouped its individual assets to the smallest group of assets that generates cash inflows that are largely independent from cash inflows from other assets. Recoverable amount is determined by calculating value in use and in note 11 the main assumptions, such as future market prices of electricity, fuel and CO_2 emission allowances used when calculating the value in use, are described. Further, in note 11 it is described that the calculation of value in use for cash-generating units with finite useful lives are based on forecasts of the useful life of the respective asset. Cash flow projections for cash-generating units with infinite useful lives are based on the business plan for the coming five years. Cash flows after the five year-period are calculated based on a growth factor of 0%. Future cash flows have been discounted to value in use using a discount rate as described in note 11. Goodwill impairment is never reversed. Impairment of other assets is reversed if there has been a significant and lasting change in the assumptions used to calculate the recoverable amount. In 2017, the company wrote-down a total of SEK 438 million in Business Area Wind. No write-down reversals have occurred during the year. Changes in assumptions may have a significant impact on the calculation of value in use which imply that the determination of assumptions is of significant importance to the calculation. Hence, we have assessed the valuation of tangible and intangible assets as a key audit matter in the audit.	In our audit we have evaluated the Company's process to develop and perform impairment tests. We have assessed how cash-generating units, based on established criteria's, are identified and compared to how the Company internally monitors its business. We have involved valuation specialists to assist us in the assessment of the Company's valuation and calculation methods, assessment of reasonableness in used assumptions, sensitivity analysis of changed assumptions, comparisons with historical results and the accuracy in previous forecasts. Each cash-generating units' discount rate and long-term growth have been evaluated through comparisons with other companies within the same industry and current market rates. We have also assessed whether the information disclosed is appropriate.

Provision for future expenses of nuclear power operations

Description of the matter	How this matter has been reflected in the audit
In the Group's statement of financial position as per December 31, 2017 the provisions for future expenses of nuclear power operations amounts to SEK 71 869 million. As described in note 35 the provisions pertain to future obligations for handling the decommissioning of the Company's nuclear power plants in Sweden and Germany as well as for handling nuclear waste. The provisions are based on forecasts for future expenditures that cover a period of up to 50 years. These forecasts include assessments with significant uncertainties, such as for expenditures for the disposal of nuclear fuel and radioactive waste as well as for the decommissioning of reactor plants. The estimated expenditures have thus been calculated based on a discount rate. Calculation of future expenses for decommissioning of nuclear power operations include a number of assumptions determined by the Company and changes in these assumptions may have a significant impact on the provision amount. Hence, we have assessed the recognition of provisions for future expenses of nuclear power operations as a key audit matter in the audit.	In our audit we have evaluated the Company's process to calculate the amount of the provisions. We have evaluated the Company's calculation methods, obtained assessments by third-parties, assessed the reasonableness in used assumptions and sensitivity analysis of changed assumptions and performed comparisons with historical results and the accuracy in previous forecasts. The reasonableness of used discount rate has been evaluated through comparisons with other companies within the same industry and current market rates. The mid-term and long-term expenses for handling nuclear waste in German nuclear power plants have been audited in the light of current legislation in Germany. We have also assessed whether the information disclosed is appropriate.

Key audit matters, the Parent company

Valuation of shares in subsidiaries

Description of the matter	How this matter has been reflected in the audit
In the Parent company's statement of financial position as per December 31, 2017 shares in subsidiaries amounts to SEK 149,850 million, which equals 61% of the Company's total assets. As described in the Parent company's note 19, which refers to the Group's note 11, the Company is making assessments throughout the year for any indication that shares in subsidiaries may have decreased in value. If there is an indication of this kind, the recoverable amount of shares in subsidiaries is calculated and if the recoverable amount is less than the carrying amount an impairment loss is recognized. Recoverable amount is the higher of value in use and fair value. Value in use is calculated as present value of future cash flows from the operations that are managed within the Parent company adjusted for current net debt as per December 31, 2017. The Company's valuation of shares in subsidiaries is based on the calculations of value in use. In the Group's note 11 the main assumptions such as future market prices of electricity, fuel and CO_2 emission allowances used when calculating the value in use are described. The future cash flow projections are discounted to present value based on the discount rates described in the Group's note 11. Impairment of shares in subsidiaries is reversed if there has been a significant and lasting change in the assumptions underlying the calculation of the recoverable amount. In 2017, the company did not record any impairment of shares in subsidiaries. No write-down reversals have occurred during the year. Changes in assumptions may have a significant impact on the calculation of value of shares in subsidiaries which imply that the determination of assumptions is of significant importance to the calculation. Hence, we have assessed the valuation of shares in subsidiaries as a key audit matter in the audit.	In our audit we have evaluated the Company's process to develop and perform impairment tests of shares in subsidiaries. We have involved valuation specialists to assist us in the assessment of the Company's valuation and calculation methods, assessment of reasonableness in used assumptions, sensitivity analysis of changed assumptions, comparisons with historical results and the accuracy in previous forecasts. The reasonableness of used discount rate and long-term growth have been evaluated through comparisons with other companies within the same industry and current market rates. Current net debt has been verified to obtained information from lenders. We have also assessed whether the information disclosed is appropriate.

Other Information than the annual accounts and consolidated accounts

This document also contains other information than the annual accounts and consolidated accounts and is found on pages 1, 6–7, 12–61 and 161–189. The Board of Directors and the Managing Director are responsible for this other information.

Our opinion on the annual accounts and consolidated accounts does not cover this other information and we do not express any form of assurance conclusion regarding this other information.

In connection with our audit of the annual accounts and consolidated accounts, our responsibility is to read the information identified above and consider whether the information is materially inconsistent with the annual accounts and consolidated accounts. In this procedure we also take into account our knowledge otherwise obtained in the audit and assess whether the information otherwise appears to be materially misstated.

If we, based on the work performed concerning this information, conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and the Managing Director

The Board of Directors and the Managing Director are responsible for the preparation of the annual accounts and consolidated accounts and that they give a fair presentation in accordance with the Annual Accounts Act and, concerning the consolidated accounts, in accordance with IFRS as adopted by the EU. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of annual accounts and consolidated accounts that are free from material misstatement, whether due to fraud or error.

In preparing the annual accounts and consolidated accounts, The Board of Directors and the Managing Director are responsible for the assessment of the company's and the group's ability to continue as a going concern. They disclose, as applicable, matters related to going concern and using the going concern basis of accounting. The going concern basis of accounting is however not applied if the Board of Directors and the Managing Director intends to liquidate the company, to cease operations, or has no realistic alternative but to do so.

The Audit Committee shall, without prejudice to the Board of Director's responsibilities and tasks in general, among other things oversee the company's financial reporting process.

Auditor's responsibility

Our objectives are to obtain reasonable assurance about whether the annual accounts and consolidated accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual accounts and consolidated accounts.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual accounts and consolidated accounts, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of the company's internal control relevant to our audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors and the Managing Director.
- Conclude on the appropriateness of the Board of Directors' and the Managing Director's use of the going concern basis of accounting in preparing the annual accounts and consolidated accounts. We also draw a conclusion, based on the audit evidence obtained, as to whether any material uncertainty exists related to events or conditions that may cast significant doubt on the company's and the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the annual accounts and consolidated accounts or, if such disclosures are inadequate, to modify our opinion about the annual accounts and consolidated accounts. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company and a group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the annual accounts and consolidated accounts, including the disclosures, and whether the annual accounts and consolidated accounts represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated accounts. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.

We must inform the Board of Directors of, among other matters, the planned scope and timing of the audit. We must also inform of significant audit findings during our audit, including any significant deficiencies in internal control that we identified.

We must also provide the Board of Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors, we determine those matters that were of most significance in the audit of the annual accounts and consolidated accounts, including the most important assessed risks for material misstatement, and are therefore the key audit matters. We describe these matters in the auditor's report unless law or regulation precludes disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in the auditor's report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Report on other legal and regulatory requirements

Opinions

In addition to our audit of the annual accounts and consolidated accounts, we have also audited the administration of the Board of Directors and the Managing Director of Vattenfall AB (publ) for the year 2017 and the proposed appropriations of the company's profit or loss.

We recommend to the general meeting of shareholders that the profit be appropriated in accordance with the proposal in the statutory administration report and that the members of the Board of Directors and the Managing Director be discharged from liability for the financial year.

Basis for Opinions

We conducted the audit in accordance with generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the Auditor's Responsibilities section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

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

Responsibilities of the Board of Directors and the Managing Director
The Board of Directors is responsible for the proposal for appropriations of the company's profit or loss. At the proposal of a dividend, this includes an assessment of whether the dividend is justifiable considering the requirements which the company's and the group's type of operations, size and risks place on the size of the parent company's and the group's equity, consolidation requirements, liquidity and position in general.

The Board of Directors is responsible for the company's organization and the administration of the company's affairs. This includes among other things continuous assessment of the company's and the group's financial situation and ensuring that the company's organization is designed so that the accounting, management of assets and the company's financial affairs otherwise are controlled in a reassuring manner. The Managing Director shall manage the ongoing administration according to the Board of Directors' guidelines and instructions and among other matters take measures that are necessary to fulfill the company's accounting in accordance with law and handle the management of assets in a reassuring manner.

Auditor's responsibility
Our objective concerning the audit of the administration, and thereby our opinion about discharge from liability, is to obtain audit evidence to assess with a reasonable degree of assurance whether any member of the Board of Directors or the Managing Director in any material respect:

- has undertaken any action or been guilty of any omission which can give rise to liability to the company, or
- in any other way has acted in contravention of the Companies Act, the Annual Accounts Act or the Articles of Association.

Our objective concerning the audit of the proposed appropriations of the company's profit or loss, and thereby our opinion about this, is to assess with reasonable degree of assurance whether the proposal is in accordance with the Companies Act.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted auditing standards in Sweden will always detect actions or omissions that can give rise to liability to the company, or that the proposed appropriations of the company's profit or loss are not in accordance with the Companies Act.

As part of an audit in accordance with generally accepted auditing standards in Sweden, we exercise professional judgment and maintain professional scepticism throughout the audit. The examination of the administration and the proposed appropriations of the company's profit or loss is based primarily on the audit of the accounts. Additional audit procedures performed are based on our professional judgment with starting point in risk and materiality. This means that we focus the examination on such actions, areas and relationships that are material for the operations and where deviations and violations would have particular importance for the company's situation. We examine and test decisions undertaken, support for decisions, actions taken and other circumstances that are relevant to our opinion concerning discharge from liability. As a basis for our opinion on the Board of Directors' proposed appropriations of the company's profit or loss we examined the Board of Directors' reasoned statement and a selection of supporting evidence in order to be able to assess whether the proposal is in accordance with the Companies Act.

The auditor's examination of the corporate governance statement

The Board of Directors is responsible for that the corporate governance statement on pages 70–84 has been prepared in accordance with "The State's Ownership Policy and guidelines for companies with state ownership" ("the Ownership Policy").

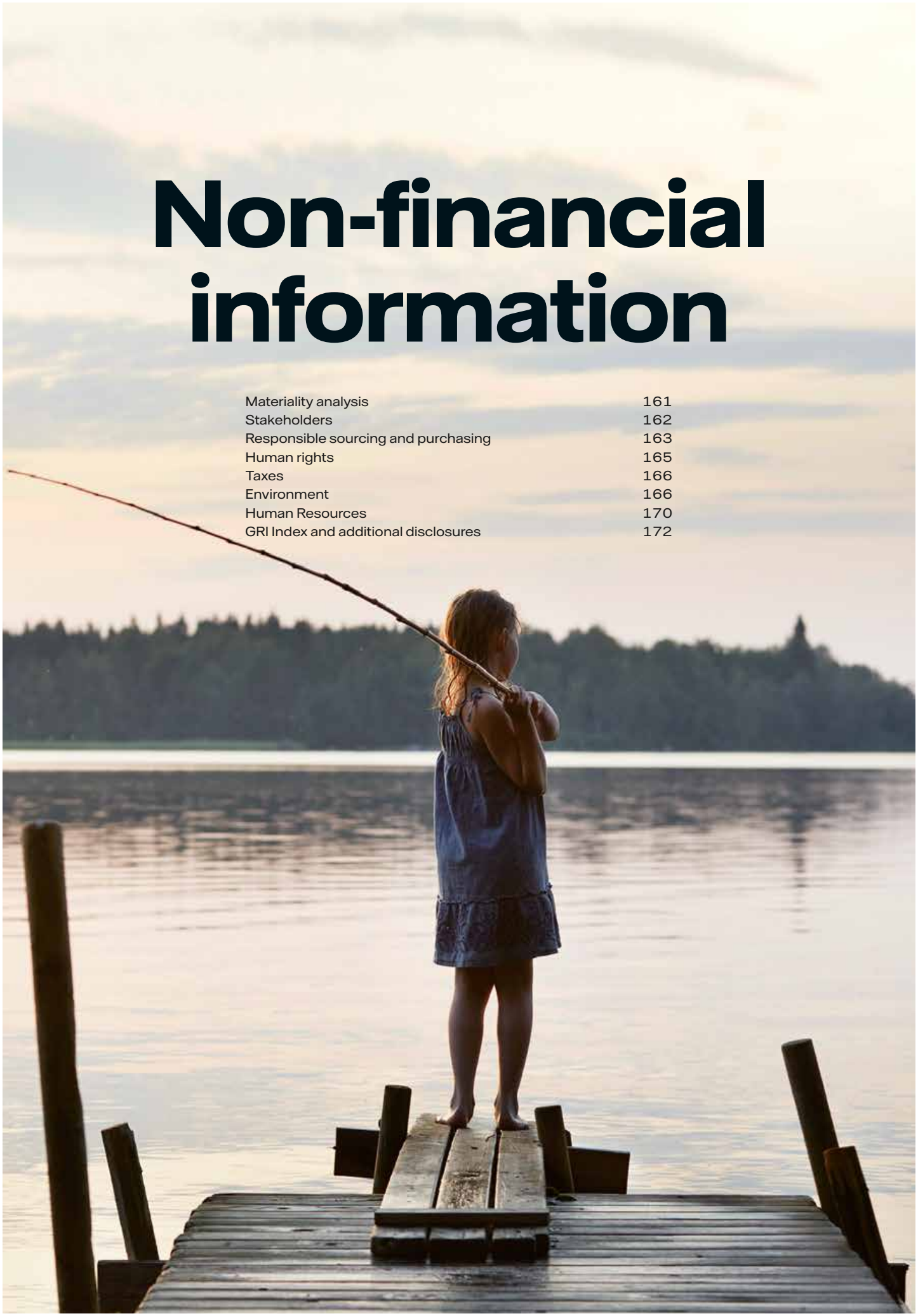
Our examination of the corporate governance statement is conducted in accordance with FAR´s auditing standard RevU 16 The auditor´s examination of the corporate governance statement. This means that our examination of the corporate governance statement is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinions.

A corporate governance statement has been prepared. Disclosures in accordance with chapter 6 section 6 the second paragraph points 2–6 of the Annual Accounts Act and chapter 7 section 31 the second paragraph the same law are consistent with the other parts of the annual accounts and consolidated accounts and are in accordance with the Annual Accounts Act.

Stockholm, 21 March 2018
Ernst & Young AB

Staffan Landén
Authorized Public Accountant

Non-financial information



The new purpose we embraced in 2017, to Power Climate Smarter Living, applies not only for us, but for all of our stakeholders – from our suppliers to our customers and the communities we work in. The Strategy and Operating Segment sections describe how we implement this in our businesses, and the following sections provide additional details and supporting context.

Materiality analysis

In 2016 we updated our materiality analysis, engaging with nearly 1,200 stakeholders across all our markets to ensure we have a thorough understanding of the expectations our stakeholders have on us. In general our stakeholders confirmed that Vattenfall's strategic direction and sustainability focus areas are in line with their expectations, but that they also expect to see reporting of our progress on the achievement of clear milestones.

Although we did not update our materiality analysis in 2017, the many contacts and dialogues we have had with our various stakeholders indicate that last year's results remain valid. We must continue to expand our renewable energy portfolio and accelerate our journey to a fossil-free future, and we must do so while taking great care to work closely with local communities and partners to maximise positive social and environmental impacts, and to minimise any negative impacts.

We will update our materiality analysis in 2018 to ensure we have a good understanding of our stakeholders' expectations and how they may be evolving.

Materiality analysis - most important aspects

Focus areas for progress

These aspects are crucial for Vattenfall to manage in order to ensure future value creation and profitable growth of the business.

Lead with responsibility

Vattenfall is currently managing these important aspects, but must stay committed to continuously improving performance with respect to internal and external stakeholders' expectations.

Ensure compliance

Vattenfall's management of these complex and challenging aspects directly impacts stakeholders' trust in the organisation and Vattenfall's operations, and we need to address all of these matters in a systematic and fundamental manner.

