Vattenfall Capital Markets Day

London, 18 June 2018

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Programme

12.00-13.00	**Lunch**
13.00-13.05	**Welcome and Introduction** – Johan Sahlqvist, Head of Investor Relations
13.05-14.05	**Power Climate Smarter Living** – Magnus Hall, CEO **A decade of dramatic change** – Anna Borg, CFO **Q&A** *Moderated by Johan Sahlqvist, Head of Investor Relations*
14.05-14.35	**Coffee**
14.35	**Introduction to Panel Discussions - The New vs the Old, or the New and the Old** *Moderated by Andreas Regnell, Head of Strategic Development*
14.35-15.30	**Panel 1 – Climate smart conventional power is a critical component of the journey toward a sustainable energy system** Tuomo Hatakka, Head of BA Heat Torbjörn Wahlborg, Head of BA Generation Jesper Karpsen, VP Network Solutions, BA Distribution Helle Herk-Hansen, VP Environment
15.30-15.40	**Short Break**
15.40-16.35	**Panel 2 – The new European utility model is rapidly taking shape** Martijn Hagens, Head of BA Customers & Solutions Gunnar Groebler, Head of BA Wind Niek den Hollander, Head of BA Markets Caroline Häggström, VP Customer Service
16.35-17.00	**Concluding remarks** – **An integrated utility for the customer** – Magnus Hall, CEO & Anna Borg, CFO
17.00-21.00	**Refreshments and dinner**

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Power Climate Smarter Living

CEO Magnus Hall

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Market trends

Trends and opportunities/actions

Sustainability and customer focus

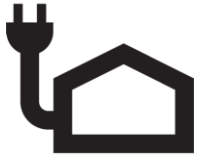
- Customers increasingly considering climate impact when choosing energy solutions and suppliers

- Focus on customer journey
- Climate-smart offerings

Electrification

- Climate goals drive electrification of transport, industry and heat

- Infrastructure for electric vehicles
- Portfolio of heat offerings including heat pumps
- Industry partnerships



More decentralised solutions

- Technological trends drive integration of renewables, decentralised generation and storage

- Small-scale generation
- Energy storage
- Smart grids

Digitalisation

- Entire energy value chain is becoming digitalised
- Consumption steered to times when energy price is low

- Focus on data governance to capture the value of data
- Efficiency improvements based on data analytics
- Digital customer interactions

New ways of working are driving value and growth

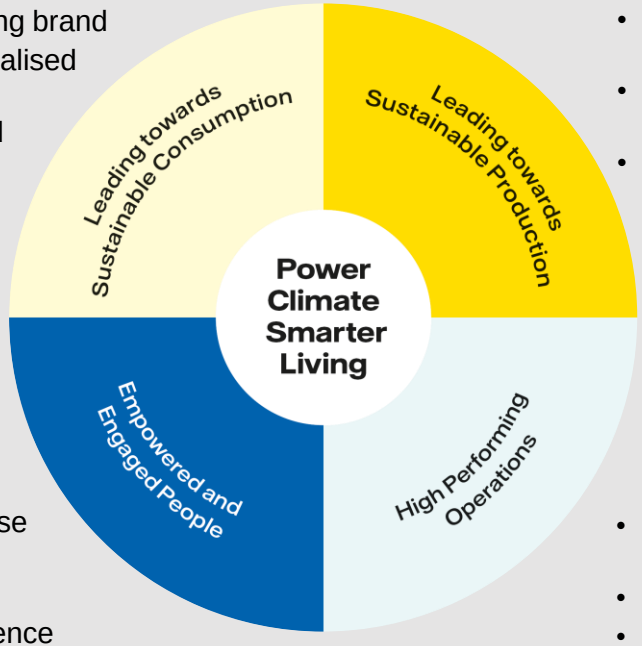
- Pressure on wholesale markets remains
- Increasingly competitive environment put pressure on margins

- Embrace new ways of working
- Keep focus on risk management, innovation and operational excellence

Strategy and direction

- The grid is the link and the enabler

- Customer centric and strong brand
- Sizable position in decentralised energy
- Driver of electrification and climate smart society



- Leading producer of renewable energy
- Fossil-free within one generation
- District heating is core

- Clear and engaging purpose
- Attractive employee value proposition
- Right and diverse competence

- First quartile in cost efficiency
- Digital utility
- Sustainable value chain

Vattenfall today – a stronger and more resilient company

Achieving a positive turnaround in a challenging market

Solid financial performance in 2017[1]

- **Returning to profit on the bottom line** with a Net profit of SEK 9.6 bn (-2.2) and Underlying operating profit (EBIT) of SEK 23.3 bn (21.7)
- **ROCE** at 7.7% (0.5)
- **Resilient capital structure** with FFO/AND at 21.5%
- **Regulated and semi-regulated businesses are key contributors** (~50%) to the group's EBITDA

Transforming to Power Climate Smarter Living[2]

- **Strong relationship with a growing customer base** – Relative NPS +2 in 2017 and no. of contracts increased by >300,000
- **Significant growth in renewable power generation** – Over 700 MW under construction and ~6 GW in development
- **Reducing CO_2 throughout the value chain** – Own exposure at 23 Mt
- **An attractive partner in the energy transition**

Strong operational efficiency

- **Efficient large scale operations – Case study: Nuclear improvement program**
- **Leveraging on our digital capabilities**

[1] Q1 2018: Net profit SEK 4.2 bn, Underlying operating profit (EBIT) SEK 9.4 bn, FFO/AND 20.7%. Regulated/semi-regulated share pre lignite divestment, 2016: ~40%

[2] CO_2 pre lignite divestment, 67.7 Mt

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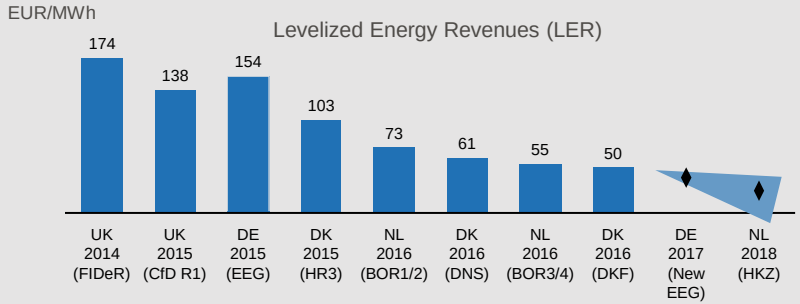
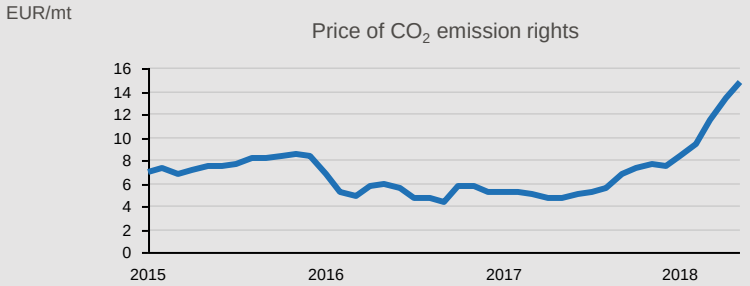
We stand up to the challenge of the evolving energy landscape

The ”rules of the game” are changing with rapid speed

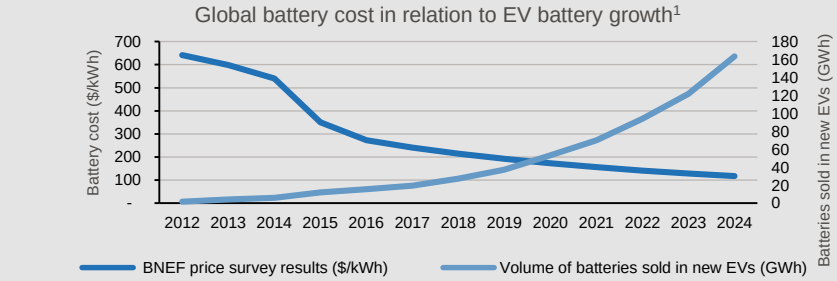
Falling costs and subsidies for renewables



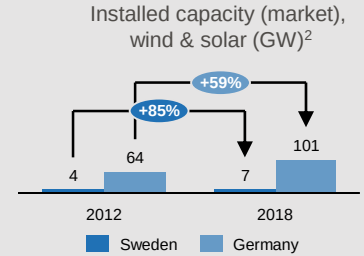
Strong rally in CO_2 prices challenging the merit order

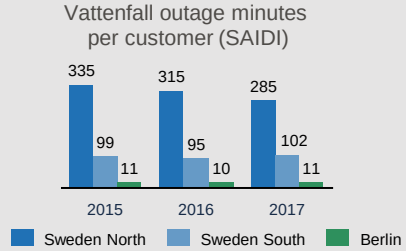


E-mobility is projected to soar



Increased capacity/quality requirements on the grids and need for upgrades



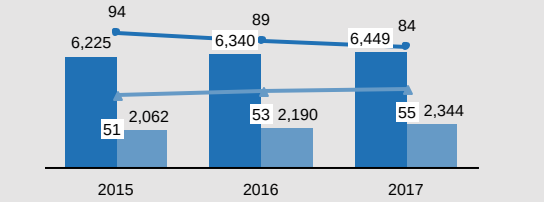


[1] Source: Bloomberg New Energy Finance (BNEF)
[2] Source: Svenska kraftnät, Fraunhofer

