Financial performance and position

Improved electricity prices, but very low hydro volumes ended a challenging year – Multi-year investment programme in Russia completed.

Key financial ratios[1)]

	2016	2015	2014	Change 16/15
Return on capital employed, %	4.0	22.7	19.5	-82%
Comparable net debt/EBITDA	0.0	-1.7	2.3	100%

1) Key financial ratios are based on total Fortum, including discontinued operations. See ▸ *Definitions of key figures.*

Key figures

EUR million	2016	2015	2014	Change 16/15
IS Sales	3,632	3,459	4,088	5%
Comparable EBITDA				
IS Continuing operations	1,015	1,102	1,457	-8%
Discontinued operations	-	163	416	
Total Fortum	1,015	1,265	1,873	-20%
Comparable operating profit				
IS Continuing operations	644	808	1,085	-20%
Discontinued operations	-	114	266	
Total Fortum	644	922	1,351	-30%
Operating Profit				
IS Continuing operations	633	-150	1 296	522%
Discontinued operations	-	4,395	2,132	
Total Fortum	633	4,245	3,428	-85%
Share of profits from associates and joint ventures				
IS Continuing operations	131	20	146	555%
Discontinued operations	-	0	3	
Total Fortum	131	20	149	555%
Profit before taxes				
IS Continuing operations	595	-305	1,232	295%
Discontinued operations	-	4,393	2,128	
Total Fortum	595	4,088	3,360	-85%
Earnings per share, EUR				
IS Continuing operations	0.56	-0.26	1.22	315%
Discontinued operations	-	4.92	2.33	
Total Fortum	0.56	4.66	3.55	-88%
CF Net cash from operating activities, continuing operations	621	1,228	1,406	-49%
Shareholders' equity per share, EUR	15.15	15.53	12.23	-2%
Interest-bearing net debt (at end of period)	-48	-2,195	4,217	98%

2016 was a challenging year in many respects. The beginning of the year was characterised by increased commodity market volatility; especially coal and oil prices were very low. Nordic water reservoirs were clearly above the long-term average, creating pressure on electricity prices, and the British EU exit vote also created uncertainty. Late in the year, however, some positive signs were seen on the power market, mainly driven by improved commodity and emission prices, although the overall business environment still continued to be demanding. Although some European economies have started to recover, the industry's power demand is still too weak and commodity prices are too low and volatile to support a material increase in electricity prices.

A positive development in 2016 was the Swedish government's budget proposal in September; it included the timetable for lowering the real-estate tax on hydro assets and for phasing out the nuclear capacity tax over the coming years. We are pleased with the swift decision and the finalisation of a timetable, which gives regulatory stability to operate the plants and plan the necessary safety investments. This is completely in line with what we have been advocating for, a regulation and taxation policy where the different forms of production are treated more equally.

Operationally, the year met our expectations, as availability in our plants was good and ongoing projects progressed as planned. We completed our extensive investment programme in Russia in the spring 2016, and the new capacity has been the key driver for the earnings growth in the Russia division.

In February, we published the key high-level elements in our strategy. We also adjusted our operational model to better enable strategy implementation. During the year we screened opportunities in line with our strategy. The acquisition of the Polish electricity and gas sales company DUON, wind power investments in Sweden, Norway and Russia, and the acquisition of Ekokem, a leading Nordic circular economy company, are important steps in the implementation of our strategy and give us access to new revenue streams independent of the Nordic power

price. In addition, as we are continuously looking to optimise our production fleet, we divested the Tobolsk power plant in Russia.

We updated our vision and mission in the autumn. Our vision and mission go beyond just clean energy production, they express our commitment to fuel and resource efficiency and how we enable our stakeholders, customers and society to make sustainable choices. Our updated vision – 'For a cleaner world' reflects our ambition to drive the transformation towards an low-emission energy system and optimal resource efficiency. Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions.

We expect the energy sector transformation to accelerate in the future. At the same time as we lower the cost and improve the productivity of our existing operations, we will focus on additional organic and M&A growth opportunities. We have two phases in our capital redeployment. Priority one in phase one is generation consolidation in Europe – consolidation of assets and businesses within our core competence and giving us direct access to cash flows. Priority two in phase one is to take the competencies that we have today in our combined heat and power production and in the acquired Ekokem business, and widen the City Solution's scope. The overall goal of phase one is to maximize our cash flow to enable both a competitive dividend and "phase two" investments into the future energy system. Phase two involves growing in solar and wind, and new internal or external energy ventures to take care of our long-term competitiveness.