Focus areas for progress

- Reduce carbon footprint
- Decrease use of fossil fuels
- Increase investments in sustainability
  - Increase renewables
  - **Invest in innovation**[1]
  - Invest in sustainable customer solutions
- **Be more open, transparent, and improve our cooperation**[1]
- Manage nuclear waste

Lead with responsibility

- Secure affordable energy supply
- Minimise emissions to air, water and land
- Ensure occupational health and well-being
- Increase employee engagement
- Increase competence development

Ensure compliance

- **Respect human rights**[1]
- Protect nature and species, incl. biodiversity and water
- **Increase our engagement with local communities**[1]
- Strive for responsible sourcing
- Ensure fair and ethical business practices, incl. anti-corruption
- Ensure responsible divestments and investments

Critical importance

High importance

[1] Emphasised more heavily than in previous years.

Stakeholders

Active dialogue with our stakeholders

As an employer we influence the mental and physical health as well as the economic livelihood of our employees and the communities we work in. As a provider of electricity, heat, gas, and associated products and services, Vattenfall has a fundamental and direct impact on millions of people's lives. Moreover, as a purchaser of fuels, goods, and services from around the world, we have indirect social and economic impacts through our suppliers on even more people and local communities. We also have a global impact through the fossil fuels that are used in our electricity and heat production, as these lead to greenhouse gas emissions that are contributing to climate change, which in turn is affecting the entire Earth. We are constantly striving to better understand and manage these impacts – maximising the positive effects and minimising the negative ones – and we view dialogue with our stakeholders as crucial to our success in this regard.

As a company with both local and global impacts, we have myriad stakeholders. They include employees at our power plants, families that are kept warm by the heat we produce, and investors who help finance our operations. They are our owner, authorities and city partners we work with to set climate ambitions, our customers and industrial partners with and for whom we develop new solutions, the NGOs that help us address critical environmental and social issues in our value chain, and many more. With such a diverse range of stakeholders it is important that we are engaged in a constant dialogue with everyone, in order to make the best decisions possible.

The Vattenfall Project Management Model, an obligatory tool used across the Group, ensures that the various local interests are taken into account and addressed in our projects. Our dialogues take many other forms as well, including attitude surveys, direct customer satisfaction feedback, and many direct lines of communication with people throughout our organisation.

Feedback

As mentioned earlier, our dialogues have generally confirmed the importance of the issues raised in the materiality analysis. The importance of reducing our carbon footprint is paramount for many stakeholders, and customers in particular are increasingly asking that we be flexible, innovative, and collaborate with them to provide solutions to help them reduce their carbon footprints as well. Our engagement has prompted feedback on the dialogues themselves: stakeholders including customers, municipal administrations, suppliers, NGOs, and more, have all stressed the importance of collaboration – i.e. dialogue – rather than siloed interaction only.

We have not yet met all of our stakeholders' expectations, and perhaps may never do so, but we will continue our work on ensuring that we have the information required to make the best decisions possible. We are moving away from fossil fuels, but not fast enough for some stakeholders. We are working to improve human rights conditions throughout our supply chain, but not punishing infractions decisively enough for other stakeholders. In general, however, we are meeting stakeholders' expectations. We have highlighted here just a few examples of how we are engaging with stakeholders, listening to what they have to say, and taking action to address their feedback.

Stakeholders' views

Jeanette Van der Linden
CEO of Van Amerongen

Van Amerongen Administration B.V. is an organisation dedicated to helping people experiencing financial difficulties by directly managing their finances to ensure that they can meet their monetary obligations for critical services like rent, heat, and electricity. Following a successful pilot project with Van Amerongen and others, Nuon introduced Nuon Verlicht ("Nuon Enlightens"), a service through which customers who have outstanding debts and are under judicial rulings can get electricity and gas through financial administrators, without being required to pay a security deposit and at a discounted rate.

"In the Netherlands more than 300,000 people are under judicial rulings because they have outstanding debts, and every year some 100,000 people have their electricity and gas service discontinued as a result," Van der Linden explains. "And because of these outstanding debts they no longer qualify for a new energy contract unless they pay a deposit. But it is precisely people in such a situation who do not have the money to pay a deposit. This creates a downward spiral in which they are literally left out in the cold. To solve the problem, we needed a reliable, trustworthy partner who was willing to acknowledge the gravity of the situation and think creatively about solutions."

"Through its willingness to look beyond its existing offerings and credit structure, Nuon was able to help us come up with a win-win scenario, which means not only keeping the heat and lights on for more families, but also creating low-risk customers for Nuon. Nuon understands that we are helping people in a tough situation for whom financial surprises, like an unexpectedly high power bill at the end of the year, can have a devastating negative impact. They are a reliable partner whom we can reach out to if necessary."

Niels Janssen
Finance Director Netherlands at Equinix

Equinix is a US-based global leader in data centre operations and data communications. They have several major data centres in the Netherlands with an energy contract that was set to expire and were looking for an electricity supplier that could meet their stringent requirements.

"Power supply is of crucial importance for data centres, so in our search for an electricity supplier we were looking for a reliable and transparent partner with whom we felt we could have an open dialogue to address our concerns," says Janssen. "Further, it was important that our partner demonstrate a level of understanding and willingness to be flexible to find solutions to tricky issues. Nuon has proven to be both a reliable supplier of electricity and a reliable dialogue partner, which made us confident that we could collaborate productively to solve future challenges. As a market leader in data centres, we recognise sustainability as part of our shared responsibility as a business, and we expect our partners to have a similar mindset. We appreciated Nuon's commitment to helping us find solutions to achieve our goals and the transparent manner in which the solutions were proposed. Moving forward, we are confident that our relationship will enable both parties to achieve more as partners than what would be possible individually."

Björn Uhlin
Head of Investment Grade Corporate Debt Origination

SEB is one of Sweden's largest banks and also one of the country's largest sources of funding for sustainable companies and green bonds. To continue driving the transition to a sustainable economy, SEB is looking for leading companies to work with.

"Clearly for SEB, as for Vattenfall, sustainability is imperative. Like Vattenfall, SEB sees the transformation to a low-carbon energy system as a critical enabler of a sustainable society," says Uhlin. "We want to be a facilitator between asset owners and the companies driving the transformation, and in this respect Vattenfall is a very attractive partner. We have worked with Vattenfall on sustainability issues for years now, and we are very supportive of Vattenfall's long-term strategic goals and its vision for the future. But focus must not be solely on long-term targets – it is paramount that Vattenfall works toward concrete, intermediate targets that show progress and accountability. We believe Vattenfall will succeed. The things we see Vattenfall accomplish, and the work we do to support Vattenfall, have ripple effects that extend to our other partners and clients as well, creating a virtuous cycle of sustainability improvements."

Responsible sourcing and purchasing

As part of Vattenfall's ambition to act sustainably and responsibly across the value chain, we are continuing our work on improving our suppliers' sustainability performance. Through our supplier engagement strategy and sustainability assessments, we are striving to increase our influence in the supply chain and strengthen relationships with our suppliers. For certain market segments, such as our Wind business in particular, partnerships and cooperation with suppliers on sustainability-related challenges will enable significant risk mitigation, long-term cost reductions, and increased profitability.

Diverse supplier base

Vattenfall's Code of Conduct governs the way we communicate and work with our suppliers. Our Code of Conduct for Suppliers (CoCfS) defines the company's requirements and expectations for suppliers with respect to responsible sourcing and purchasing, namely, proper management of human rights and labour rights, indigenous people's rights, working conditions, the environment, business integrity, anti-corruption, conflicts of interest, competition law, protection of intellectual property rights and confidential information, and information on how to use the whistleblowing function.

Vattenfall purchases a wide range of goods, services and fuels, with varying risk profiles and legal and sustainability requirements. Purchasing and sourcing are conducted primarily in four streams: goods and services, commodity fuels (coal, biomass, gas and oil), directly sourced heat fuels, and nuclear fuel. As a consequence, implementation of our CoCfS varies. Regardless, we ensure that contracts include either our CoCfS, an ethics clause that includes the ten principles of the UN Global Compact, alignment with relevant industry initiatives such as Bettercoal or the Sustainable Biomass Partnership, or some combination of any of these.

Developments in 2017

Particular focus was directed to improving Vattenfall's sourcing and purchasing methodologies, increasing internal awareness, and updating methods and documents. Due to the ongoing outsourcing of certain parts of procurement, we are mapping all processes to ensure that the relevant existing sustainability checks are integrated smoothly into future processes. Vattenfall is working continuously to increase its knowledge about risks and impacts further along the supply chain.

Internal sustainability specialists coach, train, and increase awareness and knowledge about sustainability in the sourcing and procurement organisations. This is essential as Vattenfall's risk exposure increases in pace with our efforts to establish business relationships in new supplier markets and high-risk countries. Focus areas for training included the new Code of Conduct for Suppliers, human rights (based on our 2016 impact screening), and knowledge about specific high-risk countries. About 300 employees completed training in 2017.

We are convinced that stakeholder dialogues need to be deepened, and towards this end we intensified our dialogue with NGOs, which continues to be a good way for identifying and mitigating social and environmental risks.

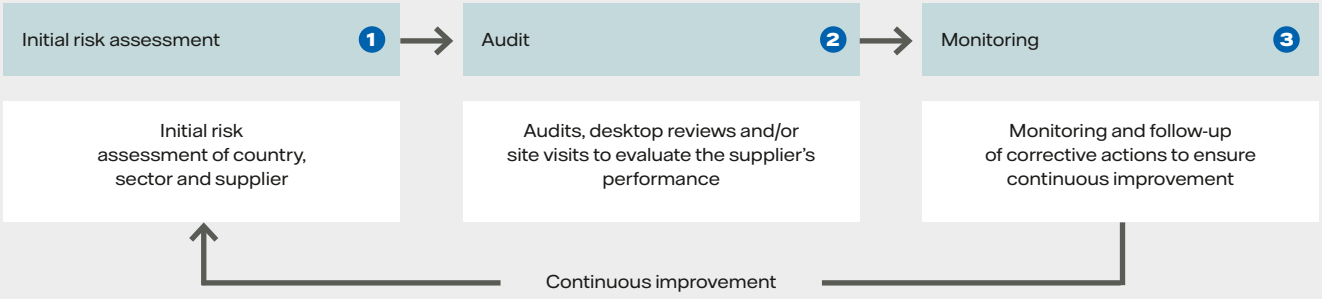
Key achievements

- Developed and implemented new types of reviews for different categories of suppliers in the supplier base, leading to a better understanding of our strategic and main suppliers
- Strengthened our due diligence process, in particular for suppliers in high-risk countries
- Moved beyond auditing to more direct engagement with our suppliers. In coal sourcing, for example, we developed engagement strategies on a supplier-by-supplier basis in which we engage directly with the companies in our due diligence process, inform them of the outcomes, and cooperate with them in our work on driving continuous improvement. For example:
  - In Colombia we performed a human rights risk assessment, including a three-week country visit (see page 165 for more information). Since this visit we have maintained regular contact with the companies and have discussed the findings of our report as well as further actions that can be taken for continuous improvements
- Increased transparency of our sourcing and purchasing activities. We now provide much more information on our website about our sourcing of coal, biomass and uranium as well as our due diligence processes, more publications on our collaborations with various stakeholders, and press releases on relevant matters, such as a newly signed uranium sourcing contract

Activities planned for 2018:

- Improve internal governance by clarifying roles and responsibilities in the sustainable procurement process. Focus on more accurate measurement of new and existing KPIs and better reporting through new IT tools
- Development of training material on sustainability and sustainable procurement
- Switch to a new supplier database for goods and services in order to reduce and optimise our supplier base and improve supplier management
- Further increase the share of suppliers that have undergone sustainability assessments
- Increase audits and engagement around identified risk issues
- Perform a human rights assessment in Russia covering primarily coal, nuclear power and biomass
- Install a Responsible Procurement Board with focus on strategic issues

Implementation process for Vattenfall's Code of Conduct for Suppliers



Purchasing categories
Vattenfall's sourcing and purchasing activities are conducted in four streams: goods and services, commodity fuels (coal, biomass, gas and oil), directly sourced heat fuels, and nuclear fuel. Vattenfall took several steps to improve and strengthen its sourcing and purchasing processes in 2017. An overview of the current state of our activities in each of the four streams is detailed below.

Goods and services

- The main sourcing countries are Sweden, Germany and the Netherlands, with an increasing share of suppliers in Asia
- Significant risks have been identified in work environment-related areas, such as unpermissible overtime practices with respect to suppliers' employees, including overtime in excess of legal limits and unpaid overtime, especially among Asian suppliers. Focus going forward will be on establishing overtime guidelines to eliminate these unpermissible practices
- Risks are being addressed with special attention to deviations and following up corrective action plans
- Our suppliers in high-risk countries have undergone sustainability assessments that are being used as documentation in tendering processes and for preparing audits
- New suppliers from high-risk countries are assessed via third-party site audits. All suppliers with total volume of more than SEK 3,000 are subject to sanction list screening (to the extent permitted by Swedish law). In 2017, no serious violations were identified at suppliers with whom we have signed contracts
- Following the successful start-up of annual Share & Learn sessions on sustainability with our largest strategic suppliers last year, we continued with these

Number of suppliers: **~25,000**
Share of total sourcing & purchasing spend: **~75%**
Number of suppliers representing 80% of spend: **~675**
Share of new suppliers that have undergone social/environmental assessments: **~70%**
Share of new suppliers from high-risk countries that have undergone social/environmental assessments: **~60%**

Commodity fuels

- Primary fuels include coal and biomass. Purchases of gas and oil are limited
- The main sourcing countries are Russia (62%), Poland (14%) and Colombia (8%) for coal, and Estonia and Latvia for biomass
- The scope of sustainability assessments was not only broadened but also deepened
  - We performed a human rights assessment of coal mining in Colombia (see following page) and introduced three new criteria for our Colombian suppliers to remedy in response to concerns raised by external stakeholders
  - Three of our suppliers went through the Bettercoal assessment process (two in Russia and one in the USA). The next step will be for them to begin a correction action plan. One of our sustainability experts participated in one of these assessments, allowing us to get closer to our suppliers and gain a better understanding their situation, and also to exert additional pressure
- We engaged external stakeholders both directly and through Bettercoal. Examples include:
  - Meetings with stakeholder organisations such as PAX, Forum Syd, Civil Right Defenders
  - Meetings with government representatives, including the Dutch and Swedish Ministries of Foreign Affairs, Colombia's Minister of Mining, human rights advisors to the President of Colombia, and the Swedish, Dutch, and German embassies in Colombia
  - Meetings throughout the year with various mining companies, including Drummond, CNR, Prodeco and Glencore, on our criteria for Colombian coal
  - In Russia we met with representatives of the Shor and the Teleuts indigenous people to gain a better understanding of how they are being impacted by coal mining

Number of suppliers: **~25**
Share of total sourcing & purchasing spend: **~15%**
Number of suppliers representing 80% of spend: **~5**
Share of new suppliers that have undergone social/environmental assessments: **100%**
Share of new suppliers from high-risk countries that have undergone social/environmental assessments: **No new suppliers from high risk countries**

Heat fuels

- Primary fuels include biomass and waste. Purchases of peat are limited
- Approximately 85% of heat fuels are sourced locally from the respective countries of operation (99% local in Germany); no new suppliers from high-risk countries to Sweden or Germany in 2017
- Continued integrating sustainability aspects in purchasing activities, especially human rights aspects
- Developed a holistic view of the supply chain view with regard to human rights and environment
- The new Code of Conduct for Suppliers is implemented in all new contracts and contract renewals
- Performed screening audits of all new suppliers in Germany, including desktop assessments and/or site visits
- Performed an audit of a Polish biomass supplier as part of efforts to secure new suppliers of sustainable biomass
- Audits of biomass suppliers in 2016 included remarks about truck overloading and personal protection equipment/health & safety awareness. Focus and management attention to these issues led to significant improvements in 2017

Number of suppliers: **~115**
Share of total sourcing & purchasing spend: **~5%**
Number of suppliers representing 80% of spend: **~30**
Share of new suppliers that have undergone social/environmental assessments: **~30%**
Share of new suppliers from high-risk countries that have undergone social/environmental assessments: **No new suppliers from high risk countries**

Nuclear fuel

- Uranium supplies are, over time, equally spread among Namibia, Canada, Australia, Kazakhstan and Russia. All uranium suppliers are regularly audited (every 3–6 years) and are continuously assessed if deviations or other events are reported or discovered during the contract period
- Screening and approval of all nuclear fuel suppliers that made deliveries in 2017 were performed prior to delivery
- Introduced updated audit procedures that further integrate human rights issues
- Management systems were generally at a high standard at nuclear fuel production facilities. Key findings are normally related to documentation management and use of personal protection equipment. All findings are being followed up by audit teams from Vattenfall
- Even in high-risk countries, we experienced transparency and access to all facilities included in our audit programmes

Number of suppliers: **~10**
Share of total sourcing & purchasing spend: **~5%**
Number of suppliers representing 80% of spend: **~5**
Share of new suppliers that have undergone social/environmental assessments: **No new suppliers**
Share of new suppliers from high-risk countries that have undergone social/environmental assessments: **No new suppliers from high risk countries**

Human rights

Our commitment
At Vattenfall we acknowledge that we have a responsibility to respect all internationally recognised human rights and that we are in a position to make a positive impact on human rights issues. We base our work on the UN's Global Compact, the International Labor Organization's (ILO) eight fundamental conventions, the OECD's guidelines for Multinational Enterprises, and the UN's Guiding Principles for Business and Human Rights. Our commitment to respecting human rights is explicitly stated in our Code of Conduct, our Code of Conduct for Suppliers, and in our statement on slavery and human rights in accordance with the UK Modern Slavery Act.