Strong relationship with a growing customer base

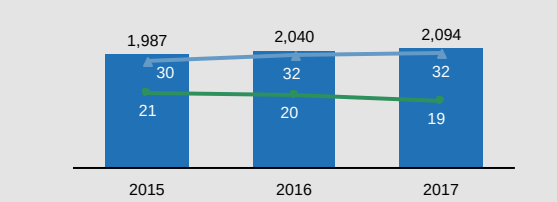
Transforming to Power Climate Smarter Living

Customers & Solutions



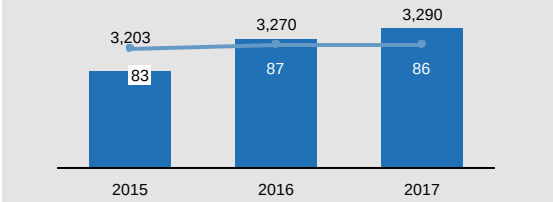
- +100,000 contracts p.a. in both electricity and gas despite competitive pressure
- Strong Relative Net Promoter Score – Ahead of peers and at target in 2017 (+2)
- Continuing to lower Cost to Serve

Heat



- +100,000 contracts in two years
- Less than 1% churn
- Strong political support
- Attractive growth potential with solutions orientation

Distribution

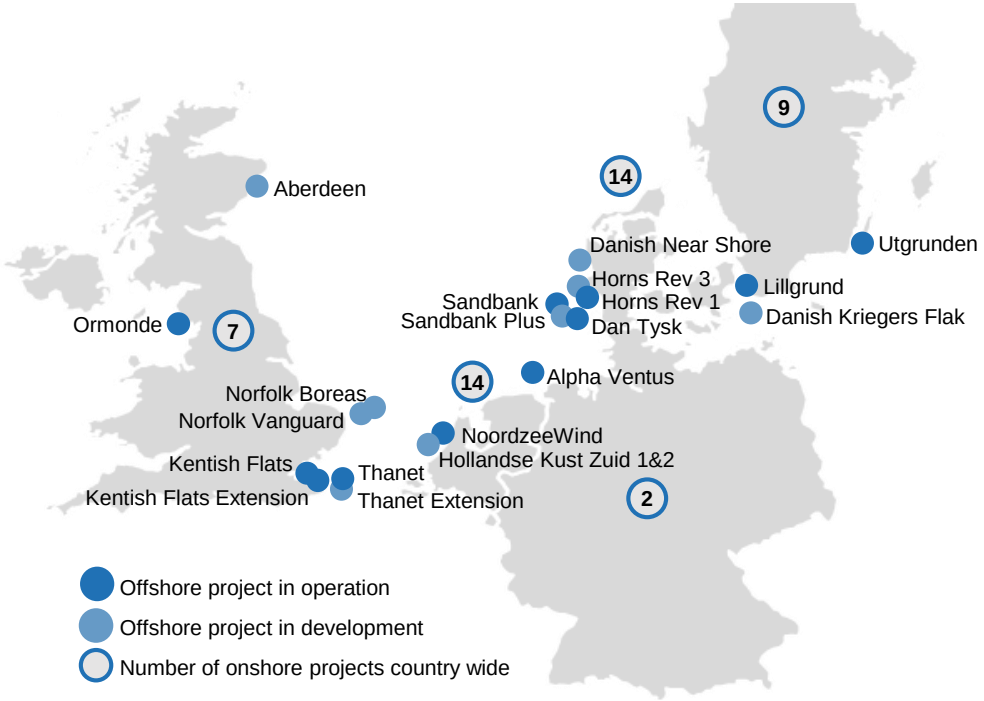


- +100,000 contracts in two years
- High quality focus
- Growth driven by urbanization
- Deployment of digital grid solutions for improved service, quality and more renewables

Significant growth in renewable power generation

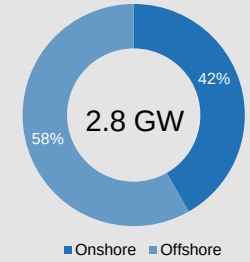
Transforming to Power Climate Smarter Living

Geographical overview

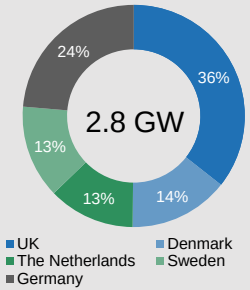


Operating assets

Split by type of generation



Split by geography



Under construction and pipeline

>700 MW	Wind projects under construction
~6 GW	Wind projects in development
~ 500 MW	Large scale solar pipeline
~ 21 MW	Decentral solar pipeline
~ 60 MW	Batteries pipeline

Reducing CO_2 emissions throughout the value chain

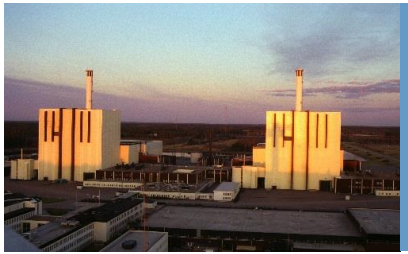
Transforming to Power Climate Smarter Living

CO_2 – emissions 2017

Suppliers

~ 5 Mt

- Transparency on climate footprint
- Collaboration for phasing out fossil fuels



Own business

~ 23 Mt

- Climate neutral in the Nordic region 2030
- Coal phased out 2030 in the heat portfolio
- Fossil-free within one generation

Customers[1]

~ 15 Mt

- Products and services with clear climate footprint (EPD[2] / LCA[3])
- Renewable decentralised solutions
- Low carbon district heating
- Climate targets together with cities
- E-mobility
- Electrification of industries

[1] Primarily related to natural gas sales
[2] EPD – Environmental Product Declaration – a third-party environmental declaration in accordance with ISO 14025
[3] LCA – Life cycle Assessment

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An attractive partner in the energy transition

Transforming to Power Climate Smarter Living

Research project for a carbon dioxide-free steel industry

HYBRIT FOSSIL-FREE STEEL

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Cooperation in large scale bio-diesel production

preem

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Study on electrified cement production

CEMENTA HEIDELBERGCEMENT Group

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Storage projects at a number of wind parks

BMW

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Market place for energy sharing

powerpeers share your energy

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Support of a major enterprise for battery production in Sweden

northvolt

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Northern Europe's largest charging network for e-vehicles

InCharge

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Attract industries to Sweden

NODE POLE

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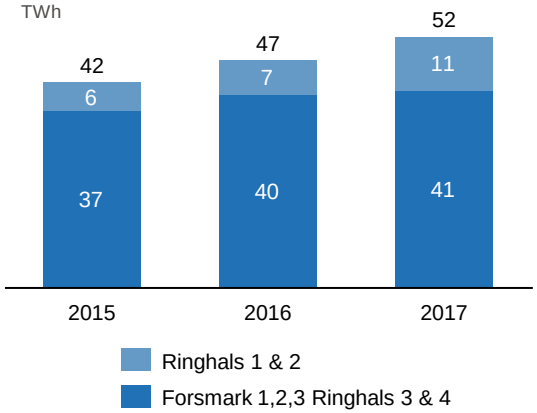
Efficient large scale operations - Case study: Nuclear improvement program

Strong operational efficiency

All-time record production year for nuclear in 2017



Improvement program

Target	Indicator	AC 2016	AC 2017	KPI 2021
Safe and available	Availability	75%	85%	>90%
Cost effectiveness	Cost/kWh[1,2]	35 öre	24 öre	19 öre
Capital Discipline	Total Capex	SEK 2 bn	SEK 2 bn	SEK 1 bn

Key focus areas

- Higher availability
- Leaner O&M organisation
- Lower procurement and fuel cost
- Lower investments
- Secured back-end cost

[1] Cost of purchase, O&M cost, depreciation, financing cost and capacity tax. The capacity tax constituted 4 öre/kWh in 2017 and 7 öre/kWh in 2016
[2] 29 öre/kWh in 2016 excl. IAC, incl. capacity tax

Leveraging on our digital capabilities

Strong operational efficiency

Opportunities	CUSTOMER EXPERIENCE	OPERATIONAL EXCELLENCE	NEW BUSINESS MODELS
Examples	▪ InCharge ▪ Alltid	▪ O&M optimization ▪ Predictive maintenance	▪ Powerpeers ▪ Micro grids
Enablers	**DIGITAL TALENT AND UTILITY KNOWLEDGE**		
	CULTURE and GOVERNANCE		
	DIGITAL PLATFORM		