Fortum's vision, strategic cornerstones and updated financial targets

In February 2016, Fortum launched its new vision, strategic cornerstones and updated financial targets. The new vision and strategy target growth and continued profitability with a strong focus on clean energy, customers and shareholder value creation.

The long-term financial target for return on capital employed (ROCE) was revised to at least 10%, while the target for comparable net debt to EBITDA, around 2.5 times, remained unchanged. The dividend policy also remained unchanged.

Fortum's strategy has four cornerstones: (1) enhance productivity of the current fleet and drive industry transformation, (2) create sustainable solutions for growing cities and urban areas, (3) increase investments in solar and wind power, and (4) build new energy ventures.

At Fortum's Capital Market Day in November 2016, the strategy execution plan was expanded in more depth. The redeployment of cash and the execution of Fortum's strategy will take place in two phases, and a significant part of the redeployment is targeted to take place during 2017.

Phase 1: The goal for the first phase is to maximise cash flow through capital redeployment. The priority is consolidation of the generation business in Europe. After this, and subject to the remaining financial headroom, also further organic growth and/or acquisition-based growth of City Solutions will be considered, mainly in Europe. The resulting cash flow will be used for two purposes: 1) implementing Fortum's dividend policy; and 2) investments into Phase 2 as described below. In addition, Fortum will continue its cost and asset portfolio optimisation in all divisions, informing the market about these as they advance.

Phase 2: The goal for the second phase is to secure Fortum's longer-term competitiveness. This has already started through wind investments in our Nordic and Russian home markets and through solar investments in India. The next steps will include solar-enabled system solutions, maximising the added value from waste and biomass as well as minimising fossil emissions. In addition, phase 2 will also include new digital services, services for active consumers, electric traffic, new storage solutions, and other potentially disruptive innovations.

Fortum also updated its vision and mission to cover a broader scope. "For a cleaner world" reflects the company's mission "We engage our customers and society to drive the change towards a cleaner world. Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. In this way we deliver excellent shareholder value."

Reorganisation of operations

Fortum reorganised its operating structure in April 2016. The target of the new organisation is to enable the implementation of the company's new vision and strategy. The new organisation consists of three business divisions: Generation, City Solutions and Russia. In addition, two development units focusing on growing new businesses were established: (1) M&A and Solar & Wind Development, and (2) Technology and New Ventures.

The changes to Fortum's segment reporting were minor. The company continues to have four segments. The segments as of the second quarter of 2016 are: Generation (mainly the former Power and Technology); City Solutions (mainly the former Heat, Electricity Sales and Solutions); Russia; and Other, under which M&A, Solar & Wind Development, and Technology and New Ventures, as well as corporate functions are reported. Some businesses were repositioned due to the reorganisation, but because of the minor financial impact, the comparable segment information for 2015 has not been restated.

Following the divestment of the Swedish distribution business, Fortum no longer has electricity distribution operations. The Distribution segment was reclassified as discontinued operations as of the first quarter of 2015.

New Finnish GAAP requirement for financial derivatives

A new requirement issued by Finnish Accounting Board relating to accounting for financial derivatives was published 13 December 2016. The requirements have to be applied in 2016 separate financial statements for Finnish companies. Based on this requirement Fortum has chosen to apply IFRS principles for accounting financial derivatives in Fortum Oyj and its Finnish subsidiaries.

Applying IFRS principles means that financial derivatives are fair valued at each balance sheet date, which may create volatility in income statement and equity. The changes due to the new requirement has no effect to Fortum Group, but had a minor effect to net profit and equity of Fortum Oyj in 2016.