Vattenfall's Code of Conduct defines how we are to act with integrity within the company in the course of our business. A whistleblowing function is in place for employees to report any suspected violations of this Code.

We strive to work with others who are committed to doing business in an ethically sound manner. Our external Code of Conduct for Suppliers (CoCfS) defines the company's basic requirements and expectations for suppliers with respect to responsible sourcing and purchasing. This includes requiring that our suppliers agree with the ten principles laid out in the UN Global Compact. The CoCfS was updated in 2017 and explicitly addresses modern slavery and human trafficking. Embedded in the CoCfS are specific policies regarding community engagement and development, child labour and young workers, modern slavery and forced labour, working hours, wages and benefits, health and safety, freedom of association and collective bargaining, non-discrimination, protection of third-party rights, and information security. Our suppliers shall respect the rights of indigenous and tribal peoples and their social, cultural, environmental, and economic interests, including their connection with lands and other natural resources.

Vattenfall conducts its operations primarily in Northwest Europe (Sweden and the other Nordic countries, Germany, the Netherlands, and the UK). All of these countries have confirmed that they adhere to the ILO's eight fundamental conventions.

At Vattenfall we strive to conduct due diligence by regularly and systematically identifying and assessing human rights, environmental and business ethics–related risks and impacts in our value chain, and to use this information to avoid, mitigate or remedy the impacts.

Human rights impact and risk screening and action plan for mitigation
We have performed screenings of human rights impacts and risks across our value chain together with an independent third party. The latest screening showed that the salient risks that we contribute to or are linked to exist in our supply chain in high-risk countries in the areas of working conditions and local communities' livelihood.

Salient risks associated with our own operations are mainly related to contractors' working conditions, local communities' livelihood, indigenous people, and privacy (personal data and information).

Key achievements and actions in 2017
- Increased internal awareness through workshops and dialogues to find the right priorities for human rights
- About 300 employees including top executives, buyers, the sustainability team, and selected specialists in areas such as sales, integrity and communication completed training in our new CoCfS and in human rights in general
- Human rights have been made a yearly recurring theme of discussions for the Board of Directors and Executive Group Management
- The revised and strengthened CoCfS was adopted in July 2017
- An updated statement on slavery and human rights in accordance with the UK Modern Slavery Act was published[1]
- Our due diligence process was strengthened, especially with respect to suppliers in high-risk countries
- We performed our first human rights impact assessment in Colombia. The assessment included preparatory desktop reviews, a three-week site visit, meetings with more than 50 stakeholders, and checking and verification of stakeholders' opinions including two extensive consultation rounds before finalising the report[2]
- We arranged and participated in several external seminars with focus on human rights in order to raise awareness, share best practices and discuss challenges going forward

Future plans for 2018
- Further increase awareness and conduct internal training in human rights
- Identify key focus areas and actions for each business area
- Initiate pilot projects to assess risks and consequences from our human rights impacts. These include working with a number of external stakeholders in prioritised areas, in particular fuel sourcing from high-risk countries (already initiated: Russia, South Africa, and Colombia)
- Further integrate all aspects of human rights into our processes and in our evaluation of suppliers and contractors through several ongoing initiatives

1 For more details, see corporate.vattenfall.com/statement-on-slavery.
2 See corporate.vattenfall.com/globalassets/corporate/sustainability/doc/A-human-rights-risk-assessment-in-Colombia.pdf.

Vattenfall's human rights risk assessment in our Colombian coal supply chain

Since Colombia is classified as a high-risk country, Vattenfall's Responsible Sourcing Board decided to conduct due diligence of our coal purchasing activities in Colombia in accordance with the requirements of the UN's Guiding Principles for Business and Human Rights. Vattenfall was the first European utility to conduct such a risk analysis, and civil society organisations and NGOs including PAX, Forum Syd, and Civil Rights Defenders have reacted positively.

The objective of the assessment was to identify human rights risks in our coal supply chain in Colombia in order to create documentation for our internal decision-making processes and our dialogues with suppliers.

The results of the assessment were summarised in a report (see footnote 2 above), which is the result of a 14-month process of preparation, desktop research, a three-week country visit, fact checking, detailed analysis, and two extensive rounds of stakeholder consultations. The main human rights risks noted by local stakeholders in Colombia are related to workers' rights, displacement and land restitution, involuntary resettlement, and environmental conditions in the local communities.

The report makes recommendations to the mining companies to address the risks and describes the next steps for how Vattenfall will cooperate and build bridges with the stakeholders going forward. We believe that many of the recommendations for the coal mining companies cannot be implemented unilaterally and that government action is needed, too, together with proactive and positive dialogue with civil society.

To support this cooperation, we plan to take the following steps:
- Use the findings of the report as a starting point to engage the mining companies in a dialogue and follow up with specific recommendations for individual mining companies, discuss their current projects and processes that are already addressing our recommendations, and agree upon an action plan with goals for possible improvements
- Actively seek opportunities to share our experiences and challenges. For example, we will discuss our report, findings and recommendations with Bettercoal (in which Vattenfall is a co-founding and active member) and with individual Bettercoal members to arrive at a joint engagement approach for Colombia
- Update our relevant stakeholders on progress

Taxes

Taxes are a key issue for us and for our stakeholders. The taxes we pay are part of our wider economic and social impacts and play an important role in the development of the countries we operate in. We regard taxes as an important component of our commitment to grow in a sustainable, responsible, and socially inclusive way.

Vattenfall is a major taxpayer in the markets we work in. We strive to always pay the right amount of tax on the profits we earn and in the countries where we create the value that generates those profits.

As a business we are subject to taxation in the countries we work in. The tax laws in these countries differ and are often complex and subject to interpretation by management and government authorities. Developments in the international tax area can lead to changes in the tax systems in the countries we work in, which can lead to added uncertainty.

Vattenfall has established a process for tax management and monitoring to ensure that its taxation is in accordance with the law and to manage our tax risk. The Group and Country Tax functions ensure that the Vattenfall Group's business activities are conducted proactively and in accordance with laws and regulations, i.e. in a responsible manner. The Group Tax function reports to the Board of Directors and Audit Committee on tax strategy and provides updates on tax regulations and the main challenges we face. The Board and Audit Committee receive quarterly updates on significant tax issues, such as Group's effective tax rate, tax provisions and compliance.

Tax trends

In recent years we have seen the positive trend toward a more tax transparent landscape. Addressing the public's concerns that certain multinational companies are not paying their fair share of tax requires not only technical international tax reforms, but also better efforts to improve the public's understanding and awareness of the tax issues at hand. Providing user-friendly information about a company's tax situation to a broad spectrum of stakeholders plays an important role in this context.

Among new developments are ongoing projects, both in the EU and OECD, aimed at preventing companies from shifting their profits to countries with low rates as well as other concrete measures to prevent aggressive tax planning, promote tax transparency, and create a level playing field for all companies in the EU. The aim is to help the Member States take strong and coordinated action against tax evasion and ensure that companies pay taxes regardless of where they generate their profits. One direct manifestation of these efforts is the country-by-country reporting that is required by law in all of the countries where Vattenfall operates.

As another step in this development, in 2017 the Swedish government updated the Owner's Directive for state-owned enterprises with a requirement that a company's tax policies are to be approved by the Board.

Vattenfall's tax strategy

To be able to assess the tax effects of business transactions across the Vattenfall Group, management and employees need a basic understanding of Vattenfall's view of tax risks. Vattenfall has adopted a tax strategy that addresses areas such as transfer pricing, use of tax havens and contacts with tax authorities.

Vattenfall's tax strategy is approved by the President and Board and stipulates that taxes in the Vattenfall Group are to be handled in a compliant and prudent manner. The Group's tax risk profile is to act as a good citizen. We define tax risk as the risk of a Vattenfall legal entity failing to meet compliance and reporting requirements in a tax jurisdiction and/or failing to pay or collect the correct amount of tax at the correct time.

Vattenfall does not engage in aggressive tax planning. We conduct tax planning to ensure tax compliance and efficient handling of taxes.

For more details of the tax strategy and policy, see corporate.vattenfall.com/about-vattenfall/strategy-and-objectives/.

Vattenfall as a taxpayer

Vattenfall's business generates considerable tax revenue for the federal, state, and local authorities in the countries we work in. In addition to corporate income tax, Vattenfall pays taxes on production, employment and property. In many of the countries in which we operate, these non-income-based taxes account for a majority of the tax revenues. In the income statement they are included as operating expenses, which entails that corporate income taxes are only part of the total taxes paid by Vattenfall.

Total taxes reported in Vattenfall's income statement for 2017 amounted to SEK 10.8 billion and are outlined below. Corporate income taxes totalled SEK 3.6 billion.

Effective tax rate

Vattenfall's effective tax rate in 2017 was 25.7%. This represents our corporate income tax in the consolidated income statement, totalling SEK -3,318 million, expressed as a percentage of consolidated profit before tax. A reconciliation of the effective tax rate for 2017 compared with the expected tax rate of 23.8% (the weighted average rate applicable in the countries in which our profits were generated) is provided in Note 15 to the Consolidated accounts. In cases where there is a requirement to prepare financial statements for the respective local companies, these generally also include a reconciliation of the effective tax rate for the local company.

The Group's future tax cost and effective tax rate may be affected by several factors, including changes in tax laws and their interpretation, tax reforms in progress that have yet to be enacted into law, and the effects of acquisitions, divestments and any restructuring of our operations.

Total taxes paid by type

Taxes reported in the 2017 income statement, SEK 10.8 billion

SEK million	Sweden	Germany	Netherlands	Other	Total
Personnel-related taxes[1]	1,845	855	248	39	2,987
Nuclear capacity tax	2,057	0	0	0	2,057
Property tax	1,929	45	17	51	2,042
Income tax[2]	1,577	1,803	172	5	3,557
Other taxes	65	26	20	0	111
Total taxes paid	**7,473**	**2,729**	**457**	**95**	**10,754**

1 Including social security costs.
2 Does not include deferred income taxes.

Total taxes 2017

SEK 10.8 billion, shown per tax type

Total taxes paid by region

Tax history by country

SEK million	Sweden	Germany	Netherlands	Other	Total
2017	7,473	2,729	457	95	10,754
2016	9,894	2,157	316	53	12,419
2015	9,578	-641	520	42	9,500

Environment

We have set a goal to be fossil free within one generation. This goal, together with our purpose – to Power Climate Smarter Living – is driving our transformation, whereby we are gradually phasing out fossil fuels, increasing the share of renewables and improving energy efficiency. Reducing climate impact is one of the top priorities in Vattenfall's strategy and one of our most important environmental aspects.

Goals coupled to the EU 2020 targets

Vattenfall informs the Swedish Parliament yearly via the Government Offices on the company's progress in relation to the EU's 2020 targets.

The three relevant targets for Vattenfall are the CO_2 emissions reduction target, the renewable energy target, and the energy efficiency target.

CO_2 emissions

By reducing our emissions to 21 million tonnes of CO_2 by 2020 and being CO_2-neutral in the Nordic countries by 2030, Vattenfall is taking concrete steps towards the Group-wide ambition to be fossil free within one generation. The target for 2020 is set on a pro rata basis to reflect Vattenfall's share of ownership in the various operations.

We believe that openness and transparency are a central part of our environmental work, and as part of this we have chosen to voluntarily report climate-related data and information to CDP[3]. Our Climate Score has improved significantly from year to year since we first began reporting to CDP, and we are striving to continue this upward trend. In 2017, we scored an A- (on a scale of A to D-), which is above industry average but still below the leading utilities.

Direct emissions still make up our largest main impact, but upstream and downstream emissions also account for a significant share in our value chain. We will therefore continue to work on reducing upstream and downstream emissions together with our suppliers, customers and partners. With a special focus on transports, we have committed to electrifying our own vehicle fleet within five years, and we already compensate for our business trips through purchases and cancellation of CO_2 certificates in the UN's Clean Development Mechanism system. In 2017, this compensation amounted to about 15,000 tonnes of CO_2.

Other emissions

Apart from CO_2, we have focused specifically on reducing emissions of sulphur dioxide (SO_2), nitrogen oxides (NO_x) and particulates resulting from the combustion of fossil fuels and biomass in our power plants. During construction, operation and dismantling of our power plants and networks, we take necessary measures to reduce noise and particulate emissions. We use innovative technologies to comply with all legal emission thresholds and to improve our environmental performance. This includes:

- Primary measures such as targeted mixing of coal quality (SO_2) or combustion controlling (NO_x, CO) to reduce combustion emissions
- Secondary measures such as electrostatic precipitators or filter bags (particulates), flue gas desulphurisation (SO_2) and DENOX (NO_x) to clean flue gas
- Noise abatement walls and facades or encapsulation of units to dampen noise from our operations
- Using combined heat and power (CHP) plants to improve fuel efficiency and reduce specific emissions. In addition, expansion of district heating is replacing large numbers of single heating units with high specific emissions
- The shift to biomass, which is contributing especially to reductions of SO_2 emissions
- The use of power-to-heat is replacing fossil-based heating and eliminating associated emissions

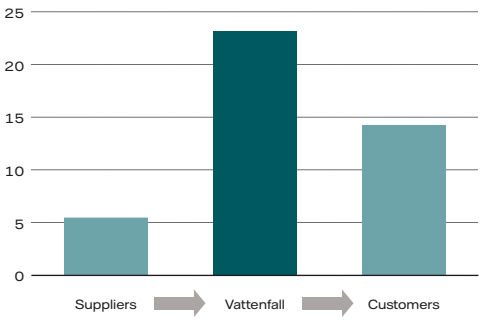
[3] Formerly the Carbon Disclosure Project.

Energy efficiency

We have set a target to achieve a cumulative total of more than 1,000 GWh in annual energy efficiency improvements for the period 2016–2020. In 2017 we achieved 511 GWh in efficiency improvements, mainly through upgrades of hydro power plants and distribution networks and by replacing local boilers with district heating. Vattenfall is working continuously to improve energy efficiency by changing to more efficient components, expanding district heating networks and helping customers also become energy-efficient.

The laws that have been enacted as a result of the EU Energy Efficiency Directive require all large companies to conduct energy audits to identify cost-effective energy saving measures. Such audits have been conducted or are in progress in Vattenfall, in line with requirements of the various national implementations of the directive. Vattenfall meets the requirements of these laws through existing certified Energy Management Systems or by adapting existing certified Environmental Management Systems and through the use of energy auditors. Vattenfall also has its own energy auditors who are helping other large companies identify energy savings potential and meet the requirements of the laws in this area.

Vattenfall's carbon footprint, $MtCO_2e$



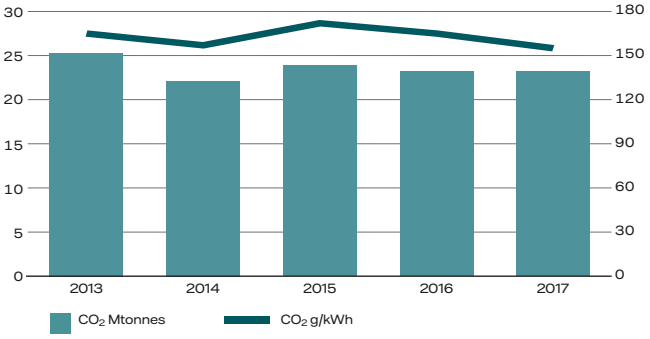
Scope 1: 23.15 Mtonnes, Emissions include CO_2, SF_6 och N_2O (consolidated). 0.15 Mtonnes CO_2-equivalents consist of SF_6 and N_2O_x.

Scope 2: 0.1 Mtonnes (market based emission factors), the majority of energy used is bought from Vattenfall's own production facilities and is therefore included in Scope 1

Scope 3: 19.6 Mtonnes, includes fuel production and transports, non-fuel procurement, business travel and emissions linked to fuel sales to customers

Emissions factors have been obtained from the IPCC Fifth Assessment Report, average national grid factors from the Association of Issuing Bodies and Scope 3 emissions calculated from lifecycle data and information from suppliers.