Delivering on our strategic objectives

Customers & Solutions

Key milestones in 2017/2018

- Entering the UK consumer market through the acquisition of iSupplyEnergy
- 1,600 e-mobility charging points added to the network in 2017 and 9,000 charging points in total
- Expansion of InCharge - a partner-based network of charging stations in Sweden and Northwest Europe incl. recent market entry into the UK
- Acquisitions to support our strategy - Brainheart in the Nordics, Smarter Living & TINK in Germany
- Digital platforms like Powerpeers are developing with almost 18,000 customers on the platform and an NPS of +19

Delivering on our strategic objectives

Wind

Key milestones in 2017/2018

- Full commissioning of Sandbank (288 MW offshore), Pen y Cymoedd (228 MW onshore) and Ray (54 MW onshore)
- Winning bid for the first non-subsidised offshore wind farm, Hollandse Kust Zuid 1 & 2, in the Netherlands (700-750MW)
- PPA signed with Norsk Hydro on 350 MW Swedish onshore wind farm Blakliden Fäbodberget after formation of a partnership with Vestas and PKA
- World's highest capacity turbine, 8.8 MW, deployed
- Successful installation of suction buckets

Ray onshore wind farm

Delivering on our strategic objectives

Power Generation

Key milestones in 2017/2018

- Investment decision for independent core cooling in reactors 3 and 4 at Ringhals
- Swedish nuclear waste management fee decided
- Capacity tax on Swedish nuclear fully abolished (~SEK 3 bn p.a.)

- Shareholder agreement for Swedish hydro fund to adapt to environmental standards (Vattenkraftens Miljöfond AB)
- Property tax on hydro (~SEK 2 bn p.a.) gradually reduced 2017-2020

- Decommissioning of German nuclear power operations progressing according to plan

Ringhals NPP

Delivering on our strategic objectives

Heat

Key milestones in 2017/2018

- Klingenberg (590 MWth) conversion from coal to gas
- Marzahn (230 MWth) construction start
- Reuter C (331 MWth) to be closed
- Investment decision to convert a heat only boiler peat-fired plant in Uppsala (120 MWth) to biomass
- Investment decision to build power-to-heat asset (120 MWth) and gas-fired heat-only boilers in Spandau
- New decentralised product launches, e.g. on-site solar production and micro CHPs

Delivering on our strategic objectives

Distribution

Key milestones in 2017/2018

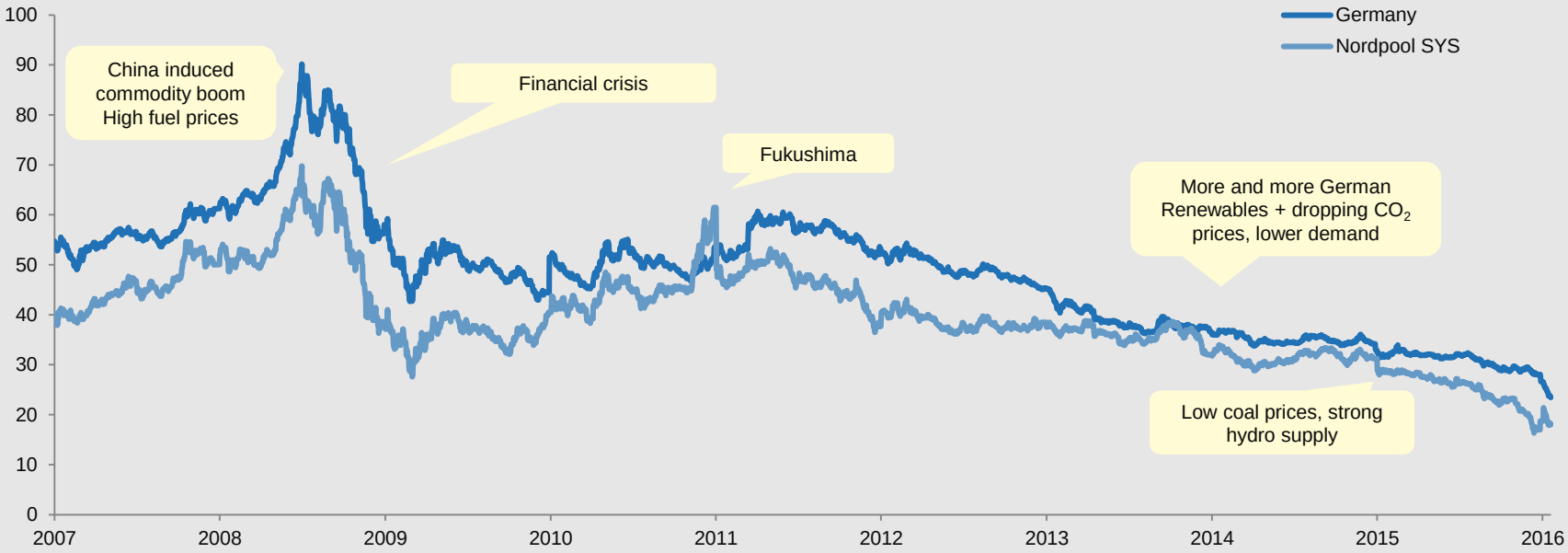
- Adjusted tariffs in Sweden support continued investments and major upgrades in the network
- New network prices in Sweden applied from 1 January 2018
- Adjusted tariffs in Germany reflecting higher upstream costs
- Swedish revenue frames for 2016-2019 settled with WACC at 5.85%
- Positive trend in service level although major quality upgrades still needed

A decade of dramatic change

CFO Anna Borg

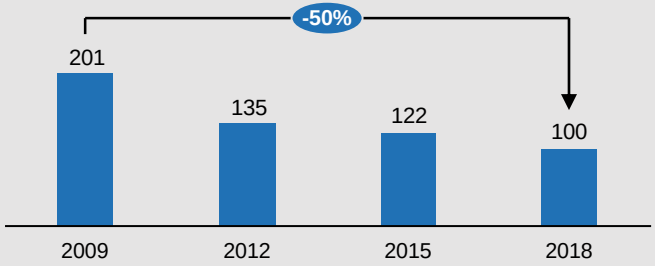
A decade of dramatic change

Front year contract price (EUR/MWh)



We responded to new market conditions

Capex reductions – 5-year investment plan (SEK bn)

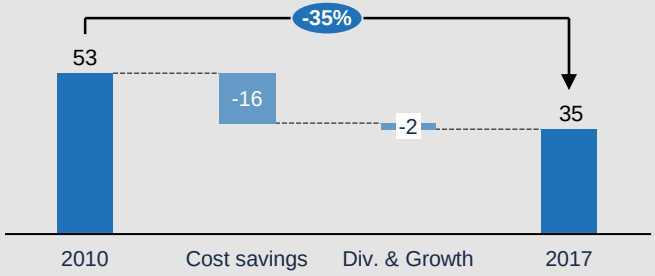


Divestments

- 50Hertz (2010)
- Poland (2011/12)
- Belgium (2012)
- DSO Finland (2012)
- DSO Hamburg (2014)
- Industry Parks (2014-2017)
- Hamburg Heat (2015)
- DK Heat (2015/16)
- Lignite (2016)
- Waste-to-energy (2017)

Total proceeds: SEK 70 bn

Cost savings – Development of cost base (SEK bn)



Other measures

- Hybrid issuance and expansion **(SEK 10 bn)**
- Dividend foregone **(~SEK 20 bn)**

Vattenfall 2017: Improved profitability and stable capital structure

Highlights

- Returning to profit on the bottom line (Net Profit: SEK 9.6 bn; Underlying EBIT: SEK 23.3 bn)
- Resilient capital structure with FFO/AND at 21.5%
- Regulated and semi-regulated businesses are key contributors (>50%) to the group's EBITDA[1]
- Large investments towards climate neutral growth despite years of market challenges
- Strong production across the Nordic hydro and nuclear fleet
- Increased contribution from wind following commissioning of new assets
- Continued investments in distribution to increase quality of delivery

Key data

SEK bn	FY 2017	FY 2016[2]	Δ
Net Sales	135.3	139.2	-3.9
Underlying EBIT	23.3	21.7	1.7
EBIT	18.6	1.3	17.3
Profit for the period	9.6	-2.2	11.8
ROCE, %	7.7	0.5	7.2
ROCE excl. IAC, %	9.7	8.7	1
FFO/adj. net debt, %	21.5	21.6	-0.1

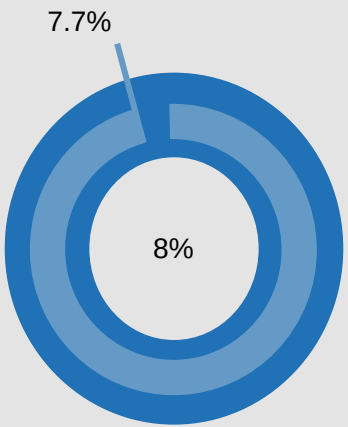
TWh	FY 2017	FY 2016[2]	Δ
Electricity generation	127.3	119.0	8.3
Customer sales, electricity	108.8	123.2	-14.4
Customer sales, heat	18.8	20.3	-1.5
Customer sales, gas	56.4	54.8	1.6