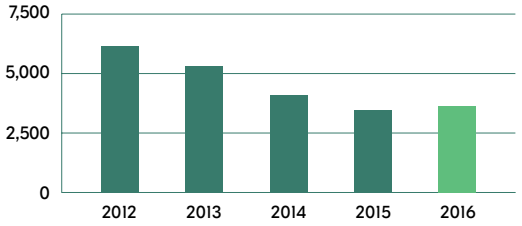
Comparability of information presented in tables and graphs

Fortum has restated the financial information in prior years as follows:

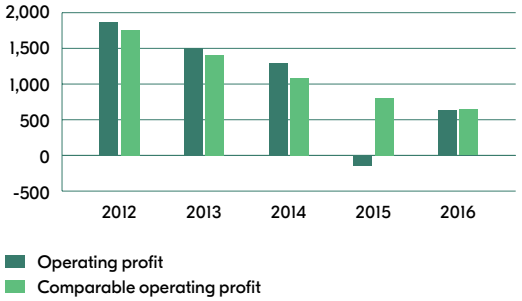
- Distribution segment is treated as discontinued operations in 2015. The comparative period information for 2014 was restated accordingly, but information in the tables and graphs presented for year 2013 or earlier is not restated due to reclassification of discontinued operations. Financial results discussed in this operating and financial review are for the continuing operations of Fortum Group. See additional information in ▸ *Note 14* Discontinued operations.
- Furthermore, information in the tables and graphs presented for year 2012 or earlier is not restated due to the adoption of IFRS 10 and IFRS 11. Adoption of standards influences treatment of Fortum's holding in AB Fortum Värme samägt med Stockholms stad in the consolidated financial statements.

In addition, as of 2014, presented figures have been rounded and consequently the sum of individual figures may deviate from the sum presented. Figures in brackets refer to the comparison period unless otherwise stated.

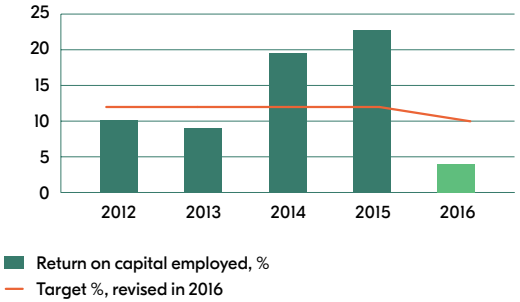
Sales, EUR million



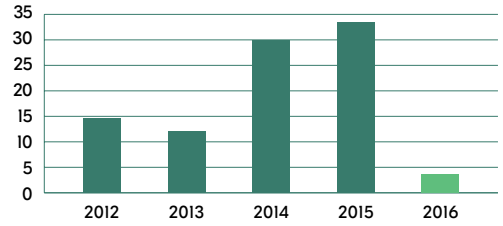
Operating profit and comparable operating profit, EUR million



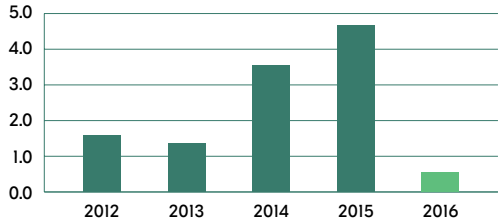
Return on capital employed total Fortum, %



Return on shareholders' equity total Fortum, %



Earnings per share total Fortum, EUR



Financial results

Sales by segment

EUR million	2016	2015	Change 16/15
Generation	1,657	1,722	-4%
City Solutions	1,424	1,187	20%
Russia	896	893	0%
Other	121	114	6%
Netting of Nord Pool transactions [1]	-384	-336	
Eliminations	-82	-122	
IS Total continuing operations	**3,632**	**3,459**	**5%**
Discontinued operations	-	274	
Eliminations	-	-31	
Total Fortum	**3,632**	**3,702**	**-2%**

1) Sales and purchases with Nord Pool are netted at the Group level on an hourly basis and posted either as revenue or cost depending on whether Fortum is a net seller or net buyer during any particular hour.

Comparable EBITDA by segment

EUR million	2016	2015	Change 16/15
Generation	527	680	-23%
City Solutions	238	209	14%
Russia	312	267	17%
Other	-61	-53	-15%
IS Total continuing operations	**1,015**	**1,102**	**-8%**
Discontinued operations	-	163	
Total Fortum	**1,015**	**1,265**	**-20%**

Comparable operating profit by segment

EUR million	2016	2015	Change 16/15
Generation	417	561	-26%
City Solutions	112	108	4%
Russia	191	201	-5%
Other	-76	-63	-21%
IS Total continuing operations	**644**	**808**	**-20%**
Discontinued operations	-	114	
Total Fortum	**644**	**922**	**-30%**

Operating profit by segment

EUR million	2016	2015	Change 16/15
Generation	338	-396	185%
City Solutions	145	105	38%
Russia	226	203	11%
Other	-76	-62	-23%
IS Total continuing operations	**633**	**-150**	**522%**
Discontinued operations	-	4,395	
Total Fortum	**633**	**4,245**	**-85%**

For further information see ▸ *Note 5* Segment reporting.