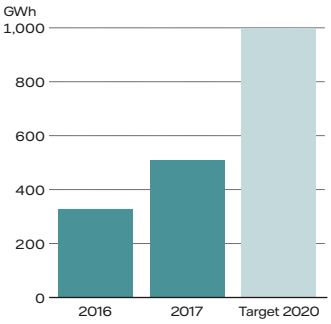
CO_2 emissions[1]



[1] Data for 2013 to 2016 does not include the lignite operations.

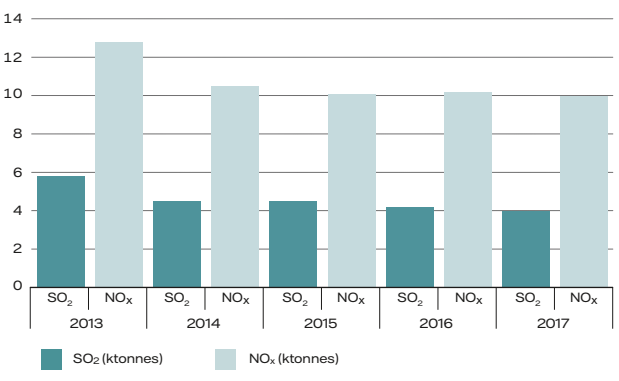
Vattenfall's total CO_2 emissions in 2017 amounted to 22.6 Mtonnes pro rata.

Energy efficiency improvements



New renewable capacity

Nitrogen oxide (NO_x) and sulphur dioxide (SO_2)[1]



[1] Data for 2013 to 2016 does not include the lignite operations.

Renewable energy
Our renewable energy target is to install at least 2,300 MW of a cumulative new capacity from 2016 to 2020. In 2017 Vattenfall installed 354 MW of new renewable energy capacity, resulting in a combined new capacity of 652 MW in 2016 and 2017. The Pen y Cymoedd onshore wind farm in Wales (228 MW) accounted for the largest share of this. Additional capacity was added from the final stage of the Sandbank (72 MW) offshore wind farm in Germany and the Ray (54 MW) onshore wind farm in England. For more information, see the Wind section on page 42.

Environmental management
Vattenfall's environmental management system is part of the Vattenfall Management System (VMS). At year-end 2017, 99.9% of our electricity generation and 98.4% of our heat production came from facilities with certified environmental management systems. The remaining facilities pertain to a very limited number of back-up installations. Some units have their own local environmental management systems that are conducted according to EMAS or other standards. Our environmental activities are governed by an environmental policy and operational instructions that describe the principles for environmental governance and environmental management. Being certified according to ISO14001 is an important part in gaining authorities' trust and in delivering on customers' requirements.

Environmental risk management
To protect the environment from damage and reduce our environmental impact we put special emphasis on assessing the environmental risks associated with our operatoins. Where necessary, specific measures are taken, such as the preparation of and improvement of oil management plans to reduce the risk of oil spills. Another important issue involves monitoring relevant legislative changes in order to be able to draw up action plans at an early stage, if necessary.

Sustainable office buildings
Our vision of being fossil free within one generation also guides us in how we act in the modern working world. Plans have been drawn up to build two innovative office buildings in Hamburg and Berlin with strict sustainability standards. The work environment will offer modern, communicative and flexible structures, and the buildings must meet high technical standards. Safety and health will play an important role, and employees will be encouraged to bike to work or use electric vehicles through intelligent solutions. Easy access via public transportation is also a key component. Light conditions, the indoor climate, energy efficiency and acoustics have all been key areas of focus for the project developers, ensuring that the buildings meet the strictest requirements. We must make sure our existing offices are sustainable as well, and toward this end we have implemented a number of important energy-saving initiatives identified during the energy audits of our existing buildings.

Biodiversity
Vattenfall's operations have direct impacts on biodiversity, such as through land use, alteration of natural landscapes, and emissions. We therefore always strive to avoid or minimise any impacts. For impacts that cannot be fully avoided or mitigated, compensation measures are discussed with the authorities and other stakeholders (such as local communities) as part of the permitting process. We strive to include biodiversity measures in the planning of new projects, as a responsible approach to such issues is important for gaining acceptance from local communities. It also reduces the risk for project delays and permitting obstacles.

Participation and communication are important for increasing transparency and meeting stakeholders' expectations. We also work together with our suppliers to limit indirect impacts in our value chain. We strive to impact our suppliers by setting requirements and, where possible, requesting alternative products with lower impact on biodiversity.

Vattenfall is active in biodiversity research and is involved in a number of projects, mainly associated with wind and hydro power. The aim is to gain knowledge in order to better conduct our operations with the least possible impact. We are also involved in various types of environmental projects focused on the preservation, promotion and/or restoration of biodiversity values.

Protection of species and habitats in the wind power sector
Vattenfall strives to implement environmental improvement measures in the development and construction of wind farms.

An example of initiatives we are taking to increase our understanding of how we can limit our impacts is the integration of various R&D measures into the offshore wind farm in Aberdeen, Scotland. This wind farm, known as the European Offshore Wind Deployment Centre (EOWDC), will consist of eleven turbines and will feature a number of innovations and new technologies for the industry. One such innovation is the use of suction bucket jackets in the installation of the foundations to reduce underwater noise and thereby also the impact on the marine environment. The socioeconomic impact of the EOWDC will also be analysed going forward to gain a better understanding of how offshore wind power installations can be developed so as to maximise the benefit for the region and neighbouring local communities.

In 2014 Vattenfall initiated a research project together with all of the major wind power developers in the German North Sea called GESCHA (Gesamtstudie Schall). The project was focused on studying the impact of piling noise on harbour porpoises during the construction of offshore wind farms. The research project evaluated noise levels and other data about harbour porpoises at eight offshore wind farms. The results of the study, which were published in 2016, showed that offshore wind farms do not have any negative effects on harbour porpoise populations. The project will now continue (GESCHA II) and will include data gathered from 2014 to 2016, in which eight additional wind farms were installed in the German North Sea. The results of the GESCHA II study should confirm those of GESCHA I in addition to showing the effects of the improved noise reduction measures.

In general, the wind power sector is playing an active role in improving the evidence base on the effects of wind farms on protected species. In addition to the examples described above, we are participating in INTACT, which is a joint industry and government project focused on testing and documenting the efficacy of a number of technical solutions to reduce the risk of bird collisions with wind turbines.

Much more remains to be done, however, not least in terms of improving the basic understanding of how various species are affected by wind power installations. Toward this end we are eager to participate in strategic discussions with various stakeholders and take an active involvement in joint efforts aimed at accelerating the pace of research in order to gain evidence-based knowledge that can be used to minimise impacts caused by the construction of new wind farms.

In addition to our involvement in projects with direct ties to our own operations, we are also active in initiatives to reduce impacts caused by our suppliers. For example, we have joined a working group called Task Force Sustainability that is being conducted by the organisation WindEurope in which we are working together with wind turbine manufacturers to develop harmonised methodologies for setting sustainability standards throughout the wind power supply chain.

Biodiversity and hydro power
Large-scale hydro power is of vital importance for Sweden's energy system, as its flexible characteristics can be used to balance a growing amount of intermittent energy production in the system. Construction of hydro power plants and dams has resulted in large impacts on the landscape and natural environment. The effects of hydro power on biodiversity have been specifically addressed in the EU Water Framework Directive, the Habitat Directive, and the Eel Regulation. To identify measures for improving biodiversity near our hydro power plants, while at the same time maintaining high production and regulation capacity, we have developed a biodiversity action programme. A number of projects are being conducted together with various actors, including authorities and universities, to find the best ways of reducing the impacts of hydro power plants in Sweden while at the same time upholding hydro as a renewable source of power generation. Most of these environmental improvement measures are being carried out over a period of several years.

Following are a few examples of measures carried out in 2017:
- Construction of a fish passage at the Långed hydro power station in the Upperudsälven river
- Measures to improve hatching success for black-throated divers in a reservoir above the Midskogs hydro power plant on the Indalsälven river
- Measures to increase passage capacity for spawning migrating salmon and sea trout in the Baggböleforsen section of the old river channel downstream from the Stornorrfors hydro power station in the Ume älv river
- Work on establishing "Kungsådran Älvkarleby", a new nature conservation area along the Västra Dalälven river. The area features a unique natural environment where a recreation area is being developed, including an interpretive trail with information about local species (inauguration in 2018)

We are also involved in a number of knowledge-building projects that are being conducted over several years' time. Projects ongoing in 2017 included both research and pilot studies looking into the possibility to restore the natural reproduction of salmon and sea trout in the lower part of the Dalälven river. In addition, a project is continuing on the Juktån river, a tributary of the Umeälven river, where we are conducting in-depth studies of changed minimum flows. At the Älvkarleby Laboratory, our R&D experts have modelled the largest experimental flume in Europe to test how various measures can reduce the negative impacts of hydro power plants on biodiversity.

Environmental Foundation in Germany
In Germany, Vattenfall manages an environmental foundation that was established by Hamburgische Electricitäts-Werke (HEW) in 1994. Since its

inception, the foundation has provided support to more than 170 projects in a number of areas, including environmental education and nature protection in urban areas and small watercourses. The foundation is operated as an independent non-profit association under civil law. The entire surplus from the foundation's capital is used to fund sustainability projects.

Water management

Cooling water

Vattenfall's fossil-based power plants and nuclear power plants require large amounts of cooling water. So-called through cooling is used at plants where large volumes of water, like river or sea water, are available. Otherwise, cooling towers are used, which have closed cooling cycles and use considerably less water. Vattenfall complies with all applicable regulations on water quality. The temperature of outlet water is strictly controlled to protect aquatic fauna and flora from any potential harm caused by temperature variations.

Wastewater

Wastewater from Vattenfall's installations is carefully cleaned and constantly monitored – a process that also includes comprehensive laboratory controls. No untreated wastewater is discharged into watercourses.

Waste management

Waste is generated mainly during the operation and maintenance of power plants, electricity and heating networks, and during construction and dismantling of power generation systems. In addition, residual products such as ash, slag and gypsum are produced in combustion plants. Offices generate small amounts of waste as well. Depending on the waste content and national legislation, waste is classified either as hazardous or non-hazardous. Radioactive waste is a special form of waste produced from operations at nuclear power plants (see Radioactive waste).

Vattenfall is committed to working in accordance with the waste hierarchy and supporting development of a circular economy. Waste is identified, classified and managed within the framework of the applicable national laws. At the local level, various activities are conducted to prevent and reduce waste as well as to optimise reuse and recycling rates as far as possible.

Combustion residues

Residual products such as ash, slag and gypsum are produced from the combustion of solid fuels such as hard coal, biomass and waste. The volumes produced are directly related to how much fuel is used. More than 90% of residual products are re-used and sold to the construction industry as secondary raw material for cement, concrete or asphalt production. The remainder is sent to landfills.

Radioactive waste

Vattenfall operates nuclear power plants in Sweden and Germany. It is the operator's responsibility to have reliable solutions for managing nuclear waste. All of Vattenfall's facilities that handle radioactive waste have operating guidelines and procedures for disposal.

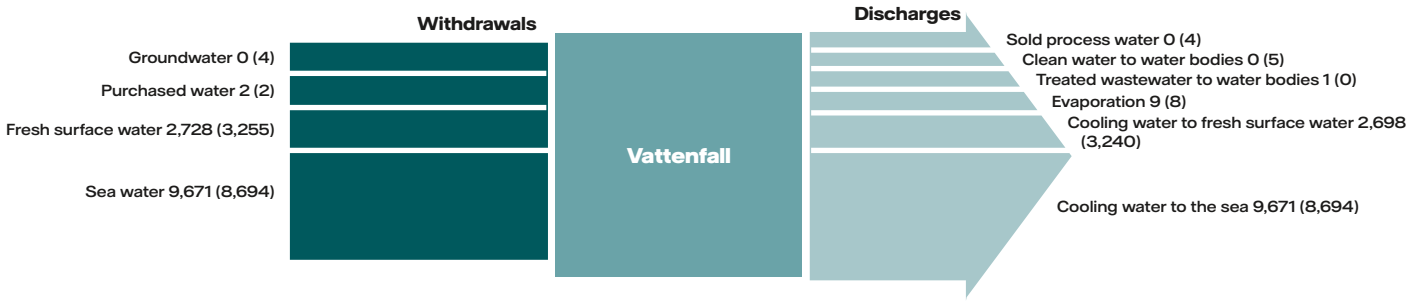
High-level, long-life radioactive waste, consisting primarily of spent nuclear fuel, must be carefully shielded during handling and transportation. When the waste is stored, it is encapsulated to prevent leakage. The type and location of storage depends on the radioactive level of the waste and its ability to generate heat. The entire waste handling process is strictly regulated and monitored[4]. At Vattenfall's nuclear power plants, all employees who have access to radiologically controlled areas complete training in radiation protection. The radioactive waste system and how to minimise radioactive waste are themes included in the training. Waste operators and personnel at production plants who work with waste handling also participate in special training programmes.

Chemicals

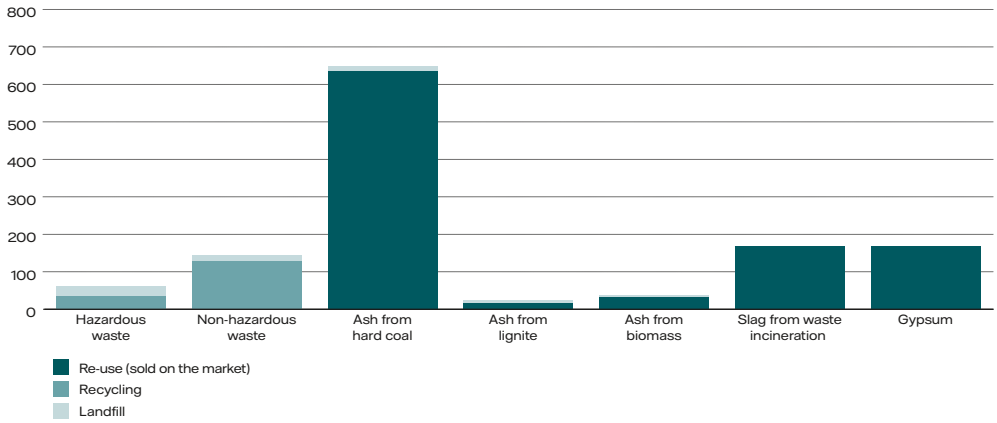
Chemicals are used in all our operations on a daily basis. To reduce the risk for harmful effects on health and the environment, Vattenfall is working continuously to elimiante or replace hazardous chemicals. We also urge our suppliers to do the same.

[4] See pages 38-39 for information on waste handling, and pages 178 for waste volumes.

Total withdrawals and discharges of water[1] (million m³)



Waste and residues[1] (ktonnes)



ktonnes	Hazardous waste[2]	Non-hazardous waste	Ash from hard coal	Ash from lignite	Ash from biomass	Slag from waste incineration	Gypsum
2017	61	145	647	24	37	168	169
2016	106	133	734	41	41	237	208

Waste from construction and demolition make up a small portion compared with the residues that are created at combustion plants.

[1] Data for continuing operations, i.e. excluding the lignite operations, unless otherwise stated.
[2] Includes fly ash from waste incineration.

Human Resources

Vattenfall's remuneration policy
Vattenfall's remuneration policy supports the Group's strategic direction and HR strategy. It aims to enable the organisation to foster an engaging and high-performance culture while securing relevant and diverse competencies and talent.

The remuneration policy outlines the general guidelines for compensation and benefits at Vattenfall. It provides guidance and a framework for development of a remuneration strategy and structure at Vattenfall and draws from the guidelines for Swedish state-owned companies.

Remuneration objectives and structure
Remuneration at Vattenfall is to be fair and consistent, and reflective of the local market, local laws and collective agreements[1]. It should also take into account individual performance, Group objectives and professional competency.

Vattenfall's remuneration structure shall reflect the market in general but not be market-leading.

Remuneration at Vattenfall consists of fixed salary, short-term and long-term variable compensation, pensions and other benefits. Vattenfall offers employees variable salary programmes to strengthen the connection between performance and reward and to attract, retain and motivate employees on all levels.

The programmes are structured in accordance with local laws, collective agreements and market conditions and therefore may differ from country to country. Pursuant to an Annual General Meeting (AGM) resolution and in accordance with the Swedish state's guidelines, senior executives as defined by the AGM are not entitled to variable salary.

Diversity & Inclusion
Vattenfall is a strong advocate for human rights and has integrated gender equality in its recruitment strategies and governance principles. We also strongly believe that diversity enables us to better understand customers' expectations and makes us a better partner in the communities we serve. During 2017 we reviewed our Diversity & Inclusion (D&I) strategy in order to make it better suited for the company's new purpose. One of the goal areas in our D&I strategy is to work for an open and inclusive culture and to increase the awareness of D&I. A training course has been developed, and all executive managers have participated in a D&I workshop.