[1] Regulated/semi-regulated share pre lignite divestment, 2016: ~40%
[2] Continuing operations (excluding divested lignite operations)

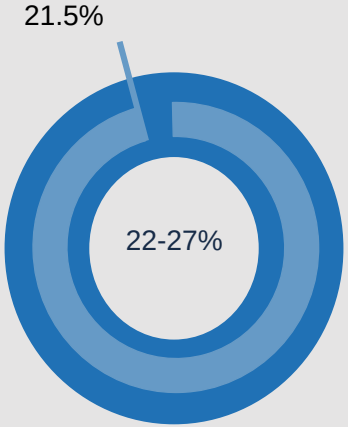
Closing in on targets…not there yet

Financial targets vs. outcome in 2017

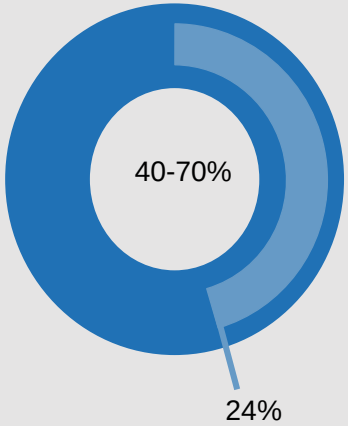
ROCE



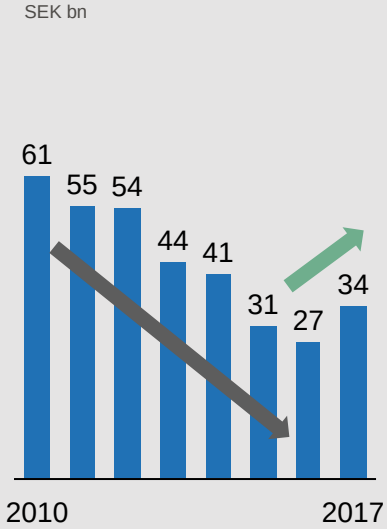
FFO/adj. net debt



Dividend



EBITDA



Financial target

Target fulfillment full year 2017

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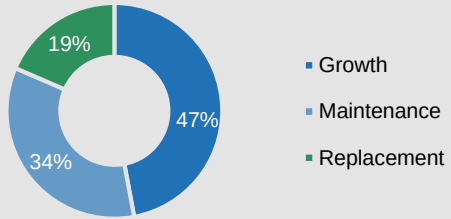
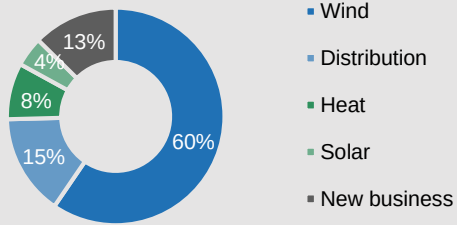
Investment plan 2018-2019

The investment plan contains approx. equal amounts of growth and maintenance investments

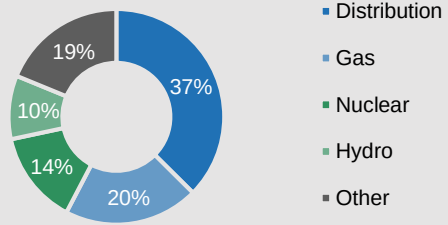
Total Plan (SEK 46 bn)



Growth (SEK 22 bn)



Maintenance (SEK 24 bn)



- The investment strategy reflects our commitment to drive the transition to a fossil free society
  - Grow in renewables
  - Maintain efficient operations within hydro and nuclear power
  - Implement our CO_2 roadmap
- We are investing in both central solutions and decentralised solutions

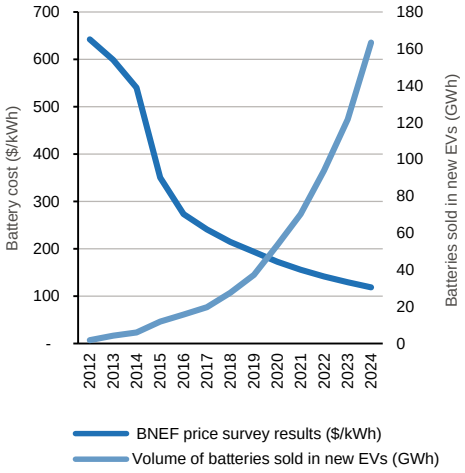
- Onshore (i.e. Wieringermeer) and offshore (i.e. Aberdeen Bay, Horns Rev) wind power to reach long-term renewable capacity target
- Electricity networks to connect new customers and expand networks
- Decentralised solutions like solar and e-mobility to enable both us and our customers to reduce our carbon footprint
- Winning bid for Hollandse Kust Zuid 1 and 2 – commissioning expected to start beyond 2019

- Investing in electricity networks to improve quality and flexibility
- Modernising the heat portfolio to be fossil free within one generation
- Securing safe operations of our Swedish nuclear and hydro power plants
- Additionally several projects ongoing related to nuclear decommissioning in Germany, preparations for closing Ringhals 1&2 and final repository (covered by funds/provisions)

New customer centric business growth

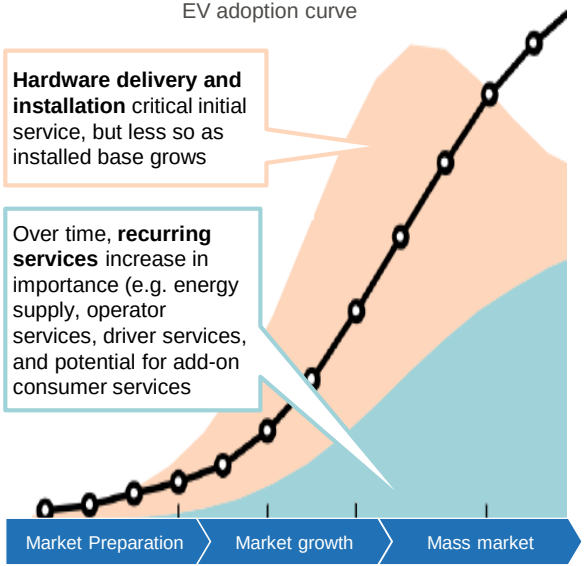
Several factors point to a significant market for EV charging…