In 2016, sales were EUR 3,632 (3,459) million. Comparable EBITDA totalled EUR 1,015 (1,102) million. Comparable operating profit totalled EUR 644 (808) million and reported operating profit totalled EUR 633 (-150) million. Fortum's operating profit for the period was impacted by items affecting comparability, including sales gains, Ekokem transaction costs, updated provisions and an IFRS accounting treatment (IAS 39) of derivatives mainly used for hedging Fortum's power production, as well as nuclear fund adjustments for continuing operations, amounting to EUR -11 (-958) million (▸ *Note 5* and ▸ *Note 6*). The year 2015 included a EUR -794 million impact from the decision on the early closure of two nuclear units in Sweden (▸ *Note 5* and ▸ *Note 7*).

The share of profit from associates was EUR 131 (20) million, of which Hafslund represented EUR 51 (39) million, TGC-1 EUR 38 (32) million, Fortum Värme EUR 66 (47) million and OKG EUR -30 (-107) million. The share of profit from Hafslund and TGC-1 are based on the companies' published Q4 2015 and Q1–Q3 2016 interim reports (▸ *Note 20*). The OKG impact comes from the new technical plan for nuclear waste management (▸ *Note 30)*. Year 2015 was affected by the decision on the early closure of two nuclear units in Sweden, which impacted the share of profit from associates by EUR -116 million (▸ *Note 7*). In addition, Fortum Värme's share of profit in 2015 was lower mainly due to the paid compensation for refinancing the interest-bearing loans from Fortum.

Net financial expenses were EUR -169 (-175) million and include changes in the fair value of financial instruments of EUR -2 (-18) million. In 2015, net financial expenses included compensation of EUR 37 million from the prepayment of loans by Fortum Värme (▸ *Note 12*).

Profit before taxes was EUR 595 (-305) million. Year 2015, was impacted by EUR -910 million due to the decision on the early closing of the two nuclear units in Sweden.

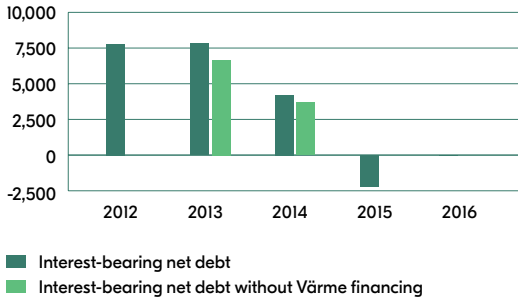
Taxes for the period totalled EUR -90 (78) million. The effective income tax rate according to the income statement was 15.2% (25.4%). The comparable effective income tax rate, excluding the impact of the share of profit from associated companies and joint ventures as well as non-taxable capital gains, was 20.0% (23.5%) (▸ *Note 13)*.

The profit for the period for continuing operations was EUR 504 (-228) million. Earnings per share for continuing operations were EUR 0.56 (-0.26), of which EUR -0.02 (-0.97) per share relates to items affecting comparability. In 2015, the impact of the decision on the early closure of two nuclear units in Sweden was EUR -0.82 per share.

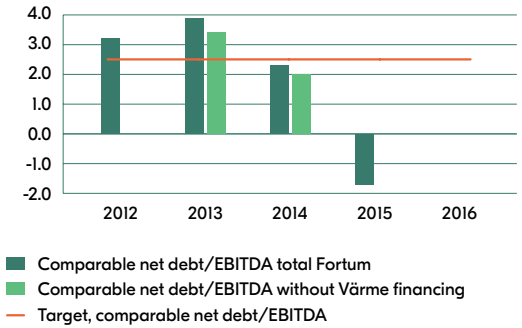
Financial position and cash flow

EUR million	2016	2015	Change 16/15
Interest expense	-169	-203	17%
Interest income	30	51	-41%
Fair value gains and losses on financial instruments	-2	-18	89%
Other financial expenses - net	-29	-4	-625%
IS Finance costs - net	**-169**	**-175**	**3%**
Interest-bearing liabilities	5,107	6,007	-15%
Less: Liquid funds	5,155	8,202	-37%
Interest-bearing net debt	**-48**	**-2,195**	