We believe that having diversity in work groups results in a greater variety of perspectives, which leads to more innovation and better results. Our goal is to have the same gender composition in management positions as the company as a whole. In 2017 we came a step closer to our goal, as women represented more than 32% of all managerial hires, increasing the share of female managers to 23% from 19% in 2015 and 22% in 2016. A long-term goal is that our employees' ethnic backgrounds will reflect that of the general public in our markets. In 2017 we began measuring share of employees with a foreign background in our Swedish workforce to be able to follow up our performance in this area.

For just over two years Vattenfall has appointed a Diversity & Inclusion Officer in the Executive Group Management. This is a two-year assignment and entails serving as a diversity ambassador in order to highlight D & I in the company, in addition to the person's ordinary work duties. Annika Viklund, Head of the Distribution Business Area, served as Diversity & Inclusion Officer until July 2017. She was awarded the title Diversity Officer of the Year at the Manager of the Year Gala in Stockholm in 2017 for her achievement in creating concrete change in an engineering-driven, complex, international, and male-dominated industry. In July Tuomo Hatakka, Head of the Heat Business Area, took over the role for the coming two years.

Developing competent and engaged employees
We encourage our employees to actively develop their skills and competencies as part of our work on building a high-performance culture. Employee development is key to Vattenfall's future success, and we rely on our people to take personal initiative for their continuous development. Toward this end we offer a wide range of training opportunities including a carefully selected pallet of courses in a number of topic areas to strengthen both their professional and personal skills. In line with our strategic direction to accelerate digitalisation in Vattenfall we have also launched a new e-learning portal, where employees can find performance support tools, like e-learning courses and e-books.

[1] 98% of employees are covered by collective bargaining agreements at group level.

Variable compensation programmes

Name of programme	Why	How	Who	Amount, SEK 000s[1]
Profit sharing	Designed to share the overall success of Vattenfall	Based on the Vattenfall Group's targets	15,662	187,404
Short-term incentive programmes	Designed to reward and encourage performance to a greater extent and ensure alignment with Vattenfall's strategy and business plan	Based on the Vattenfall Group's, Business Areas' and individual targets. The performance measures are determined annually	3,760	219,837
Long-term incentive programmes	Designed to reward employees' long-term performance	Based on individual performance, thus creating a direct link to performance achievement	55	24,038[2]

1 Payment in 2017 is based on the 2016 earnings year. For more information, see Note 46 on page 137.
2 Based on payments for both 2015 and 2016.

Employee key ratios

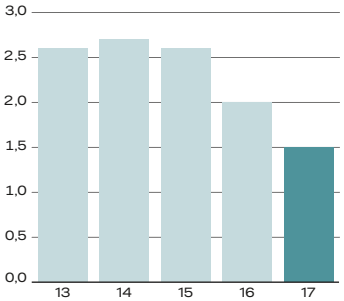
	No. of employees	Women	Men	-29	30-49	50-
Managers	1,805	23%	77%	1%	59%	40%
Country						
Sweden	8,808	25%	75%	11%	49%	40%
Germany	6,836	22%	78%	11%	41%	48%
Netherlands	3,474	25%	75%	6%	60%	34%
Other	922	26%	74%	18%	65%	17%
Total	**20,041**	**24%**	**76%**	**10%**	**49%**	**41%**
Of which, part-time	1,733	21%	5%			
Of which, temporary	609	4%	3%			

LTIF[1] – Lost Time Injury Frequency for employees

	Sweden	Germany	Netherlands	Total[2]
LTIF internal employees	1.2	1.4	2.7	1.5
Fatal accidents				–
LTI external (contractors)[3]	48	26	4	80
Fatal accidents				1
Sick leave per country 2017				
Men	2.5%	4.9%	3.8%	3.6%
Women	4.6%	7.2%	6.3%	5.7%
Total	**3.1%**	**5.4%**	**4.4%**	**4.1%**

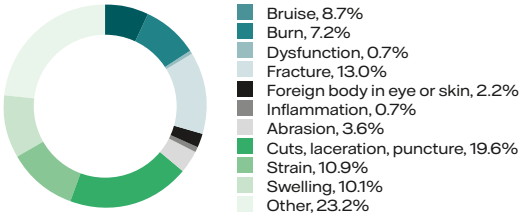
1 LTIF is expressed in terms of the number of lost time work injuries (per 1 million hours worked), i.e. work-related accidents resulting in absence longer than one day, and accidents resulting in fatality. Pertains only to Vattenfall's employees.
2 Includes Denmark and the UK.
3 Since the contractor LTIF cannot be calculated with sufficient reliability, only LTI is reported.

LTIF internal employees 2013-2017



During the year a Health & Safety maturity model was implemented in parts of the organisation, which contributed to a reduction in LTIF. The indicator enables more proactive Health & Safety work. The maturity model will continue to be rolled out to other parts of the organisation in the coming years.

Types of injuries



Tracking injury type allows us to identify problem areas and prioritise initiatives that will have the greatest impact on reducing injuries.

Training and education

	Sweden	Germany	Netherlands	Total
Training days per employee	1.5	2.1	2.3	1.8
Training cost per employee (EUR)	855	1,080	584	886

GRI Index and supplementary disclosures

About this report
Vattenfall's Annual and Sustainability Report is a report in which information about the company's work with sustainability issues and outcomes is described together with the company's financial performance.

Vattenfall has been reporting in accordance with the Global Reporting Initiative (GRI) Guidelines since 2003. For 2017 Vattenfall adheres to the GRI Standards and reports according to the Core option. This means that Vattenfall has identified the aspects that are material for the company and reports at least one indicator per aspect. Omitted information is reported in the GRI Index on pages 173–175. Certain aspects, such as water, effluents and waste, are most relevant at the local level and are not as material at the Group level. No Group targets are currently defined for these areas; instead, they are steered and managed locally. Reporting on local communities focuses on the business areas and topics where Vattenfall's operations have the greates impact on local communities. Vattenfall's overall ambition for its sustainability reporting is that it will be transparent and relevant. The GRI Index indicates where information about Vattenfall's reporting in accordance with GRI can be found in the Annual and Sustainability Report.

Reporting profile and scope
The Annual and Sustainability Report (ASR) describes the areas in which the Group has considerable environmental, social and financial impacts. Reporting on local communities does not correspond exactly to the GRI guidelines; instead, examples are used from the most relevant operations to describe Vattenfall's impact and handling. Vattenfall's activities, performance and results are reported as an integrated part of Vattenfall's strategy. The reporting covers all of the Vattenfall Group's operations during the 2017 financial year, unless indicated otherwise, and the figures provided pertain to the 2017 financial year. Vattenfall reports sustainability data annually in the ASR, and the preceding year's report was published on 29 March 2017.

Boundaries
Vattenfall has limited its reporting to the areas in which the company has full control over data collection and information quality, which entails all operations of the company unless indicated otherwise. While GRI Standards entail a greater focus on impacts along the entire value chain, the company cannot yet measure data outside of its own operations in a reliable manner; instead, activities connected to both suppliers and customers are described. Important events and information about changes in the organisation during the year are provided on pages 8–9 and 77. Changes in Vattenfall's supply chain are described on pages 163–164. Changes in the capital structure and other changes in capital are described in Note 42 to the Consolidated accounts, Specifications of equity. The limitations and changes in the reporting are also described in the respective sections or in comments to diagrams and tables. Vattenfall uses different definitions of "supplier" and "new supplier" for its four purchasing streams reported on page 164. A supplier of goods and services is defined as an entity providing goods and services to Vattenfall and whose paid invoices exceed SEK 3,000 in 2017.

For commodity fuels, a coal supplier is an entity that delivered coal to Vattenfall's power plants for own use. A supplier of biomass, nuclear fuel or heat fuels is an entity that Vattenfall has a contract with. For all categories, a new supplier is an entity that did not previously have a contractual relationship with Vattenfall and which signed its first contract with us during the 2017 reporting period.

Data collection and accounting policies
Environmental data is collected via the Group's environmental reporting process. Group-wide definitions are used for all environmental parameters to enhance quality. Accounting policies for the financial reporting are described in Note 3 to the Consolidated accounts, Accounting policies. The principles of consolidation for environmental data are the same as for financial data. Consolidation includes subsidiaries in which Vattenfall AB owns shares corresponding to more than 50% of the voting rights or in some other way has control. Absolute CO_2 emissions are also reported in accordance with Vattenfall's share of ownership in the respective plants. Reported CO_2 emissions are calculated based on fuel consumption. It should be noted that the calculation methods differ from country to country. The calculation methods are set by national legislation, with ties to the EU Emissions Trading System. All other emissions have either been measured or calculated based on periodically recurring measurements. Figures for energy and water consumption are based, like all environmental data, on the production units' own reporting. Depending on the size and type of operation, the measurement equipment differs from unit to unit. However, all reporting is to be in accordance with the Group-wide definitions and principles. The employee data that is presented is based on verified figures from Vattenfall's annual accounts. Vattenfall uses contractors to a considerable extent, but does not report the number of those persons due to the difficulty in obtaining quality data for this type of reporting.

Statutory sustainability reporting
Vattenfall is subject to statutory sustainability reporting in accordance with the Annual Accounts Act. The statutory sustainability report is found in the following sections of the Vattenfall Annual and Sustainability Report and meets the reporting requirements for the environment, social conditions and personnel, human rights and anti-corruption:

- Strategic targets, pages 10–11
- Business model and value creation, pages 12–15
- Integrity and risk management, pages 61–65
- Internal governance, pages 76–77
- Materiality and stakeholders, pages 161–162
- Responsible sourcing and purchasing, pages 163–164
- Human rights, page 165
- Environment, pages 166–169
- Human resources, pages 170–171

External assurance
The sustainability information in the Annual and Sustainability Report for 2017 has been reviewed by Vattenfall's auditor, Ernst & Young. In addition, it has been approved by Vattenfall's Board of Directors.

Sustainability initiatives and principles that the company has aligned itself with or supports, and important memberships in interest association and organisations
The Vattenfall Group has adhered to the UN's voluntary Global Compact since 2002 through the Swedish partnership for Global Responsibility. Vattenfall has been a direct participant since 2008. Consequently, Vattenfall has undertaken to support the UN's Global Compact and to adhere to the OECD Guidelines for Multinational Enterprises. The implementation and the monitoring of compliance to the Vattenfall Code of Conduct for Suppliers, based on the UN Global Compact, is in progress. Vattenfall also adheres to the UN Guiding Principles on Business and Human Rights. Vattenfall uses the Annual and Sustainability Report as its Communication on Progress for the UN Global Compact (UNGC), and a cross reference between the UN Global Compact and the GRI can be found in the GRI Index. The cross reference is primarily done to the DMA (disclosure on management approach) of each relevant aspect. If this connection is not possible or if the information is available on another page, the principle is directly linked to an indicator. In addition to these undertakings, Vattenfall has opted to align itself with a number of voluntary sustainability initiatives and organisations at the Group level. Examples of these include:

- CSR Europe
- The World Economic Forum
- WindEurope

Vattenfall has its operations primarily in Northwest Europe (Sweden and other Nordic countries, Germany, the Netherlands and the UK). These countries have all ratified the International Labour Organization's (ILO) eight fundamental conventions. A country that has ratified an ILO convention must regularly report on its performance to the ILO.

GRI Standard	Disclosure number	Disclosure title	Page number(s) and/or URL(s)	Omission	UNGC Principle(s)
GRI 102: General Disclosure 2016					
	Organizational profile				
	102-1	Name of the organization	Cover, Note 1		
	102-2	Activities, brands, products, and services	2-3		8-9: Environment
	102-3	Location of headquarters	2, 71		
	102-4	Location of operations	2		
	102-5	Ownership and legal form	2		
	102-6	Markets served	3		
	102-7	Scale of the organization	2, 5		
	102-8	Information on employees and other workers	170-172		6: Labour
	102-9	Supply chain	163-164		
	102-10	Significant changes to the organization and its supply chain	8-9, 163-164		
	102-11	Precautionary Principle or approach	64-65, 168		All principles
	102-12	External initiatives	172		
	102-13	Membership of associations	172		
	EU1	Installed capactiy	184-186		
	EU2	Energy production, net	184-186		
	EU3	Numbers of customers	2, 184-186		
	EU4	Length of transmission and distribution lines, based on voltage	184-185		
	EU5	Allocation of CO_2 emission allowances	184-185		
	Strategy				
	102-14	Statement from senior decision-maker	6-7		
	Ethics and integrity				
	102-16	Values, principles, standards, and norms of behavior	58-61, 76, 163, 165, 166, 170		All principles
	Governance				
	102-18	Governance structure	70-83		
	Stakeholder engagement				
	102-40	List of stakeholder groups	162		
	102-41	Collective bargaining agreements	170		3: Labour
	102-42	Identifying and selecting stakeholders	162		
	102-43	Approach to stakeholder engagement	162		
	102-44	Key topics and concerns raised	162		
	Reporting practice				
	102-45	Entities included in the consolidated financial statements	172		
	102-46	Defining report content and topic Boundaries	172		
	102-47	List of material topics	161		
	102-48	Restatements of information	172		
	102-49	Changes in reporting	172		
	102-50	Reporting period	172		
	102-51	Date of most recent report	172		
	102-52	Reporting cycle	172		
	102-53	Contact point for questions regarding the report			
	102-54	Claims of reporting in accordance with the GRI Standards	172		
	102-55	GRI content index	172-175		
	102-56	External assurance	172		

GRI Standard	Disclosure number	Disclosure title	Page number(s) and/or URL(s)	Omission	UNGC Principle(s)
	Economic				
GRI 205: Anti-corruption 2016					
	103-1/2/3	Management approach, 205	61, 77		10: Anti-corruption
	205-2	Communication and training about anti-corruption policies and procedures	61		
GRI 206: Anti-competitive behavior 2016					
	103-1/2/3	Management approach, 206	61, 77		10: Anti-corruption
	206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	61		
	Environmental				
GRI 302: Energy 2016					
	103-1/2/3	Management approach, 302	77, 167	Total consumption of electricity, heat, cooling and steam, and sold steam and cooling are not reported as data is not available at the Group level.	8-9: Environment
	302-1	Energy consumption within the organization	178		
GRI 303: Water 2016					
	103-1/2/3	Management approach, 303	77, 169	Vattenfall has no power plants in areas with poor access to water. Rain and waste water from other organisations are not reported as this is not significant compared with other water flows.	8-9: Environment
	303-1	Water withdrawal by source	169		
GRI 305: Emissions 2016					
	103-1/2/3	Management approach, 305	77, 168	Focus on regulations and policies for CO_2 as this is most significant for Vattenfall.	7-9: Environment
	305-1	Direct (Scope 1) GHG emissions	166-167, 178		
	305-4	GHG emissions intensity	166-167	CO_2 emissions (Scope 1) are reported	8: Environment
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	166-167, 178	Emissions of POPs, VOC and HAP are not reported because they are not measured regularly since they are not significant for Vattenfall plants. There are no specific legal requirements associated with these emissions.	
Electric Utility Sector-Specific-Environmental Performance Indicators					
	EN21	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	166-167, 178		
GRI 306: Effluents and Waste 2016					
	103-1/2/3	Management approach, 306	39, 169		8-9: Environment
	306-1	Water discharge by quality and destination	169		
	306-2	Waste by type and disposal method	169		
Electric Utility Sector-Specific-Environmental Performance Indicators					
	EN23	Waste by type and disposal method	169, 178		
GRI 308: Supplier Environmental Assessment 2016					
	103-1/2/3	Management approach, 308	163		7: Environment
	308-1	New suppliers that were screened using environmental criteria	164		

GRI Standard	Disclosure number	Disclosure title	Page number(s) and/or URL(s)	Omission	UNGC Principle(s)
	Social				
GRI 403: Occupational Health and Safety 2016					
	103-1/2/3	Management approach, 403	59-60, 76-77	Data on gender for injury rate (LTIF) is unavailable. For contractors only LTI is reported as the number of hours worked is uncertain. Occupational disease rate is not reported as the definitions differ between the countries.	1-2: Human rights 4-6: Labour
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	171		
GRI 405: Diversity and Equal Opportunities 2016					
	103-1/2/3	Management approach, 405	60, 170	No reporting per minority group, as this is prohibited by rules in certain markets.	6: Labour
	405-1	Diversity of governance bodies and employees	80-83		
GRI 413: Local Communities 2016					
	103-1/2/3	Management approach, 413	161, 165		1-2: Human rights 8-9: Environment
	413-2	Operations with significant actual and potential negative impacts on local communities	51, 168		
GRI 414: Supplier Social Assessment 2016					
	103-1/2/3	Management approach, 414	163		
	414-1	New suppliers that were screened using social criteria	163-164		
Electric Utility Sector-Specific-Environmental Performance Indicators					
	EU28	Power outage frequency	51		
	EU29	Average power outage duration	51		

Auditor's Combined Assurance Report on Vattenfall AB's Sustainability Report

This is the translation of the auditor's report in Swedish.