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



…with business models shifting from "hardware" to services

EV adoption curve

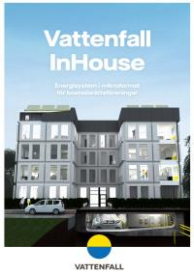


Vattenfall is active in several areas of new business / decentral solutions

Alltid

InCharge

powerpeers
share your energy



Haus-Strom

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powered by tink

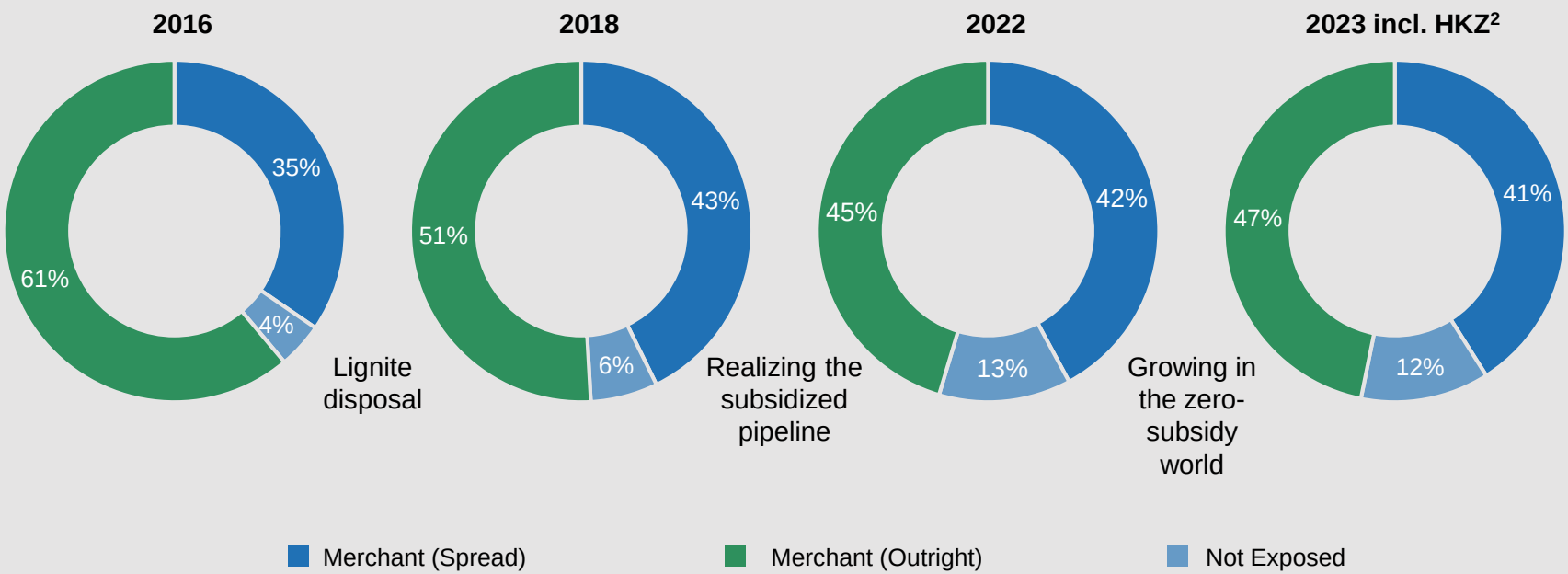
ENPURE
Ein Tarif

Solar Lease

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

Long-term capacity development

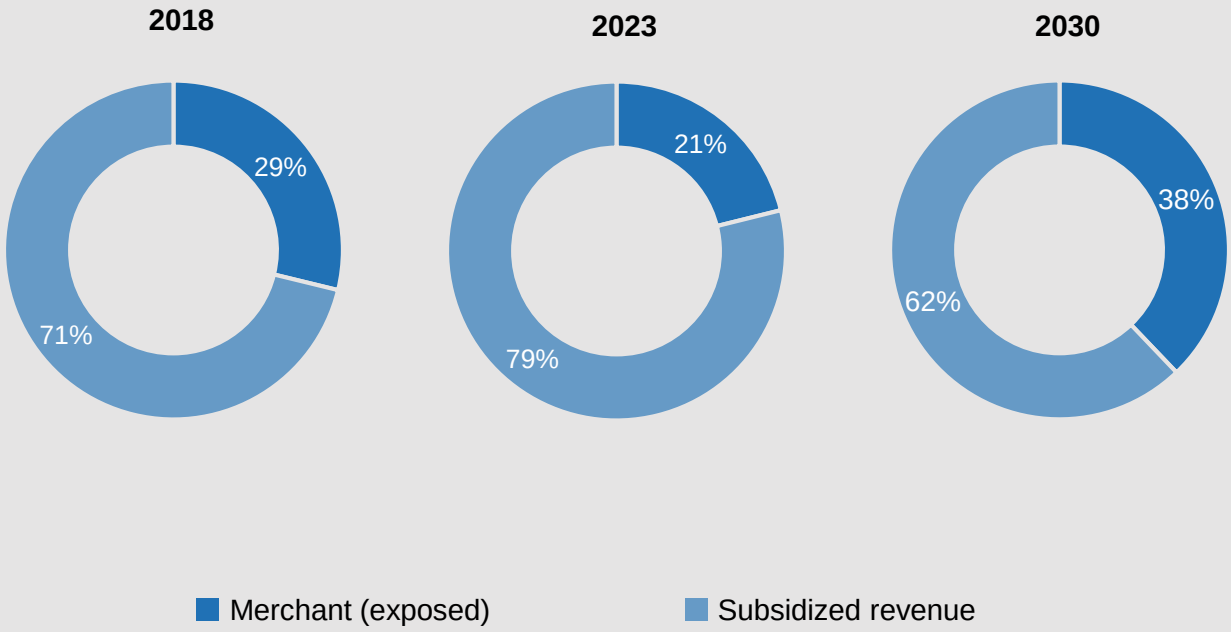
Installed capacity electricity by exposure[1]



[1] Pro-rata share based on Vattenfall ownership
[2] Hollandse Kust Zuid 1 & 2 (COD dependent upon granting of irrevocable permit and FID)

High share of decided wind investments on fixed tariffs

Revenue development Wind portfolio



Comments

- Portfolio of wind projects in operation or already decided contribute over 75% fully subsidized revenue in the coming 10 years (over 60% in NPV terms[1])
- Exposure to merchant driven subsidies (el certs in Sweden) is extremely limited (<1% total revenue)

[1] Based on 7% discount factor

Managing risk in an increasingly competitive landscape

Portfolio level measures

Remaining an integrated utility operating across the value chain with a **Diversified production portfolio**

Effective ERM process allowing for portfolio risk management and insights

Hedge strategy minimizing short term cash flow volatility

Project level measures

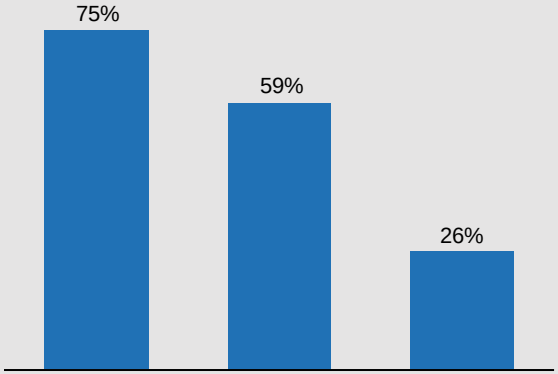
Corporate PPAs create power price certainty

Partnering can limit absolute project level merchant exposure

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.

Estimated Nordic[1] hedge ratio (%) and indicative prices



Average indicative Nordic hedge prices in EUR/MWh

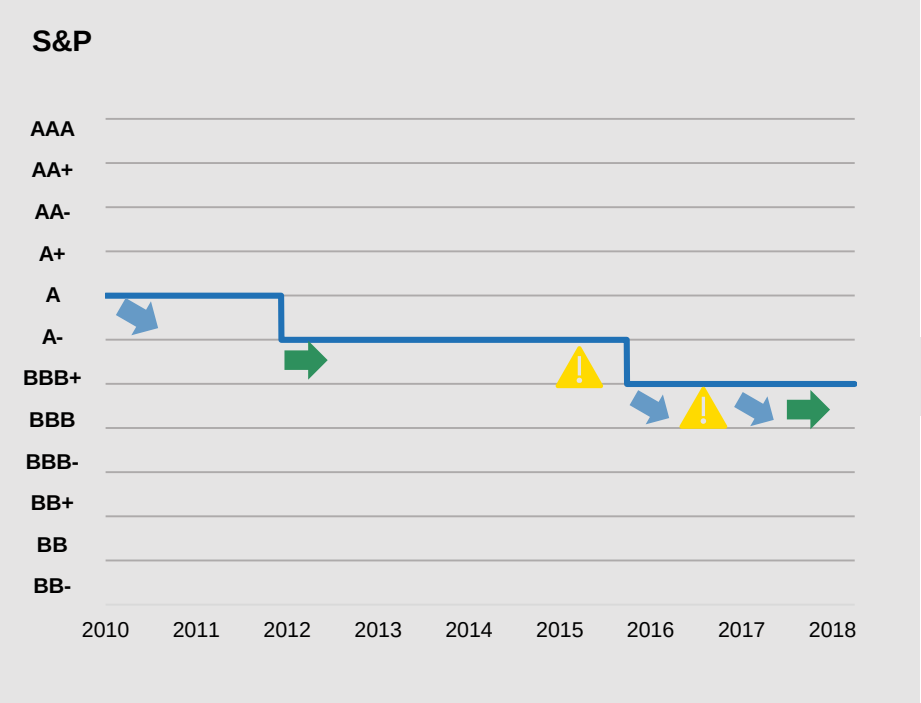
2018	2019	2020
27	27	30

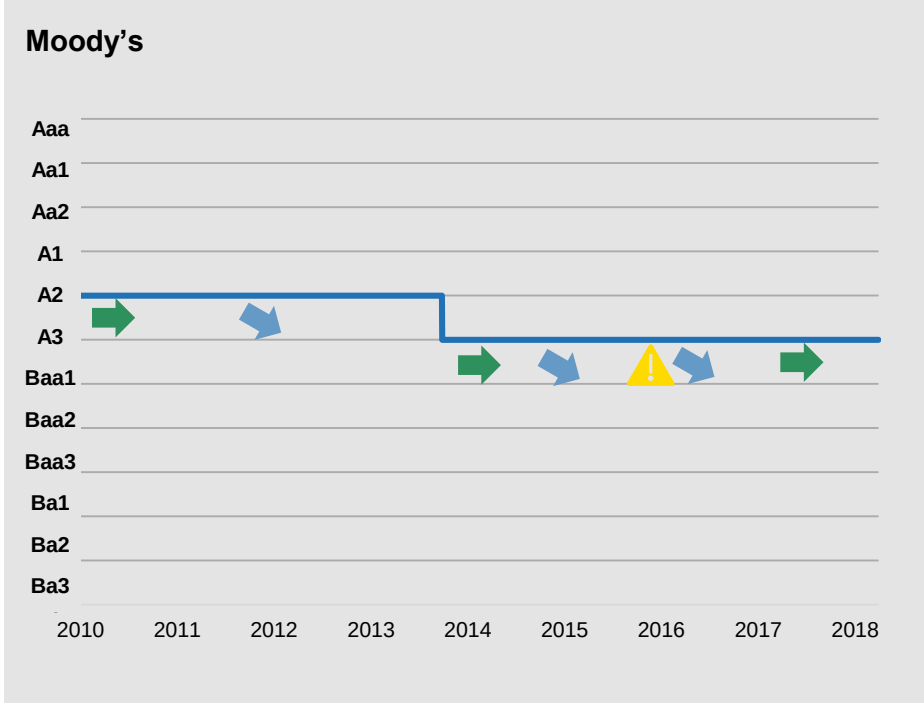
Sensitivity analysis – Continental[2] portfolio