Interest-bearing net debt, EUR million



Comparable net debt/EBITDA



Cash flow

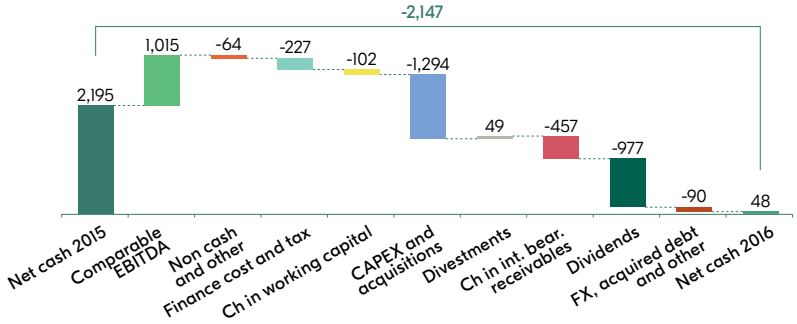
In 2016, net cash from operating activities from continuing operations decreased by EUR 607 million to EUR 621 (1,228) million, mainly due to EUR 87 million lower comparable EBITDA, EUR 151 million higher income taxes paid, EUR -182 million lower realised foreign exchange gains and losses, and an EUR 131 million increase in working capital. The increase in working capital is mainly due to the daily cash settlements for futures in Nasdaq OMX Commodities Europe (▸ *Additional cash flow information*). In June, Fortum paid income taxes in Sweden totalling EUR 127 million regarding tax disputes. The appeal process is ongoing and based on legal opinions, no provision is made, and the payment is booked as a receivable (▸ *Note 38*). Realised foreign exchange gains and losses of EUR 110 (292) million relate to the rollover of foreign exchange contract hedging loans to Fortum's Swedish and Russian subsidiaries.

Capital expenditures increased by EUR 72 million to EUR 599 (527) million. Net cash used in investing activities increased to EUR 1,701 (35) million, due to the acquired shares of EUR 695 (43) million related mainly to acquisitions of Ekokem and DUON. The increase in other interest-bearing receivables of EUR 340 million during 2016 relates mainly to cash collaterals, given as trading collaterals to commodity exchanges.

Cash flow before financing activities was EUR -1,080 (7,650) million. In 2015, the impact from discontinued operations was EUR 6,457 million.

Fortum paid dividends totalling EUR 977 (1,155) million in April 2016. Payments of long-term and short-term liabilities totalled EUR 1,031 (1,040) million including repayment of a EUR 750 million bond and EUR 115 million Ekokem loans. The net decrease in liquid funds was EUR 3,064 (increase of 5,490) million.

Change in net cash during 2016, EUR million



At the end of 2016 and 2015 Fortum has been in net cash position, see Financial position and cash flow table above.

Assets and capital employed

Total assets decreased by EUR 803 million to EUR 21,964 (22,767) million.

Liquid funds at the end of 2016 were EUR 5,155 (8,202) million.

Capital employed was EUR 18,648 (19,870) million, a decrease of EUR 1,222 million.

Equity

Equity attributable to owners of the parent company totalled EUR 13,459 (13,794) million.

The decrease in equity attributable to owners of the parent company totalled EUR 335 million and was mainly due to EUR 977 million in dividends paid and the net profit for the period of EUR 496 million.

Financing

Fortum was net cash positive at the end of 2016. Net cash decreased by EUR 2,147 million to EUR 48 (2,195) million.

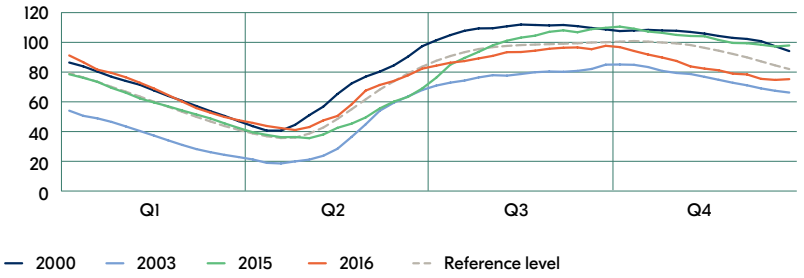
At the end of 2016, the Group's liquid funds totalled EUR 5,155 (8,202) million. Liquid funds include cash and bank deposits held by OAO Fortum amounting to EUR 105 (76) million. In addition to liquid funds, Fortum had access to EUR 2.0 billion of undrawn committed credit facilities (▸ *Note 28*).