To Vattenfall AB

Introduction
We have been engaged by the Board of Vattenfall AB to undertake a combined assurance engagement of Vattenfall AB's Sustainability Report for the year 2017. The Company has defined the scope of the Sustainability Report to the areas referred to in the GRI index on the pages 173-175.

Responsibilities of the Board and Executive Management for the Sustainability Report
The Board of Directors and Executive Management are responsible for the preparation of the Sustainability Report in accordance with the applicable criteria, as explained on page 172, and are the parts of the Sustainability Reporting Guidelines published by GRI (The Global Reporting Initiative) that are applicable to the Sustainability Report, as well as the accounting and calculation principles that the Company has developed. This responsibility includes the internal control relevant to the preparation of a Sustainability Report that is free from material misstatements, whether due to fraud or error.

Responsibilities of the auditor
Our responsibility is to express a conclusion on the Sustainability Report based on the assurance procedures we have performed. We conducted our engagement in accordance with ISAE 3000 Assurance engagements other than audits or reviews of historical financial information, with the application of RevR 6 Assurance of Sustainability Reports issued by FAR.

The engagement includes a limited assurance engagement on the complete Sustainability Report and audit of the data that is specified below. The objective of an audit is to obtain reasonable assurance that the information is free of material misstatements. A reasonable assurance engagement includes examining, on a test basis, evidence supporting the quantitative and qualitative information in the Sustainability Report. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Sustainability Report, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with IAASB's Standards on Auditing and other generally accepted auditing standards in Sweden.

The firm applies ISQC 1 (International Standard on Quality Control) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We are independent of Vattenfall AB in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

Hence, the conclusion based on our limited assurance procedures does not comprise the same level of assurance as the conclusion of our reasonable assurance procedures. Since this engagement is combined, our conclusions regarding reasonable assurance and limited assurance are presented separately below.

Our audit has consisted of following information:

Outcome of the strategic targets, disclosed on page 10:
- Customer loyalty, NPS (Net Promoter Score)
- Commissioned renewables capacity
- Absolute CO_2 emissions pro rata
- Work injuries, LTIF (Lost Time Injury Frequency)
- Employee Engagement Index

Our procedures are based on the criteria defined by the Board of Directors and the Executive Management as described above. We consider these criteria suitable for the preparation of the Sustainability Report. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion below.

Conclusions
Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Sustainability Report is not prepared, in all material respects, in accordance with the criteria defined by the Board of Directors and Executive Management.

In our opinion the information in the Sustainability Report which has been subject to our reasonable assurance procedures have, in all material respects, been prepared in accordance with the criteria defined by the Board of Directors and Executive Management.

Stockholm, 21 March 2018
Ernst & Young AB

Staffan Landén
Authorised Public Accountant

Outi Alestalo
Expert member of FAR

The auditor's report on the statutory sustainability report
To the general meeting of Vattenfall AB (publ), corporate, identity number 556036-2138

Engagement and responsibility
The Board of Directors is responsible for that the statutory sustainability report on pages 10–15, 61–65, 76–77 and 161–171 has been prepared in accordance with the Annual Accounts Act.

The scope of the audit
Our examination of the statutory sustainability report has been conducted in accordance with FAR´s auditing standard RevR 12 The auditor's report on the statutory sustainability report. This means that our examination of the statutory sustainability report is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinions.

Opinion
A statutory sustainability report has been prepared.

Stockholm, March 21st 2018
Ernst & Young AB

Staffan Landén
Authorised Public Accountant

Five-year overview of sustainability data

	2013	2014	2015	2016	2017
Production and environment					
Electricity generation	181.7	172.9	117.4	119	127.3
– of which, hydro power	35.6	34.3	39.5	34.8	35.6
– of which, nuclear power	51.9	49.9	42.2	46.9	51.9
– of which, fossil power	87.9	82.7	29.2	30.8	31.9
– of which, wind power	3.9	4.1	5.8	5.8	7.6
– of which, biomass and waste	2.4	2	0.7	0.7	0.4
Energy consumption, TWh					
Gas	37.1	31.7	27.7	32.5	36.8
Hard coal	45.1	35.2	46.1	43.9	42.1
Lignite	157	153.5	3.2	3.2	1.5
Peat	0.7	0.4	0.5	0.5	0.4
Waste (non-biogenic)	3.2	2.9	1.8	1.9	1.2
Biomass, waste (biogenic)	9.8	7.1	4.3	4.6	3.7
Other fuels, including oil	5.7	5.7	1.5	1.5	1.5
Uranium (tonnes)	133	119	143	119.6	105.9
Emissions to air[1]					
Carbon dioxide (CO_2), Mtonnes	86.9	82.7	23.9	23.7	23.0[2]
Specific CO_2 emissions, g/kWh	412	421	172	170	157
Biogenic CO_2[3], Mtonnes	3.4	2.4	1.5	1.6	1.3
Nitrogen oxides(NOx), ktonnes	56.5	52.8	10.1	10.2	9.8
Specific NOx emissions, g/kWh	0.268	0.271	0.073	0.073	0.066
Specific NOx emissions (only combustion plants), g/kWh	0.458	0.474	0.196	0.196	0.187
Sulphur dioxide (SO_2), ktonnes	58.2	53.1	4.5	4.2	4.4
Specific SO_2 emissions, g/kWh	0.276	0.272	0.032	0.030	0.030
Specific SO_2 emissions (only combustion plants), g/kWh	0.472	0.476	0.087	0.081	0.085
Particulate matter (PM), ktonnes	2.1	1.7	0.3	0.3	0.3
Specific PM emissions, g/kWh	0.010	0.008	0.002	0.002	0.002
Specific PM emissions (only combustion plants), g/kWh	0.017	0.015	0.005	0.005	0.006
Waste and by-products, ktonnes					
Hazardous waste	194	123	76	106	61
Non-hazardous waste	349	416	128	133	145
Ash from hard coal	738	578	745	734	647
Ash from lignite	5,388	5,334	45	41	24
Ash from biomass	67	42.3	38.3	41.3	37.4
Slag from waste incineration	330	245	229	237	168
Gypsum	3,219	3,000	193	208	169
Radioactive waste					
Low and medium radiactive operational waste, m^3	883	2,251	3,353	1 013	912
Core components, tonnes	18	10	7	17	15
Spent nuclear fuel, tonnes	161	193	197	124	175
SAIDI (minutes/customer)					
Sweden	183	177	212	150	125
Germany	13	15	11	10	11
SAIFI (number/customer)					
Sweden	2.1	2.4	2.2	2.1	1.8
Germany	0.3	0.2	0.2	0.2	0.2
Our people					
Number employees, FTEs	31,819	30,181	28,567	19,935	20,041
– of whom, women	7,485	6,983	6,399	4,773	4,827
– of whom, temporarily employed (not permanent contracts)	1,154	882	761	550	609
Sick leave					
men %	3.8%	3.7%	4.1%	3.5%	3.6%
women %	5.3%	5.0%	5.8%	5.4%	5.7%
Work-related accidents					
Internal LTIF (employees)	2.6	2.7	2.6	2.0	1.5
External LTI[4] (contractors)	–	–	133	101	80.0

	2013	2014	2015	2016	2017
Gender diversity					
Women managers %	18%	18%	19%	22%	23%
Share of managers per age category total					
-29	2%	2%	1%	1%	1%
30-49	51%	54%	52%	56%	58%
50-	47%	45%	46%	43%	40%

1 Emissions are presented in accordance to financial accounting policies and are consolidated.

2 Total greenhouse emissions amount to 23.2 Mtonnes CO_2; 0.2 Mtonnes consist of SF_6 and N_2O emissions. Characterisation factors are obtained from the IPCC Fifth Assessment report.

3 CO_2 emissions from combustion of biomass.

4 Since the calculation of LTIF for contractors is not sufficiently reliable, only LTI is reported.

Quarterly overview

	2016				2017			
Amounts in SEK million	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Income statement items								
Net sales, continuing operations	41,619	30,047	29,746	37,796	40,064	29,349	27,426	38,456
EBITDA, continuing operations	13,736	4,274	5,886	3,313	9,704	8,734	5,943	10,078
Operating profit (EBIT), continuing operations	10,198	-8,272	2,251	-2,841	6,024	4,429	2,173	6,018
Underlying operating profit, continuing operations	8,299	3,701	2,602	7,095	8,341	4,856	2,815	7,311
Financial income, continuing operations	640	897	241	-11	609	630	340	1,092
Financial expenses, continuing operations	-2,213	-1,740	-2,190	-2,006	-1,613	-1,746	-1,644	-3,423
Profit before income taxes, continuing operations	8,625	-9,115	302	-4,858	5,020	3,313	869	3,687
Profit for the period, Total Vattenfall	6,602	-28,644	188	-4,152	3,782	2,119	789	2,881
– of which, attributable to owners of the Parent Company	6,272	-28,508	-35	-4,055	3,220	1,876	735	2,590
– of which, attributable to non-controlling interests	330	-136	223	-97	562	243	54	291
Cash flow items, Total Vattenfall								
Funds from operations (FFO)	9,082	6,446	5,501	7,157	8,228	6,824	5,045	6,606
Cash flow from operating activities	-2,658	9,858	12,521	11,062	-1,192	6,762	15,522	4,517
Free cash flow	-4,997	6,889	10,170	7,155	-3,627	4,111	12,782	-173
Balance sheet items								
Cash and cash equivalents and short-term investments	37,425	30,958	38,548	43,292	39,308	42,813	34,166	26,897
Equity	124,368	87,713	86,806	83,800	87,365	89,962	91,101	94,045
– of which, attributable to owners of the Parent Company	109,756	72,955	71,276	68,272	71,961	74,284	75,498	78,714
– of which, attributable to non-controlling interests	14,612	14,758	15,530	15,528	15,404	15,678	15,603	15,331
Interest-bearing liabilities	100,158	96,634	98,572	96,667	96,013	111,994	91,911	87,154
Net debt	60,729	63,654	57,971	50,724	54,681	67,167	56,841	59,260
Adjusted net debt	137,387	128,948	124,108	124,741	127,051	123,263	113,288	124,360
Provisions	138,727	126,832	128,582	138,344	138,092	124,311	124,593	131,680
Noninterest-bearing liabilities	98,935	105,772	85,648	90,449	80,291	72,749	81,068	94,989
Capital employed, average	283,833	251,859	249,809	248,640	252,783	237,491	234,726	241,635
Balance sheet total	462,188	416,951	399,608	409,260	401,761	399,016	388,673	407,868

Amounts in SEK million	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4
Key ratios **In % unless otherwise stated. (x) means times.**								
Operating margin, continuing operations	24.5	-27.5	7.6	-7.5	15.0	15.1	7.9	15.6
Operating margin, continuing operations[1]	19.9	12.3	8.7	18.8	20.8	16.5	10.3	19.0
Pre-tax profit margin, continuing operations	20.7	-30.3	1.0	-12.9	12.5	11.3	3.2	9.6
Pre-tax profit margin, continuing operations[1]	16.2	9.5	2.2	13.9	18.3	12.7	5.5	12.9
Return on equity, Total Vattenfall	-15.8	-20.6	-23.6	-33.4	-41.0	1.4	2.4	11.0
Return on capital employed, continuing operations	N/A	N/A	N/A	0.5	-1.1	4.2	4.2	7.7
Return on capital employed, Total Vattenfall	-7.5	-5.5	-5.8	-8.5	-10.0	4.1	4.1	7.7
Return on capital employed, continuing operations[1]	N/A	N/A	N/A	8.7	8.6	9.6	9.8	9.7
Return on capital employed, Total Vattenfall[1]	7.4	8.3	8.5	8.7	8.7	10.0	9.8	9.7
EBIT interest cover, continuing operations, (x)	N/A	N/A	N/A	0.5	-0.5	2.1	2.2	3.3
EBIT interest cover, continuing operations, (x)[1]	N/A	N/A	N/A	4.6	5.0	4.9	5.2	4.1
FFO interest cover, continuing operations, (x)	N/A	N/A	N/A	6.5	6.9	6.8	7.1	5.4
FFO interest cover, continuing operations, net, (x)	N/A	N/A	N/A	7.7	7.9	7.1	7.5	6.9
Cash flow interest cover after maintenance investments, continuing operations, (x)	N/A	N/A	N/A	5.6	6.8	4.8	6.7	3.5
FFO/gross debt, continuing operations	N/A	N/A	N/A	27.8	27.7	24.4	29.6	30.6
FFO/gross debt, Total Vattenfall	28.3	31.7	30.8	29.2	28.5	24.7	29.7	30.6
FFO/net debt, continuing operations	N/A	N/A	N/A	53.0	48.6	40.7	47.9	45.1
FFO/net debt, Total Vattenfall	46.6	48.1	52.4	55.6	50.0	41.3	47.9	45.1
FFO/adjusted net debt, continuing operations	N/A	N/A	N/A	21.6	20.9	22.2	24.0	21.5
FFO/adjusted net debt, Total Vattenfall	20.6	23.7	24.5	22.6	21.5	22.5	24.1	21.5
EBITDA/net financial items, continuing operations, (x)	14.3	10.2	4.6	2.5	12.3	8.0	6.0	6.0
EBITDA/net financial items, continuing operations, (x)[1]	12.3	17.4	4.8	8.1	15.3	8.0	6.7	6.8
Equity/total assets, Total Vattenfall	26.9	21.0	21.7	20.5	21.7	22.5	23.4	23.1
Gross debt/equity, Total Vattenfall	80.5	110.2	113.6	115.4	109.9	124.5	100.9	92.7
Net debt/equity, Total Vattenfall	48.8	72.6	66.8	60.5	62.6	74.7	62.4	63.0
Gross debt/gross debt plus equity, Total Vattenfall	44.6	52.4	53.2	53.6	52.4	55.5	50.2	48.1
Net debt/net debt plus equity, Total Vattenfall	32.8	42.1	40.0	37.7	38.5	42.7	38.4	38.7
Net debt/EBITDA, continuing operations, (x)	N/A	N/A	N/A	1.9	2.4	2.4	2.1	1.7
Net debt/EBITDA, Total Vattenfall, (x)	1.8	1.8	1.7	1.8	2.3	2.4	2.1	1.7
Adjusted net debt/EBITDA, continuing operations, (x)	N/A	N/A	N/A	4.6	5.5	4.5	4.1	3.6
Adjusted net debt/EBITDA, Total Vattenfall, (x)	4.1	3.7	3.7	4.4	5.4	4.4	4.1	3.6
Other information								
Investments, continuing operations	3,334	4,287	6,734	7,568	3,992	4,895	5,145	7,141
Electricity generation, TWh, continuing operations	34.5	26.6	25.2	32.6	36.6	28.3	27.3	35.1
Sales of electricity, TWh, continuing operations	56.0	46.4	50.1	40.7	45.2	34.6	33.9	43.6
Sales of heat, TWh, continuing operations	7.9	3.1	1.8	7.6	7.6	3.2	1.9	6.1
Sales of gas, TWh, continuing operations	22.0	8.3	4.4	18.3	23.1	8.9	5.9	18.5
Number of employees, full-time equivalents, Total Vattenfall	27,512	27,980	27,131	19,935	19,892	19,806	20,140	20,041

[1] Based on underlying operating profit, that is, Operating profit excluding Items affecting comparability.