Market quoted	+/- 10% price impact on future profit before tax, MSEK[3]			
	2018	2019	2020	Observed yearly volatility
Electricity	+/- 783	+/- 1301	+/- 1305	15% - 19%
Coal	-/+ 268	-/+ 293	-/+ 263	20% - 29%
Gas	-/+ 740	-/+ 668	-/+ 664	11% - 16%
CO_2	-/+ 210	-/+ 248	-/+ 293	36% - 47%

[1] Nordic: SE, DK, NO, FI
[2] Continental: DE, NL, UK
[3] The denotation +/- entails that a higher price affects operating profit favourably, and -/+ vice versa

Credit rating stabilized





Credit watch - negative

Negative outlook

Stable outlook

Continued strong liquidity position

Group liquidity	SEK bn
Cash and cash equivalents	14.4
Short term investments	18.1
Reported cash, cash equivalents & short term investments	**32.5**
Unavailable liquidity[1]	-7.3
Available liquidity	**25.2**

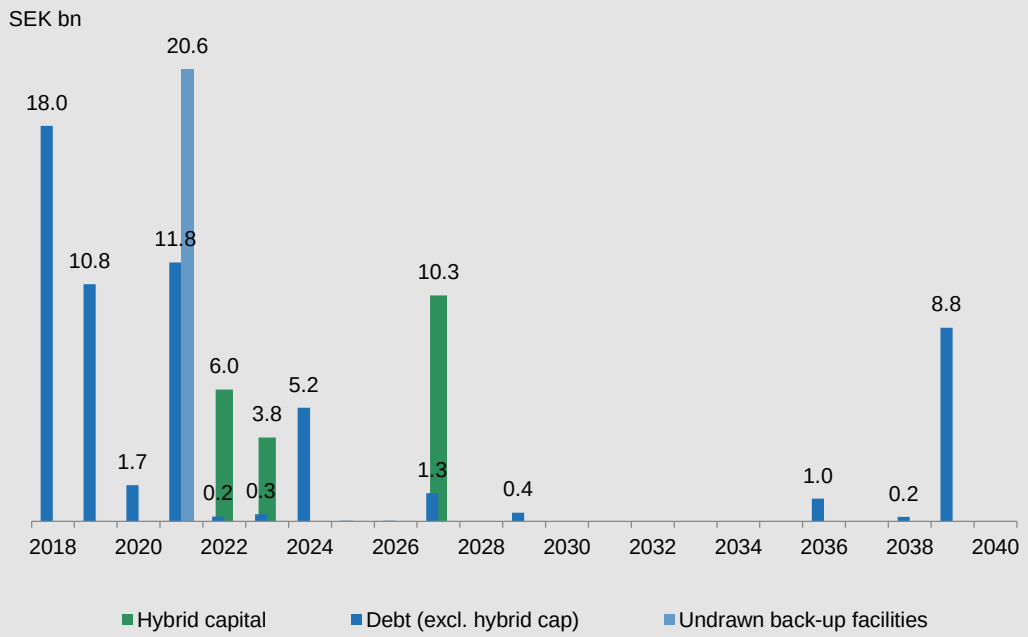
Committed credit facilities	Facility size, EUR bn	SEK bn
RCF (maturity Dec 2021)	2.0	20.6
Total undrawn		20.6

Debt maturities[2]	SEK bn
Within 90 days	17.6
Within 180 days	18.0

As per 31 March 2018 available liquid assets and/or committed credit facilities amounted to 33% of net sales. Vattenfall's target is to maintain a level of no less than 10% of net sales, but at least the equivalent of the next 90 days' maturities

[1] German nuclear "Solidarvereinbarung" SEK 3.7 bn, Margin calls paid (CSA) SEK 2.7 bn, Insurance "Provisions for claims outstanding" SEK 0.9 bn
[2] Excluding loans from minority owners and associated companies

Debt maturity profile[1]



	31 Mar. 2018	31 Dec. 2017
Duration (years)	4.4	4.3
Average time to maturity (years)	6.6	6.9
Average interest rate (%)	4.4	4.4
Net debt (SEK bn)	64.4	59.3
Available group liquidity (MSEK)	25.2	19.9
Undrawn committed credit facilities (MSEK)	20.6	19.7

Cumulative maturities excl. undrawn back-up facilities

	2018-2020	2021-2023	From 2024
Debt incl. hybrid capital	30.5	22.1	27.2
% of total	*38%*	*28%*	*34%*

[1] Loans from associated companies, minority owners, margin calls received (CSA) and valuation at fair value are excluded and currency derivatives for hedging debt in foreign currency are included

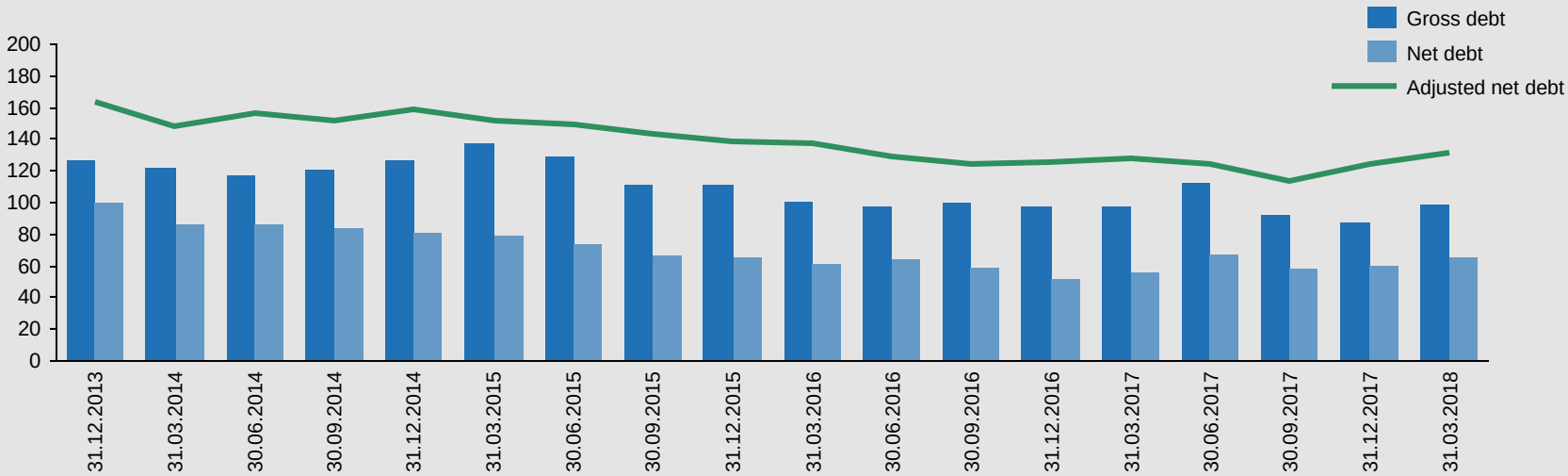
Bond issuance programme

Vattenfall´s bond issuance programme is now regulated under Swedish legislation and new bonds will be issued on Nasdaq Stockholm

- Vattenfall's bond issuance programme, Euro Medium-Term Note programme (EMTN), has been updated as of 18 April 2018
- New programme regulated under Swedish law and new bonds will be issued on Nasdaq Stockholm
- Existing outstanding bonds of EUR 4.2 billion will remain regulated under English law but have been dual listed on Nasdaq Stockholm
- Hybrid bonds of approximately EUR 1.9 billion have also been dual listed on Nasdaq Stockholm
- Having the EMTN programme governed under Swedish law will contribute to improved efficiency and simplicity in our financial operations

Appendix

Debt development



Net debt increased by SEK 5.1 bn compared with the level at 31 Dec. 2017. Adjusted net debt increased by SEK 6.5 bn to SEK 130.9 bn at 31 March 2018.