Net financial expenses in January-December 2016 were EUR -169 (-175) million, of which net interest expenses were EUR -139 (-152) million. Net financial expenses include changes of EUR -2 (-18) million in the fair value of financial instruments and EUR 37 million compensation from the prepayment of loans by Fortum Värme in 2015.

In June 2016, Fortum signed a EUR 1,750 million syndicated Multicurrency Revolving Facility Agreement. The committed facility will be used for general corporate purposes and replaces the existing credit facility signed in July 2011. The facility has an initial maturity of five years and Fortum may request two one-year extension options.

Fortum's long-term credit ratings were unchanged. Standard & Poor's rating is BBB+ and the short-term rating A-2. The outlook is stable. Fitch Ratings long-term Issuer Default Rating (IDR) and senior unsecured rating is BBB+ and the short-term IDR is F2 with a stable outlook.

Nordic water reservoirs, energy content, TWh



Source: Nord Pool

Key figures

At the end of 2016, the comparable net debt to EBITDA was 0.0 (-1.7).

Gearing was 0% (-16%) and the equity-to-assets ratio 62% (61%). Equity per share was EUR 15.15 (15.53). Return on capital employed for year 2016 totalled 4.0% (22.7%).

Market conditions

Nordic countries

According to preliminary statistics, electricity consumption in the Nordic countries increased in 2016 by 9 TWh to 390 (381) TWh, mainly due to closer-to-long-term average temperature compared to the warmer year in 2015, although modest demand growth was seen in the Nordic countries.

At the beginning of 2016, the Nordic water reservoirs were at 98 TWh, which is 15 TWh above the long-term average and 18 TWh higher than a year earlier. By the end of the year, reservoirs were 8 TWh below the long-term average and 23 TWh lower than at the end of 2015. Reservoir levels have decreased due to low precipitation in the Nordic area and high hydro production mainly in Norway during 2016.

In 2016, the Nord Pool average system spot price was EUR 26.9 (21.0) per MWh, with the area price in Finland at EUR 32.4 (29.7) per MWh and in Sweden SE3 (Stockholm) at EUR 29.2 (22.0) per MWh. Nordic reservoirs turned from a 15 TWh surplus to an 8 TWh deficit during the year. 2016 was again warmer than normal, but less so than in 2015.

In Germany, the average spot price in 2016 was EUR 29.0 (31.6) per MWh.

The market price of CO_2 emission allowances (EUA) was EUR 8.1 per tonne at the beginning of the year. Throughout most of the fourth quarter and the whole calendar year the price fluctuated between EUR 4 and 6 per tonne and ended at EUR 6.5 per tonne at the end of 2016.

Russia

Fortum operates both in the Tyumen and Khanty-Mansiysk area of Western Siberia, where industrial production is dominated by the oil and gas industries, and in the Chelyabinsk area of the Urals, which is dominated by the metal industry.

According to preliminary statistics, Russian electricity consumption was 1,027 (1,007) TWh and the corresponding figure in Fortum's operating area in the First price zone (European and Urals part of Russia) was 787 (772) TWh in 2016.

In 2016, the average electricity spot price, excluding capacity price, increased by 4.3% to RUB 1,204 (1,154) per MWh in the First price zone.

Power consumption

TWh	2016	2015	2014
Nordic countries	390	381	378
Russia	1,027	1,007	1,021
Tyumen	94	93	93
Chelyabinsk	35	35	36
Russia Urals area	259	258	260

Average prices

TWh	2016	2015	2014
Spot price for power in Nord Pool power exchange, EUR/MWh	26.9	21.0	29.6
Spot price for power in Finland, EUR/MWh	32.4	29.7	36.0
Spot price for power in Sweden, SE3, Stockholm, EUR/MWh	29.2	22.0	31.6
Spot price for power in Sweden, SE2, Sundsvall, EUR/MWh	29.0	21.2	31.4
Spot price for power in European and Urals part of Russia, RUB/MWh [1]	1,204	1,154	1,163
Average capacity price, tRUB/MW/month	481	359	304
Spot price for power in Germany, EUR/MWh	29.0	31.6	32.8
Average regulated gas price in Urals region, RUB/1,000 m^3	3,614	3,488	3,362
Average capacity price for old capacity, tRUB/MW/month [2]	140	149	167
Average capacity price for new capacity, tRUB/MW/month [2]	815	641	552
Spot price for power (market price), Urals hub, RUB/MWh [1]	1,054	1,047	1,089
CO_2, (ETS EUA), EUR/tonne CO_2	5	8	6
Coal (ICE Rotterdam), USD/tonne	59	57	75
Oil (Brent Crude), USD/bbl	45	54	99

1) Excluding capacity tariff.