Ten-year overview

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Income statement items										
Net sales	164,549	205,407	213,572	181,040	167,313	172,253	165,945	143,576	139,208[1]	135,295
EBITDA	45,960	51,777	60,706	54,538	54,271	43,554	41,038	30,604	27,209[1]	34,460
Operating profit (EBIT)	29,895	27,938	29,853	23,209	25,958	-6,218	-2,195	-5,069	1,337[1]	18,644
Underlying operating profit	30,220	31,294	36,838	30,793	27,530	28,135	24,133	20,529	21,697[1]	23,323
Financial income	3,412	2,814	2,514	3,843	2,636	1,416	2,590	2,755	1,767[1]	2,670
Financial expenses	-9,809	-13,018	-10,944	-12,754	-10,476	-10,453	-8,635	-7,531	-8,149[1]	-8,425
Profit before income taxes	23,498	17,734	21,423	14,298	18,118	-15,255	-8,240	-9,845	-5,045[1]	12,889
Profit for the year	17,763	13,448	13,185	10,416	17,047	-13,543	-8,284	-19,766	-26,004	9,571
– of which, attributable to owners of the Parent Company	17,095	12,896	12,997	11,083	16,759	-13,668	-8,178	-16,672	-26,324	8,420
– of which, attributable to non-controlling interests	668	552	188	-667	288	125	-106	-3,094	320	1,151
Cash flow items										
Funds from operations (FFO)	30,735	36,700	40,108	38,256	34,419	31,888	32,131	29,009	28,186	26,704
Cash flow from operating activities	36,194	46,246	41,231	33,468	28,485	37,843	40,146	40,934	30,783	25,608
Free cash flow	18,963	27,566	23,846	17,637	12,619	23,579	23,234	25,013	19,217	13,092
Balance sheet items										
Cash and cash equivalents and short-term investments	40,236	56,940	43,873	28,685	46,495	27,261	45,068	44,256	43,292	26,897
Equity	140,886	142,404	133,621	138,931	149,372	130,718	128,462	115,956	83,800	94,045
– of which, attributable to owners of the Parent Company	129,861	135,620	126,704	131,988	140,764	120,370	115,260	103,984	68,272	78,714
– of which, attributable to non-controlling interests	11,025	6,784	6,917	6,943	8,608	10,348	13,202	11,972	15,528	15,331
Interest-bearing liabilities	107,347	213,494	188,277	170,350	160,261	126,488	125,928	110,585	96,667	87,154
Net debt	66,000	154,987	144,109	141,089	111,907	98,998	79,473	64,201	50,724	59,260
Adjusted net debt	–	205,028	173,409	176,031	154,335	162,590	158,291	137,585	124,741	124,360
Provisions	89,799	91,100	87,822	91,719	103,832	118,166	138,567	138,263	138,344	131,680
Noninterest-bearing liabilities	107,795	155,129	131,712	123,558	114,899	110,112	104,252	97,513	90,449	94,989
Capital employed, average	–	–	–	317,799	313,124	302,743	293,992	279,435	248,640	241,635
Balance sheet total	445,827	602,127	541,432	524,558	528,364	485,484	497,209	462,317	409,260	407,868
Key ratios in % unless otherwise stated. (x) means times.										
Operating margin	18.2	13.6	14.0	12.8	15.5	-3.6	-1.3	-3.5	1.0[3]	13.8
Operating margin[2]	18.4	15.2	17.2	17.0	16.5	16.3	14.5	14.3	15.6[3]	17.2
Return on equity	13.6	9.5	10.0	8.6	12.3	-11.4	-6.9	-16.8	-33.4	11.0
Return on capital employed	–	–	–	7	8.3	-2.1	-0.8	-1.8	0.5[3]	7.7
Return on capital employed[2]	–	–	–	10	8.8	9.3	8.2	7.3	8.7[3]	9.7
EBIT interest cover, (x)	4.5	3.1	4.1	2.6	3.7	-0.7	-0.1	-0.8	0.5[3]	3.3
EBIT interest cover, (x)[2]	4.6	3.4	5.0	3.3	3.9	4.1	5.0	4.8	4.6[3]	4.1
FFO interest cover, (x)	5.4	4.8	6.2	4.9	5.7	5.4	7.3	6.5	6.5[3]	5.4
FFO interest cover, net, (x)	7.1	5.6	7.5	5.8	6.6	6.2	10.1	9.4	7.7[3]	6.9
FFO/gross debt	28.6	17.2	21.3	22.5	21.5	25.2	25.5	23.2	27.8[3]	30.6
FFO/net debt	46.6	23.7	27.8	27.1	30.8	32.2	40.4	39.9	53.0[3]	45.1
FFO/adjusted net debt	–	18	23.1	21.7	22.3	19.6	20.3	18.6	21.6[3]	21.5
Equity/total assets	31.6	23.7	24.7	26.5	28.3	26.9	25.9	25.1	20.5	23.1
Gross debt/equity	76.2	149.9	140.9	122.6	107.3	96.8	98.0	95.4	115.4	92.7
Net debt/equity	46.8	108.8	107.8	101.6	74.9	75.7	61.9	55.4	60.5	63.0
Gross debt/gross debt plus equity	43.2	60.0	58.5	55.1	51.8	49.2	49.5	48.8	53.6	48.1
Net debt/EBITDA, (x)	1.4	3.0	2.4	2.6	2.1	2.3	1.9	2.1	1.9[3]	1.7
Adjusted net debt/EBITDA, (x)	–	4	2.9	3.2	2.8	3.7	3.9	4.5	4.6[3]	3.6
Other information										
Dividend to owners of the Parent Company	6,900	5,240	6,500	4,433	6,774	–	–	–	–	2,000[4]
Investments	42,296	102,989	41,794	35,750	29,581	27,761	29,032	25,776	21,921[1]	21,173
Electricity generation, TWh	162.1	158.9	172.4	166.7	178.9	181.7	172.9	117.4	119.0[1]	127.3
Sales of electricity, TWh	189.3	194.6	194.2	209.4	205.5	203.3	199.0	197.2	193.2[1]	157.3
Sales of heat, TWh	35.6	37.9	47.1	41.6	29.8	30.3	24.1	20.6	20.3[1]	18.8
Sales of gas, TWh	–	20.0	63.2	53.8	52.4	55.8	45.5	50.7	54.8[5]	56.4
Number of employees, full-time equivalents	32,801	36,593	38,459	37,679	33,059	31,819	30,181	28,567	19,935	20,041

1 The value relates to continuing operations.
2 Based on underlying operating profit, that is, Operating profit excluding items affecting comparability.
3 The key ratio is based on continuing operations.
4 Proposed dividend.
5 The value has been adjusted compared with information previously published in Vattenfall's 2016 Annual and Sustainability Report.

Definitions and calculations of key ratios

The key ratios are presented as percentages (%) or times (x) and are based on full year 2017.

Alternative Performance Measures
In order to ensure a fair presentation of the Group's operations, the Vattenfall Group uses a number of Alternative Performance Measures that are not defined in IFRS or in the Swedish Annual Accounts Act. The Alternative Performance Measures that Vattenfall uses are described below, including their definitions and how they are calculated. The Alternative Performance Measures used are unchanged compared with earlier periods.

EBIT – Operating profit (Earnings Before Interest and Tax)

EBITDA – Operating profit before depreciation, amortisation and impairment losses (Earnings Before Interest, Tax, Depreciation and Amortisation)

Items affecting comparability – Capital gains and capital losses from shares and other non-current assets, impairment losses and reversed impairment losses and other material items that are of an infrequent nature. Also included here are, for trading activities, unrealised changes in the fair value of energy derivatives, which according to IAS 39 cannot be recognised using hedge accounting and unrealised changes in the fair value of inventories. See Consolidated income statement for a specification of items affecting comparability.

Underlying EBITDA – Underlying operating profit before depreciation, amortisation and impairment losses. This measure is intended to provide a better view on the operating result by excluding items affecting comparability that are of an infrequent nature, while also excluding non-cash depreciation and amortisation.

Underlying operating profit – Operating profit (EBIT) excluding items affecting comparability. This measure is intended to provide a better view on the operating result by excluding items affecting comparability that are of an infrequent nature.

FFO – Funds From Operations, see Consolidated statement of cash flow

Free cash flow – Cash flow from operating activities less maintenance investments

Interest-bearing liabilities – See Consolidated balance sheet – Supplementary Information

Net debt – See Consolidated balance sheet – Supplementary Information

Adjusted net debt – See Consolidated balance sheet – Supplementary Information

Capital employed – Total assets less financial assets, noninterest-bearing liabilities and certain other interest-bearing provisions not included in adjusted net debt. see Consolidated balance sheet – Supplementary Information

Other definition
Hybrid Capital – Perpetual subordinated securities, junior to all Vattenfall's unsubordinated debt instruments.

LTIF – Lost Time Injury Frequency (LTIF) is expressed in terms of the number of lost time work injuries (per 1 million hours worked), i.e. work-related accidents resulting in absence longer than one day, and accidents resulting in fatality.

Calculations of key ratios

Operating margin, %	= 100 x	EBIT	18,644	= 13.8
		Net sales	135,295	
Operating margin excl items affecting comparability, %	= 100 x	Underlying EBIT	23,323	= 17.2
		Net sales	135,295	
Pre-tax profit margin, %	= 100 x	Profit before income taxes	12,889	= 9.5
		Net sales	135,295	
Pre-tax profit margin excl items affecting comparability, %	= 100 x	Profit before income taxes excl items affecting comparability	17,561	= 13.0
		Net sales	135,295	
Return on equity, %	= 100 x	Profit for the period attributable to owner of the Parent Company	8,420	= 11.0
		Average equity for the period attrbutable to owner of the Parent Company excl the Reserve for cash flow hedges	76,390	
Return on capital employed, %	= 100 x	EBIT	18,644	= 7.7
		Capital employed, average	241,635	
Return on capital employed excl items affecting comparability, %	= 100 x	Underlying EBIT	23,323	= 9.7
		Capital employed, average	241,635	
EBIT interest cover, (x)	=	EBIT + financial income excl return from the Swedish Nuclear Waste Fund	20,176	= 3.3
		Financial expenses excl discounting effects attributable to provisions	6,070	
EBIT interest cover excl items affecting comparability, (x)	=	Underlying EBIT + financial income excl return from the Swedish Nuclear Waste Fund	24,855	= 4.1
		Financial expenses excl discounting effects attributable to provisions	6,070	
FFO interest cover, (x)	=	FFO + financial expenses excl discounting effects attributable to provisions	32,774	= 5.4
		Financial expenses excl discounting effects attributable to provisions	6,070	
FFO interest cover, net, (x)	=	FFO + financial items net excl discounting effects attributable to provisions and return from the Swedish Nuclear Waste Fund	31,242	= 6.9
		Financial items net excl discounting effects attributable to provisions and return from the Swedish Nuclear Waste Fund	4,538	
Cash flow interest cover after maintenance investments, (x)	=	Cash flow from operating activities less maintenance investments + financial expenses excl discounting effects attributable to provisions and interest components related to pension costs	18,342	= 3.5
		Financial expenses excl discounting effects attributable to provisions and interest components related to pension costs	5,250	
FFO/gross debt, %	= 100 x	FFO	26,704	= 30.6
		Interest-bearing liabilities	87,154	
FFO/net debt, %	= 100 x	FFO	26,704	= 45.1
		Net debt	59,260	
FFO/adjusted net debt, %	= 100 x	FFO	26,704	= 21.5
		Adjusted net debt	124,360	
EBITDA/net financial items, (x)	=	EBITDA	34,460	= 7.6
		Financial items net excl discounting effects attributable to provisions and return from the Swedish Nuclear Waste Fund	4,538	
EBITDA excl items affecting comparability/net financial items, (x)	=	EBITDA excl items affecting comparability	38,705	= 8.5
		Financial items net excl discounting effects attributable to provisions and return from the Swedish Nuclear Waste Fund	4,538	
Equity/total assets, %	= 100 x	Equity	94,045	= 23.1
		Balance sheet total	407,868	
Gross debt/equity, %	= 100 x	Interest-bearing liabilities	87,154	= 92.7
		Equity	94,045	
Net debt/equity, %	= 100 x	Net debt	59,260	= 63.0
		Equity	94,045	
Gross debt/gross debt plus equity, %	= 100 x	Interest-bearing liabilities	87,154	= 48.1
		Interest-bearing liabilities + equity	181,199	
Net debt/net debt plus equity, %	= 100 x	Net debt	59,260	= 38.7
		Net debt + equity	153,305	
Net debt/EBITDA, (x)	=	Net debt	59,260	= 1.7
		EBITDA	34,460	
Adjusted net debt/EBITDA, (x)	=	Adjusted net debt	124,360	= 3.6
		EBITDA	34,460	

Facts about Vattenfall's markets 2017[1]

	Sweden	Finland	Denmark	Germany	Netherlands	UK	Total
Installed capacity electricity, MW, 31 December 2017							
Hydro power	8,677	124	–	2,879	6	–	11,687
Nuclear power	7,226	–	–	–	–	–	7,226
Fossil-based power	699	–	–	4,784	4,071	–	9,554
– of which, gas	–	–	–	*1,285*	*3,421*	–	*4,707*
– of which, lignite	–	–	–	–	–	–	–
– of which, hard coal	–	–	–	*2,866*	*650*	–	*3,516*
– of which, oil and other	*699*	–	–	*632*	–	–	*1,331*
Wind power	375	–	338	588	201	981	2,483
Biomass, peat, waste	189	–	–	45	2	–	236
Solar power	–	–	–	–	8	5	13
Total	**17,166**	**124**	**338**	**8,297**	**4,288**	**986**	**31,198**
Installed capacity heat, MW, 31 December 2017	2,183	–	–	7,689	1,248	–	11,120
Generated electricity, TWh							
Hydro power	32.3	0.5	–	2.8	–	–	35.6
Nuclear power	51.9	–	–	–	–	–	51.9
Fossil-based power	–	–	–	16.6	15.3	–	31.9
– of which, gas	–	–	–	*3.5*	*12.1*	–	*15.6*
– of which, lignite	–	–	–	*0.3*	–	–	*0.3*
– of which, hard coal	–	–	–	*12.4*	*3.2*	–	*15.6*
– of which, oil and other	–	–	–	*0.3*	–	–	*0.3*
Wind power	1.1	–	1.1	2.5	0.4	2.6	7.6
Biomass, peat, waste	0.2	–	–	0.2	–	–	0.4
Solar power	–	–	–	–	–	–	–
Total	**85.5**	**0.5**	**1.1**	**22.0**	**15.7**	**2.6**	**127.3**
Production of heat, TWh							
Fossil-based heat	0.4	–	–	13.6	1.5	–	15.5
– of which, gas	–	–	–	*6.7*	*1.5*	–	*8.2*
– of which, lignite	–	–	–	*1.0*	–	–	*1.0*
– of which, hard coal	–	–	–	*5.5*	–	–	*5.5*
– of which, oil and other	*0.4*	–	–	*0.5*	–	–	*0.9*
Biomass, peat, waste	3.1	–	–	1.0	–	–	4.2
Total heat production	**3.5**	**–**	**–**	**14.7**	**1.6**	**–**	**19.7**
Sales of electricity, TWh	89.6[6]	3.1	1.3	43.5[5]	18.9	0.6	157.3
Sales of heat, TWh	3.2	–	–	14.0	1.7	–	18.9
Sales of gas, TWh	–	–	–	12.4	43.4	0.5	56.3
Number of retail customers	926,504	354,863	–	3,062,931	1,979,818	124,913	6,449,029
Electricity volume, TWh retail customers	8.8	2.6	–	8.1	7.1	0.3	26.9
Electricity volume, TWh resellers	3.7	0.6	0.6	20.5	–	0.3	25.6
Electricity volume, TWh businesses	25.1[6]	5.4	–	17.1[5]	8.9	–	56.6
Number of network customers	957,465	–	–	2,332,978	–	–	3,290,443
Number of gas customers	–	–	–	537,257	1,735,226	71,078	2,343,561
Electricity network							
Transited volume, TWh	72.5	–	–	13.0	0	–	85.5
Distribution network, km	133,260	–	–	34.710	0	–	169,970
Number of employees (full-time equivalents)							
Per country	8,808	81	255	6,836	3,474	398	19,852
Group total							20,041
CO_2 emissions per country, Mtonnes	0.3	–	–	15.1	7.6	–	23.0
CO_2 emission allowances received, Mtonnes CO_2/year	0.3	–	–	1.4	0.1	–	1.8

Facts about Vattenfall's markets 2016[1]

	Sweden	Finland	Denmark	Germany	Netherlands	UK	Total
Installed capacity electricity, MW, 31 December 2016							
Hydro power[2]	8,700	124	–	2,880	24	–	11,728
Nuclear power	7,254	–	–	–	–	–	7,254
Fossil-based power	699	–	–	4,902	4,048	–	9,649
– of which, gas	–	–	–	*1,238*	*3,398*	–	*4,636*
– of which, lignite	–	–	–	*165*	–	–	*165*
– of which, hard coal	–	–	–	*2,866*	*650*	–	*3,516*
– of which, oil and other	*699*	–	–	*632*	–	–	*1,331*
Wind power	375	–	338	516	215	698	2,142
Biomass, peat, waste	189	–	–	90	2	–	281
Solar power	–	–	–	–	7	5	12
Total	**17,217**	**124**	**338**	**8,388**	**4,296**	**703**	**31,066**
Installed capacity heat, MW, 31 December 2016	2,167	–	–	7,985	1,326	–	11,478
Generated electricity, TWh							
Hydro power[2]	31.8	0.4	–	2.5	0.1	–	34.8
Nuclear power	46.9	–	–	–	–	–	46.9
Fossil-based power	–	–	–	16.1	14.7	–	30.8
– of which, gas	–	–	–	*3.1*	*10.5*	–	*13.6*
– of which, lignite	–	–	–	*0.6*	–	–	*0.6*
– of which, hard coal	–	–	–	*12.1*	*4.2*	–	*16.3*
– of which, oil and other	–	–	–	*0.3*	–	–	*0.3*
Wind power	1.0	–	1.0	1.5	0.4	2.0	5.8
Biomass, peat, waste	0.3	–	–	0.5	–	–	0.7
Solar power	–	–	–	–	–	–	–
Total	**80.0**	**0.4**	**1.0**	**20.6**	**15.2**	**2.0**	**119.0**
Production of heat, TWh							
Fossil-based heat	0.4	–	–	13.7	2.2	–	16.3
– of which, gas	–	–	–	*5.5*	*2.2*	–	*7.7*
– of which, lignite	–	–	–	*2.1*	–	–	*2.1*
– of which, hard coal	–	–	–	*5.6*	–	–	*5.6*
– of which, oil and other	*0.4*	–	–	*0.4*	–	–	*0.8*
Biomass, peat, waste	3.2	–	–	0.9	–	–	4.1
Total heat production	**3.6**	**–**	**–**	**14.6**	**2.2**	**–**	**20.4**
Sales of electricity, TWh	80.6	8.9	2.7	82.1	19.0	–	193.2
Sales of heat, TWh	4.1	–	–	14.1	2.1	–	20.3
Sales of gas, TWh	–	–	–	9.6	43.5	–	53.1
Number of retail customers	940,000	380,000	–	3,040,000	1,980,000	–	6,340,000
Electricity volume, TWh retail customers	8.8	3.1	–	7.9	10.3	–	30.1
Electricity volume, TWh resellers	4.1	0.6	0.8	31.5	–	–	37.0
Electricity volume, TWh businesses	27.3	4.9	–	19.7[5]	–	8.6	60.5
Number of network customers	950,000	–	–	2,320,000	–	–	3,270,000
Number of gas customers	–	–	–	460,000	1,730,000	–	2,190,000
Electricity network							
Transited volume[3], TWh	73.1	–	–	13.4	–	–	86.5
Distribution network, km	133,000	–	–	35,000	–	–	168,000
Number of employees (full-time equivalents)							
Per country	8,684	66	231	6,998	3,595	217	19,791
Group total[4]							19,935
CO_2 emissions per country, Mtonnes	0.3	–	–	15.4	8.0	–	23.7
CO_2 emission allowances received, Mtonnes CO2/year	0.4	–	–	1.6	0.3	–	2.3

[1] Rounding differences may be present for certain items.
[2] In Germany mainly pumped-storage power plants.
[3] Excl. generation transiting.
[4] There are 144 employees in other countries.
[5] Including sales in France.
[6] Including sales in Norway.