Reported and adjusted net debt

Reported net debt (SEK bn)	31 Mar. 2018	31 Dec. 2017
Hybrid capital	-19.6	-19.1
Bond issues and commercial papers and liabilities to credit institutions	-57.0	-52.1
Liabilities to associated companies	-0.7	-0.5
Liabilities to minority shareholders	-10.4	-10.4
Other liabilities	-9.8	-5.1
Total interest-bearing liabilities	**-97.5**	**-87.2**
Reported cash, cash equivalents & short-term investments	32.5	26.9
Loans to minority owners of foreign subsidiaries	0.7	1.0
Net debt	**-64.4**	**-59.3**

Adjusted net debt (SEK bn)	31 Mar. 2018	31 Dec. 2017
Total interest-bearing liabilities	-97.5	-87.2
50% of Hybrid capital	9.8	9.6
Present value of pension obligations	-43.3	-42.0
Wind & other environmental provisions	-6.8	-6.5
Provisions for nuclear power (net)	-30.8	-30.7
Margin calls received	3.3	3.3
Liabilities to minority owners due to consortium agreements	9.2	9.2
= Adjusted gross debt	**-156.1**	**-144.3**
Reported cash, cash equivalents & short-term investments	32.5	26.9
Unavailable liquidity	-7.3	-7.0
= Adjusted cash, cash equivalents & short-term investments	**25.2**	**19.9**
= Adjusted net debt	**-130.9**	**-124.4**

Nuclear provisions as of Q1 2018

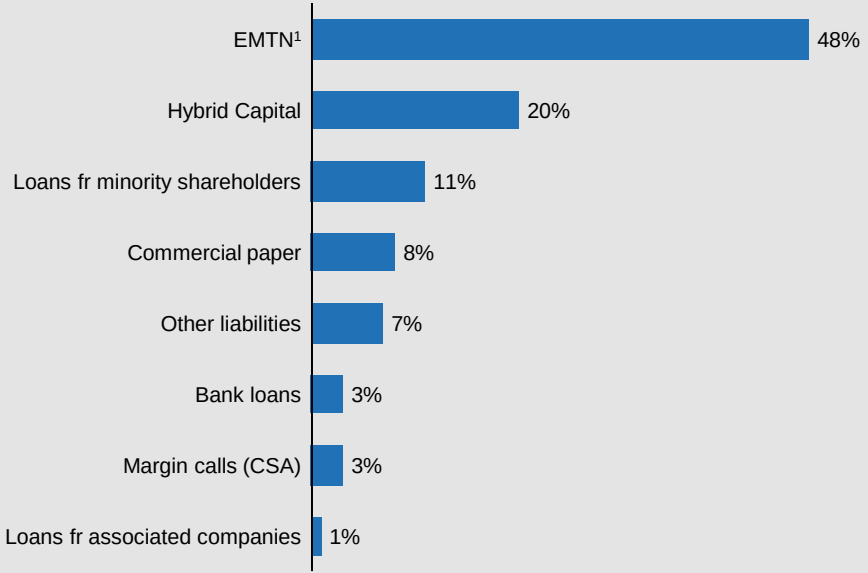
Reactor	Net capacity (MW)	Start (year)	Vattenfall share (%)	Vattenfall provisions, SEK bn (IFRS accounting)	Vattenfall provisions, SEK bn (pro rata)	Sw nuclear waste fund SEK bn (Vattenfall pro rata share)
Ringhals 1	879	1976	70.4			
Ringhals 2	809	1975	70.4			
Ringhals 3	1,070	1981	70.4			
Ringhals 4	942	1983	70.4	**Total Ringhals: 29.0**	**Total Ringhals: 29.0[1]**	
Forsmark 1	984	1980	66.0			
Forsmark 2	1,120	1981	66.0			
Forsmark 3	1,170	1985	66.0	**Total Forsmark: 24.7**	**Total Forsmark: 16.3**	
Total Sweden	**6,974**	**-**		**53.9[2]**	**45.5[2]**	**32.9[3]**
Brunsbüttel	771	1977	66.7	11.8	7.9	
Brokdorf	1,410	1986	20.0	0	3.1	
Krümmel	1,346	1984	50.0	6.9	6.9	
Stade[4]	640	1972	33.3	0	1.0	
Total Germany	**4,167**	**-**	**-**	**18.7**	**18.8**	
Total SE & DE	**11,141**			**72.6**	**64.3**	

[1] Vattenfall is 100% liability of Ringhals decommissioning, while owning only 70.4%
[2] Total provisions in Sweden (IFRS accounting) include provisions of SEK 0.2 bn related to Ågesta
[3]) Vattenfall's share of the Nuclear Waste Fund (book value). IFRS consolidated value is SEK 39.1 bn.
[4]) Stade is being dismantled

Breakdown of gross debt as of Q1 2018

Total debt: SEK 97.5 bn (EUR 9.5 bn)

External market debt: SEK 86.4 bn (EUR 8.4 bn)



Debt issuing programmes	Size (EUR bn)	Utilization (EUR bn)
EUR 10bn Euro MTN	10.0	4.2
EUR 2bn Euro CP	2.0	1.4
SEK 15bn Domestic CP	1.5	0.0
Total	13.5	5.7

- All public debt is issued by Vattenfall AB
- The main part of debt portfolio has no currency exposure that has an impact on the income statement. Debt in foreign currency is either swapped to SEK or booked as hedge against net foreign investments.
- No structural subordination

[1] EMTN = Euro Medium Term Notes

Panel discussions

Climate smart conventional power is a critical component of the journey toward a sustainable energy system

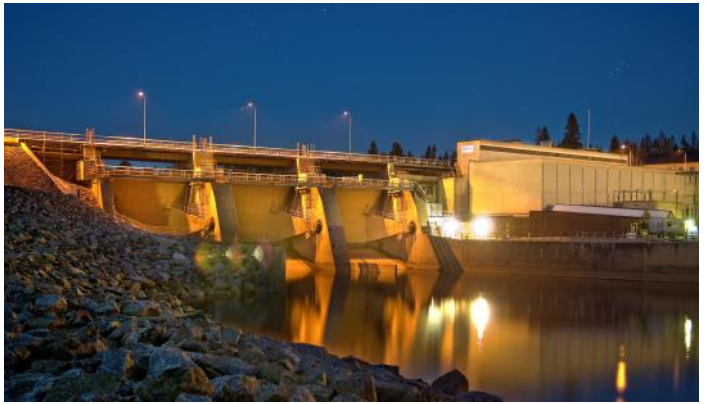
Panel 1

Situation

- Conventional generation (gas, coal, hydro & nuclear) can produce 24 hours per day, 7 days a week, 52 weeks per year…
- …but also be adjusted – up and down – to whatever the momentary demand - net of renewables – for power there is…
- … making the balancing of the system a manageable task.
- Production technologies are mature and availability high.
- A significant share of the coal fleet will be de-commissioned over the coming 10 years – and to some extent nuclear.

Complication

- Electrification of transportation and industry is expected to increase demand for power significantly over the coming 20 years.
- Renewable, intermittent, capacities will grow strongly, creating even more need for flexibility – and putting additional strains on the networks.
- New flexible power production facilities are not economically viable.
- So the question is, as the system tightens, and demand for power (energy) AND flexibility (capacity) increases – will we see a new golden age for existing climate smart (conventional) production? And how can the networks contribute?



- Tuomo Hatakka, Head of BA Heat
- Torbjörn Wahlborg, Head of BA Generation
- Jesper Karpsen, VP Network Solutions, BA Distribution
- Helle Herk-Hansen, VP Environment

The new European utility model is rapidly taking shape

Panel 2

Situation

- Customers are becoming more engaged in a climate friendly energy supply – but often do not want to be involved.
- Wind and Solar technologies have learning and scale curves creating lower and lower cost – ending as the cheapest way to create new MWhs (energy).
- Decentralized renewable energy is also becoming increasingly economically relevant for the customer and therefore the energy system.
- Renewable intermittent production requires continuous adaptation of the energy system. Digitalization of the entire value chain will be key.

Complication

- Climate smart and simplicity are key words – both are challenges to traditional utilities.
- The sharply falling costs are already taking renewables out of subsidy dependence – into – largely fossil fuel dependent, wholesale price risk.
- The new system will need to be optimized more and on several levels – no longer a TSO fixes it situation.

- Martijn Hagens, Head of BA Customers & Solutions
- Gunnar Groebler, Head of BA Wind
- Niek den Hollander, Head of BA Markets
- Caroline Häggström, VP Customer Service