2) Capacity prices paid only for the capacity available at the time.

Water reservoirs

TWh	31 Dec 2016	31 Dec 2015	31 Dec 2014
Nordic water reservoirs level	75	98	80
Nordic water reservoirs level, long-term average	83	83	83

Export/import

TWh (+ = import to, - = export from Nordic area)	2016	2015	2014
Export/import between Nordic area and Continental Europe+Baltics	-10	-18	-14
Export/import between Nordic area and Russia	6	4	4
Export/import Nordic area, total	-4	-14	-10

European business environment and carbon market

Carbon pricing and emissions trading

The ratification of the global climate agreement adopted in Paris 2015, entered into force in November 2016. Preparation of implementation rules will take a couple of years, and the impact on the energy industry will become concrete only via legislation in different countries. The EU ratified the Agreement, but Russia's ratification is not expected before 2020. Carbon pricing schemes are being planned in several countries. The start of the Chinese ETS in 2017 is expected to double the coverage of emissions subject to carbon pricing globally.

The EU Commission released an announcement on the implications of the Paris Agreement for the EU climate policy. The EU decided not to revise its climate target for 2030. Basically all EU climate regulation to implement the 2030 target was under review in 2016. The revision of the emissions trading directive (ETS) was under discussion in the Parliament and the Council, but adoption isn't expected until late 2017 at the earliest or in 2018. Fortum and the electricity industry as a whole have highlighted the need to increase the ETS ambition and strengthen the market stability reserve mechanism.

Progress in implementation of the Energy Union

Year 2016 was the EU Energy Union's "year of delivery" with the release of three major legislative packages. The in early 2016 released "winter package" focused on security of supply and on heating and cooling (H&C). The new EU H&C strategy underlined the importance of decarbonisation of heating and cooling and the improvement of energy efficiency in the residential sector. The "summer package" contained a proposal for sharing the burden in the non-ETS sectors, i.e. binding national targets for member states to cut CO_2 emissions in transport, buildings, agriculture and waste management in 2021–2030. The strategy has a strong focus on electrification of the transport sector while also recognising

the role of biofuels. A broader "winter package" (Clean Energy for all Europeans) released in late 2016 completed to a large extent the legislative work in the field of energy. The winter package includes a renewal of the internal electricity market legislation, as well as energy efficiency and renewable energy directives with the intention to implement the related EU 2030 targets.

Swedish energy policy and taxation

The focus of the energy policy in 2016 was on the parliamentary energy commission's work with the aim of developing a long-term energy policy for the period after 2030. In June, a broad parliamentary agreement for long-term Swedish energy policy was presented by the government and parts of the opposition. The agreement aims at a 100% renewable energy system by 2040, but with no actual limits regarding nuclear generation. The electricity certificate system will be prolonged providing for an additional 18 TWh of electricity from renewable energy sources during 2020–2030. The progress of the energy agreement will be followed-up every second year starting in 2018.

One of the key elements of the parliamentary agreement was the proposal that taxation of different energy production forms should be more equal, and that the tax burden of nuclear and hydro should be taken to the level of other production technologies. The tax on installed nuclear capacity will be reduced starting in July 2017 and totally abolished as of 2018. The regulatory framework for investment of the nuclear waste funds' assets is suggested to be expanded to provide for a better long-term yield. The real-estate tax rate on hydro assets will be reduced from current 2.8% to the regular tax rate of 0.5% on real estate in four steps by 2020. In addition, a proposal for new hydro legislation is being prepared and is expected to be handed over to the parliament in autumn 2017.

Finnish energy policy and taxation

In late 2016 the Finnish Government published its energy and climate strategy in order to implement both the national energy and climate policy objectives of the Government's strategic programme, as well as the EU 2030 energy and climate targets. The key elements are: increase the share of renewable energy to a minimum of 50% with a strong focus on bioenergy, launch of a limited support scheme for renewable electricity (2 TWh of electricity production is auctioned, based on technology neutral tendering, in 2018–2020), 30% biofuel blending obligation and some incentives for electric vehicles as well as a ban on the use of coal in energy production by 2030.