Pro rata[1]

2017	Sweden	Finland	Denmark	Germany	Netherlands	UK	Total
Installed capacity electricity, MW, 31 December 2017							
Hydro power[2]	8,470	124	–	2,879	6	–	11,479
Nuclear power	4,945	–	–	282[6]	–	–	5,227
Fossil-based power	699	–	–	4,702	4,071	–	9,473
– of which, gas	–	–	–	*1,253*	*3,421*	–	*4,674*
– of which, lignite	–	–	–	–	–	–	–
– of which, hard coal	–	–	–	*2,817*	*650*	–	*3,467*
– of which, oil and other	*699*	–	–	*632*	–	–	*1,331*
Wind power	304	–	336	322	273	907	2,142
Biomass, peat, waste	189	–	–	34	2	–	224
Solar power	–	–	–	–	8	5	13
Total	**14,607**	**124**	**336**	**8,220**	**4,360**	**912**	**28,558**
Installed capacity heat, MW, 31 December 2017	**2,072**	**–**	**–**	**7,248**	**1,248**	**–**	**10,568**
Generated electricity, TWh							
Hydro power[2]	31.3	0.5	–	2.8	–	–	34.6
Nuclear power	35.5	–	–	1.1	–	–	36.6
Fossil-based power	–	–	–	16.3	15.3	–	31.6
– of which, gas	–	–	–	*3.4*	*12.1*	–	*15.6*
– of which, lignite	–	–	–	*0.3*	–	–	*0.3*
– of which, hard coal	–	–	–	*12.2*	*3.2*	–	*15.4*
– of which, oil and other	–	–	–	*0.3*	–	–	*0.3*
Wind power	0.9	–	1.1	1.3	0.6	2.3	6.2
Biomass, peat, waste	0.2	–	–	0.1	–	–	0.4
Solar power	–	–	–	–	–	–	–
Total	**67.9**	**0.5**	**1.1**	**21.7**	**15.9**	**2.3**	**109.3**
CO_2 emissions per country, Mtonnes	0.3	–	–	14.7	7.6	–	22.6

Footnotes: For explanations, see page 185.

2016	Sweden	Finland	Denmark	Germany	Netherlands	UK	Total
Installed capacity electricity, MW, 31 December 2016							
Hydro power[2]	8,483	124	–	2,880	24	–	11,511
Nuclear power	4,964	–	–	282[6]	–	–	5,246
Fossil-based power	699	–	–	4,820	4,048	–	9,567
– of which, gas	–	–	–	*1,206*	*3,398*	–	*4,604*
– of which, lignite	–	–	–	*165*	–	–	*165*
– of which, hard coal	–	–	–	*2,817*	*650*	–	*3,467*
– of which, oil and other	*699*	–	–	*632*	–	–	*1,331*
Wind power	356	–	337	285	304	625	1,907
Biomass, peat, waste	189	–	–	75	2	–	266
Solar power	1	–	–	–	7	5	13
Total	**14,692**	**124**	**337**	**8,342**	**4,385**	**630**	**28,509**
Installed capacity heat, MW, 31 December 2016	**2,056**	**–**	**–**	**7,543**	**1,326**	**–**	**10,926**
Generated electricity, TWh							
Hydro power[2]	31.0	0.4	–	2.5	0.1	–	33.9
Nuclear power	32.0	–	–	2.2	–	–	34.2
Fossil-based power	–	–	–	15.7	14.7	–	30.4
– of which, gas	–	–	–	*3.0*	*10.5*	–	*13.5*
– of which, lignite	–	–	–	*0.6*	–	–	*0.6*
– of which, hard coal	–	–	–	*11.9*	*4.1*	–	*16.0*
– of which, oil and other	–	–	–	*0.3*	–	–	*0.3*
Wind power	0.9	–	1.0	0.8	0.6	1.8	5.1
Biomass, peat, waste	0.3	–	–	0.5	–	–	0.7
Solar power	–	–	–	–	–	–	–
Total	**64.1**	**0.4**	**1.0**	**21.7**	**15.4**	**1.8**	**104.3**
CO_2 emissions per country, Mtonnes	0.3	–	–	14.9	8.0	–	23.2

Footnotes 1–5: For explanations, see page 185.

[6] The technical capacity of Krummel nuclear power plant is 673 MW pro rata. However, Krummel has no authorisation for power operation and is therefore reported as zero capacity.

Glossary

APX – Amsterdam Power Exchange. An energy exchange for the Netherlands, the UK and Belgium.

Aspect – GRI term that describes sustainability areas based on the categories Environment, Economy and Society.

Availability – Actual electricity generation in relation to the maximum possible generation.

Biomass – Renewable fuel, such as wood, bark and pine oil.

CHP – (Combined Heat and Power). A plant that produces both heat and electricity. In such a plant a large share of the primary energy is used for electricity and heat production, with little wasted heat.

CO_2 – Carbon dioxide.

Derivative instrument – A financial instrument that is commonly used to manage risk. Its value and change in value is related to the underlying (derived) instrument. Examples of derivative instruments are options, forward contracts and swaps.

DMA – "Disclosures on Management Approach". Describes why certain sustainability aspects are identified as material for the company and how steering and monitoring of these are conducted.

EEX – The European Energy Exchange. The German electricity exchange.

Efficiency – An efficiency rating indicates the relationship between energy output and the energy input in a system.

EPD – Environmental Product Declaration – a third-party environmental declaration in accordance with ISO 14025 (www.environdec.com).

EPEX –The spot market of EEX. Since 2009 part of EPEX Spot SE, Paris.

EU 27 – The 27 member states of the EU after its widening on 1 January 2007.

EU ETS – The EU Emissions Trading System. The EU's trading system for CO_2 emission allowances. The system sets a cap for emissions from businesses within the system and facilitates optimisation through trading in emission allowances.

Forward market – A market in which buyers and sellers agree on a set price for a future delivery of the underlying instrument, such as an electricity contract (see also derivative instrument).

Fossil fuels – Fuels based on hydrocarbons from ancient sedimentary layers – mainly coal, oil and natural gas.

Global Compact – The United Nations' (UN's) ten principles for companies surrounding human rights, labour issues, the environment and anti-corruption.

GRI – Global Reporting Initiative – a global standard for sustainability reporting.

Gross capacity – The electric output delivered directly from a plant's generator. Measured in MW (Megawatt).

HOB (Heat only boiler) – A plant that produces heat for district heating as its sole output

IED – (Industrial Emissions Directive) An EU directive that sets higher demands on lowering emission levels and spills to soil and water.

IFRS – International Financial Reporting Standards – Vattenfall has been reporting in accordance with IFRS since 2005.

Indicator – GRI term that provides qualitative or quantitative information about the performance and development of the aspects that are identified as material for the company.

Installed capacity – The performance according to design data for power plants. Commonly measured in MW (Megawatt).

Intrapreneurship – An innovative process within an organisation, typically larger companies.

ISO 14001 – An international standard in the ISO 14000 series for establishing environmental management systems.

ISO 9001 – An international standard in the ISO 9000 series for establishing quality management systems.

LEC (Levelised Energy Cost) – The average cost of production per kilowatt hour electricity, calculated over the full life-time of the generating asset. The net present value method is used to discount future costs with the average cost of capital (WACC).

Life cycle analysis (LCA) – Methodology to establish a products' total environmental impact during its life cycle, from raw material extraction, through manufacturing processes and usage, to waste management, including all transportation and energy consumption.

LTI (Lost Time Injury) – Work-related accidents resulting in absence longer than one day, and accidents resulting in fatality. Commonly expressed as LTIF, or Lost Time Injury Frequency, the number of such accidents per 1 million hours worked

Margin call – Marginal security that the holding of a derivative position must pledge to cover the credit risk of its counterparty (OTC or exchange).

Merit order – The order in which production capacity at plants is used.

Net capacity – The electric output that a plant delivers to distribution networks, i.e. gross capacity less the energy used by the plant itself. Measured in MW (Megawatt)

Nominal capacity – The capacity that a generator is designed for. This concept is used mainly for electricity generation power plants, e.g., hydro power plants and wind turbines. Measured in MW (Megawatt).

Nord Pool – The Nordic electricity exchange. Started in Sweden and Norway in 1996.

NO_X – Collective term for nitrogen oxide, nitrogen dioxide and similar nitrogen compounds.

NPS – Net Promoter Score, or NPS, is a score ranging from -100 to 100 that measures the willingness of customers to recommend a company's products or services to others and is used to determine the customer's overall satisfaction with a company and loyalty to the brand.

OHSAS 18000 – A series of standards that can be used as a basis for an occupational health and safety management system.

OTC – Over the Counter. Trading outside of exchanges (directly or via brokers) in physical and financial contracts.

Peer-to-peer – Two or more individuals or customers can connect and transact directly, without going through a company.

Power-to-Heat – Converting electricity to heat using electric boilers combined with hot water storage. With Power-to-Heat systems, the excess power generated primarily from renewable energy can be utilised later as district heating.

Primary energy – Primary energy is the form of energy that is accessible directly from the original sources. Vattenfall uses the interpretation applied by Eurostat and IEA. This means that all fuels are assigned a primary energy content corresponding to its heating value. Uranium is assigned a primary energy content corresponding to the heat released in the power plant. Solar, wind and hydro power are assigned a primary energy content corresponding to the extracted electricity (or heat).

Prosumer – Someone who both produces and consumes electricity.

Renewable energy sources – Non-finite energy sources such as hydro power, biomass, wind, the sun, ocean waves and geothermal energy.

Repowering – The process of replacing older wind power stations with newer ones that either have a greater capacity or more efficiency, which results in a net increase of power generated.

Reservoir levels – Refers to the volume of water stored in a reservoir which on a specific occasion can be used for hydro power generation. Reservoir levels vary during the year depending on precipitation and production.

SAIDI – (System Average Interruption Duration Index) An index of average power interruption times within electricity distribution. Measured in terms of interruption duration per customer and year.

SAIFI – (System Average Interruption Frequency Index) An index of average power interruption frequency within electricity distribution. Measured in terms of the number of power interruptions per customer and year.

SF_6 – A greenhouse gas over 15,000 times more potent than CO_2 which is commonly used for electrical insulation.

SKB – Svensk Kärnbränslehantering AB (The Swedish Nuclear Fuel Management Company) – responsible for handling radioactive waste in Sweden.

SO_2 – Sulphur dioxide.

Spot market – A market in which trading is conducted for immediate delivery.

Swap – A financial instrument that is a combination of a spot and forward transaction – a type of financial swap agreement.

Thermal power – Electricity generated via a heating process, such as a gas turbine or a steam process in a coal or nuclear power plant (compare combined heat and power).

TPI (Third party integration) A process in which excess or waste heat, which would otherwise be released to the atmosphere, is captured from the industrial facilities in which it is produced and integrated into the district heating network

Volatility – A measure of how the price of a product varies during a given period of time.

Waste hierarchy – The EU's prioritisation framework for how waste is to be avoided and managed.

White label – A product or service which is provided to customers who then brand the product themselves and resell it as their own

For definitions of **financial key ratios**, see pages 182–183.

Power units
- Power is energy per unit of time
- Power output is measured in watts (W)
- 1 kW (kilowatt) = 1,000 W
- 1 MW (megawatt) = 1,000 kW
- 1 GW (gigawatt) = 1,000,000 kW

Energy units
- Energy is power multiplied by time
- 1 kWh (kilowatt hour) = 1 kW in one hour
- 1 MWh (megawatt hour) = 1,000 kWh
- 1 GWh (gigawat hour) = 1,000,000 kWh
- 1 TWh (terawatt hour) = 1,000,000,000 kWh

Weight units
- ktonnes (kilotonnes) = 1,000 tonnes
- Mton (megatonnes) = 1,000,000 tonnes

Voltage
- 1 kV (kilovolt) = 1,000 volts (V)

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Financial calendar

25 April 2018	Annual General Meeting
26 April 2018	Interim report January–March
20 July 2018	Interim report January–June
30 October 2018	Interim report January–September
7 February 2019	Year-end report for 2018 (preliminary)

Forecasts and forward-looking statements
This document contains forward-looking statements that are based on Vattenfall's current expectations. Even if Vattenfall's management believes that these expectations are reasonable, no guarantee can be made that these expectations will prove to be correct. The forward-looking statements herein pertain to risks and uncertainties that could have a material impact on future earnings. The statements are based on certain assumptions, including such that pertain to financial conditions in general in the company's markets and the level of demand for the company's products. The outcome may vary significantly compared with what is presented in the forward-looking statements, depending on, among other things, changed conditions regarding the economy, markets and competition, legal requirements, and other political actions and variations in exchange rates, as well as other factors referred to in the administration report. This English version of Vattenfall's Annual and Sustainability Report is a translation of the Swedish original, which is the binding version.

Rounding differences may occur in this document.

About Vattenfall's financial reports
Vattenfall's financial reporting includes interim reports, the year-end report, and the annual report. In addition to these reports, the company issues financial information via press releases and on Vattenfall's websites.

Vattenfall's Annual and Sustainability Report 2017 is published in Swedish and English. All financial reports are available on Vattenfall's websites. The reports are only available digitally for downloading and can therefore not be ordered in printed versions.

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A renewed Vattenfall with a clear goal

For more than 100 years we have electrified industries, powered people's homes and modernised our way of living through innovation and cooperation. We will now make it possible to live a fossil-free life within one generation. That is our goal. But to succeed it is not enough that we alone are fossil-free. It is for this reason that we are looking beyond our own production. Only then can we truly make a difference.

Energy & solutions from a broader perspective

We view our responsibility from a broader perspective. With our capabilities we are now contributing to change on a much larger scale, and we are leading the shift to fossil-free sources of energy – even beyond our own production. This means that we are finding new and innovative fossil-free ways of producing and delivering power to our customers. But it also means that – together with our partners and customers – we are electrifying important industrial manufacturing processes, transports, and other areas in which we can reduce or entirely eliminate CO_2 emissions.

Ability and capacity to enable a fossil-free life

Climate change is a global problem that requires major, sweeping solutions. Vattenfall has operations in most countries in northern Europe. We are one of the largest actors in renewable and fossil-free energy production. By using our engineering know-how in all parts of the value chain – production, distribution and sales to customers – we can develop solutions and innovations that are bringing us closer to our goal. We are helping our customers live more energy-efficiently by making sure they can choose smart technologies for producing their own electricity or heat, and change over to cleaner alternatives that are both affordable and easy to use.

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