Operating segments

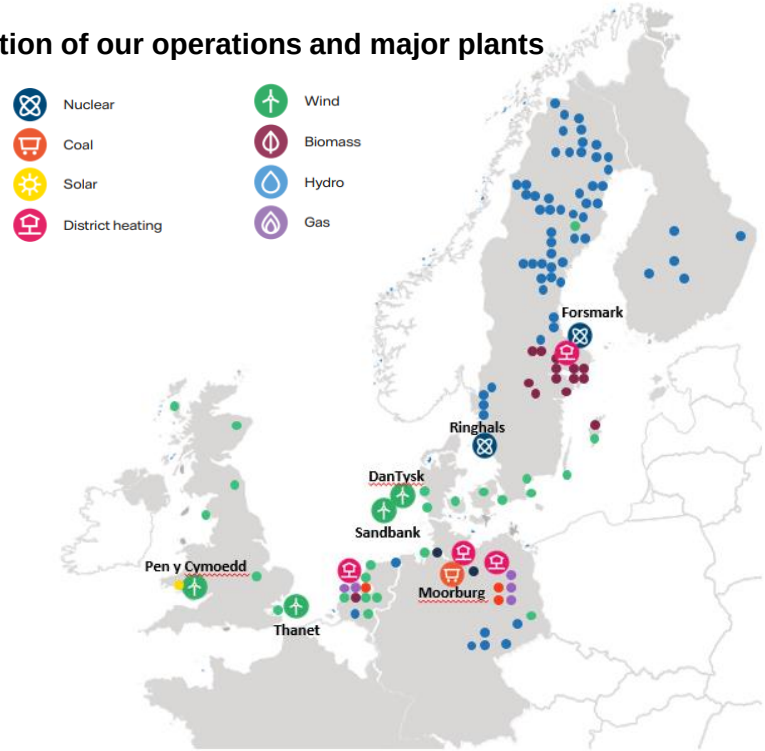
Introduction to operating segments

Overview of operations and major assets

Our operating segments

- *Customers & Solutions* - Responsible for sales of electricity, gas and energy services in all of Vattenfall's markets
- *Power Generation* - Comprises the Generation and Markets Business Areas. The segment includes Vattenfall's hydro and nuclear power operations, maintenance services business, and optimisation and trading operations
- *Wind* - Responsible for development and operation of Vattenfall's wind farms as well as large-scale and decentralized solar power and batteries
- *Heat* - Responsible for Vattenfall's heat operations including sales, and gas and coal-fired condensing
- *Distribution* - Responsible for Vattenfall's electricity distribution operations in Sweden and in Berlin, Germany

Location of our operations and major plants

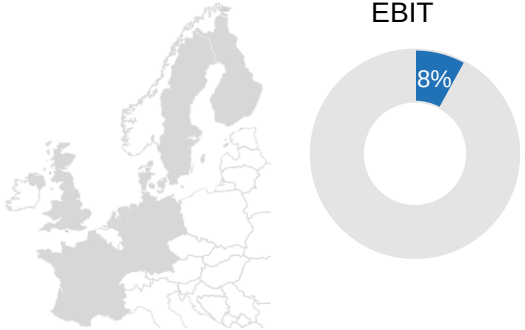


Customers & Solutions

Leading market position in the retail segment in Sweden, the Netherlands, Hamburg and Berlin

Overview

- Leading position in Sweden with more than 900,000 retail electricity customers
- Leading position in Berlin and Hamburg as an electricity supplier and one of the leaders in gas



Key data

	FY 2017	FY 2016
Net sales (SEK bn)	69.1	69.2
External net sales (SEK bn)	67.5	67.9
Underlying EBIT[1] (SEK bn)	1.9	1.8
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
Electricity customers	6,450,000	6,300,000
Gas customers	2,340,000	2,200,000

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

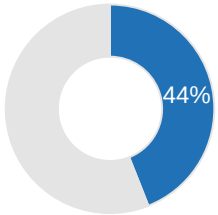
Power Generation

One of Europe’s largest providers of fossil-free electricity

Overview

- Includes Vattenfall’s hydro and nuclear power operations, maintenance services business, and optimisation and trading operations
- Operates 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 a total generation of 87.5 TWh, out of which 32.3 TWh from Swedish hydro power and 51.9 TWh from Swedish nuclear power

Share of underlying EBIT



Key data

	FY 2017	FY 2016
Net sales (SEK bn)	94.4	99.0
External net sales (SEK bn)	43.6	49.3
Underlying EBIT[1] (SEK bn)	10.8	11.4
Electricity generation (TWh)[2]	87.5	81.7
Sales of electricity (TWh)[2]	23.7	33.2
- of which, resellers	20.5	31.6
- of which, business customers	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.

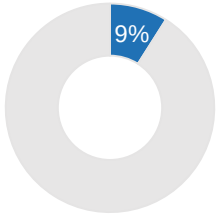
Wind

One of the biggest producers of offshore wind in the world

Overview

- One of the biggest producers of onshore wind power in Denmark and the Netherlands
- 354 MW of new renewable capacity installed in 2017

Share of underlying EBIT

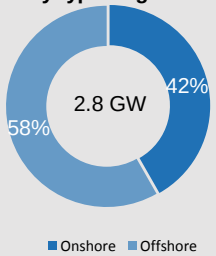


Key data

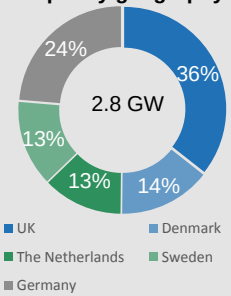
	FY 2017	FY 2016
Net sales (SEK bn)	9.4	6.7
External net sales (SEK bn)	6.7	4.4
Underlying EBIT[1] (SEK bn)	2.1	0.9
Electricity generation (TWh)	7.6	5.8
Investments[2] (SEK bn)	7.1	8.3

[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..

Split by type of generation



Split by geography



Operating wind farms, construction and pipeline

In operation

Name	Capacity (MW)	Country
Thanet	300	UK
Ormonde (51%)	150	UK
Kentish Flats	90	UK
Kentish Flats extension	50	UK
Pen y Cymoedd	228	UK
Ray	54	UK
Lillgrund	111	SE
Stor-Rotliden	78	SE
Horns Rev 1 (60%)	158	DK
Klim (98%)	67	DK
DanTysk (51%)	288	DE
Sandbank (51%)	288	DE
Alpha ventus (26%)	60	DE
Nordzee Wind (50%)	108	NL
Prinsess Alexia	122	NL
Other offshore	10	
Other onshore	669	
Total 2,764 MW		

Wind farms above >50 MW

Under construction

Name	Capacity (MW)	Commissioning	Country
Aberdeen	92	2018	UK
Horns Rev 3	406	2019	DK
Slufterdam	29	2019	NL
Wieringermeer	180	2020	NL
Total 707 MW			

Pipeline

Name	Capacity (MW)	Commissioning	Country
Wieringermeer ext.	~118	2019	NL
Blakliden + Fäbodberget	~354	2022	SE
South Kyle	~200	2021	UK
NK II	~120	2021	DK
Danish Near Shore	344	2021	DK
Danish Kriegers Flak	602	2021	DK
Hollandse Kust	700-750	2023	NL
Sandbank Plus	<250	2024	DE
Thanet Extension	272	2024	UK
Norfolk Vanguard	1,800	2027	UK
Norfolk Boreas	1,800	2028	UK
Total ~6.5 GW			

VATTENFALL

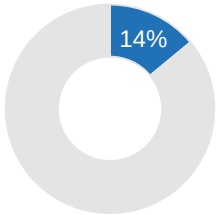
Heat

One of Europe’s largest producers and distributors of heat

Overview

- 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 three years ahead of schedule and saving 600 $KtCO_2$/year

Share of underlying EBIT



Key data

	FY 2017	FY 2016
Net sales (SEK bn)	30.7	28.4
External net sales (SEK bn)	14.9	15.1
Underlying EBIT[1] (SEK bn)	3.4	3.2
Sales of heat (TWh)	18.8	20.3
Electricity generation[2] (TWh)	32.2	31.5
- 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, NO_x (ktonnes)	9.8	10.2
Sulphur dioxide, SO_2 (Ktonnes)	4.4	4.2
Particulates (ktonnes)	0.3	0.3

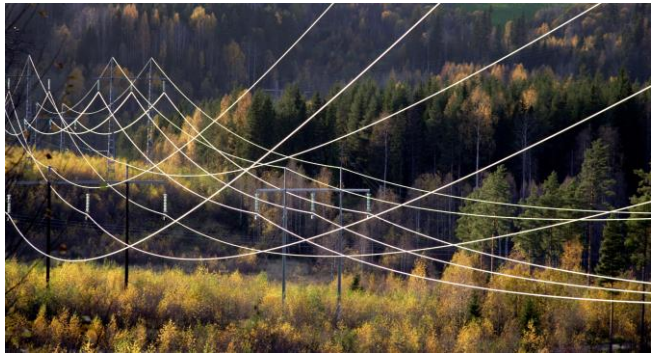
[1] Underlying operating profit is defined as operating profit excluding items affecting comparability.
[2] Values have been adjusted compared with information previously presented in Vattenfall’s 2016 Annual and Sustainability Report.

Distribution

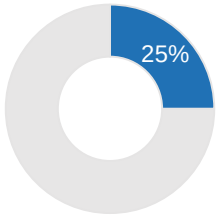
Leading owner and operator of electricity distribution networks in Sweden and Berlin, Germany and expansion into the UK

Overview

- Leading owner and operator of electricity distribution networks in Sweden
- Approximately 3.3 million business and household customers in Sweden and in Berlin, Germany



Share of underlying EBIT



Key data

	FY 2017	FY 2016
Net sales (SEK bn)	21.5	19.7
External net sales (SEK bn)	16.9	15.2
Underlying EBIT[1] (SEK bn)	6.1	4.9
Investments[2] (SEK bn)	5.5	5.5

[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.

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Investor webpage / Financial reports & presentations

Financial calendar

20 July 2018	Interim report January-June
30 October 2018	Interim report January-September
7 February 2019	Year-end report for 2018