In addition, the Finnish Government decided to increase the tax on heating fuels from 2017 onwards. However, CHP continues to pay only 50% of the CO_2 tax component, while the original aim was to increase it to 100%. The agreed tax model increases the tax on both the CO_2 and the energy content components. The Government also decided to make an assessment during 2017 concerning the possibility to apply real estate tax rates applicable to power plants also to wind power. Currently windmills below 3 MW are in the scope of lower tax rates. The earlier announced mechanism to offset the indirect costs of the EU Emissions Trading System for energy intensive industries was also approved.

Segment reviews

Generation

Generation is responsible for Nordic power production. The segment comprises nuclear, hydro and thermal power production, portfolio management, and trading and industrial intelligence, as well as nuclear services globally.

EUR million	2016	2015	Change 16/15
Sales	1,657	1,722	-4%
- power sales	1,635	1,625	1%
of which Nordic power sales [1]	1,339	1,526	-12%
- other sales	22	97	-77%
Comparable EBITDA	527	680	-23%
Comparable operating profit	417	561	-26%
Operating profit	338	-396	185%
Share of profits from associates and joint ventures [2]	-34	-111	69%
Comparable net assets (at period-end)	5,815	5,931	-2%
Comparable return on net assets, %	6.9	9.5	-27%
Capital expenditure and gross investments in shares	203	203	0%
Number of employees	979	1,341	-27%

1) The Nordic power sales income and volume includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

2) Power plants are often built jointly with other power producers, and owners purchase electricity at cost including interest cost and production taxes. The share of profit/loss is mainly IFRS adjustments (e.g. accounting for nuclear-related assets and liabilities) and depreciations on fair-value adjustments from historical acquisitions (▸ Note 20).

In 2016, the Generation segment's comparable EBITDA was EUR 527 (680) million. Comparable operating profit was EUR 417 (561) million. The decline was mainly due to the lower achieved power price and lower hydro volumes. The decline was partly offset by higher nuclear volumes and lower fixed costs.

Operating profit of EUR 338 (-396) million was affected by sales gains, the IFRS accounting treatment (IAS 39) of derivatives, mainly used for hedging Fortum's power production, and by nuclear fund adjustments, amounting to EUR -79 (-958) million (▸ *Note 5* and ▸ *Note 6*). Year 2015 included EUR -794 million from the decision on the early closure of two nuclear units in Sweden (▸ *Note 5* and ▸ *Note 7*).

The share of profits from associated companies and joint ventures totalled EUR -34 (-111) million (▸ *Note 20*).

Generation's achieved Nordic power price was EUR 31.0 (33.0) per MWh, EUR 2.0 per MWh lower than in 2015. The average system spot price of electricity in Nord Pool was EUR 26.9 (21.0) per MWh. The average area price in Finland was EUR 32.4 (29.7) per MWh and in Sweden SE3 (Stockholm) EUR 29.2 (22.0) per MWh.

The segment's total power generation in the Nordic countries was 45.3 (48.1) TWh. The decrease is mainly due to lower hydro volumes. The CO_2-free production amounted to 99% (99%) of total production.

Power generation by source

TWh	2016	2015	Change 16/15
Hydro power, Nordic	20.7	25.1	-18%
Nuclear power, Nordic	24.1	22.7	6%
Thermal power, Nordic	0.5	0.3	67%
Total in the Nordic countries	**45.3**	**48.1**	**-6%**

Nordic sales volume

TWh	2016	2015	Change 16/15
Nordic sales volume	52.4	50.5	4%
of which Nordic Power sales volume [1)]	43.2	46.3	-7%

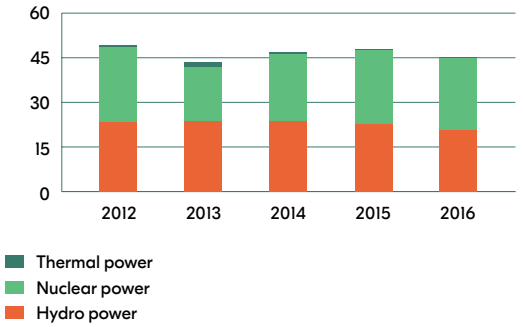
1) The Nordic power sales income and volume includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

Sales price

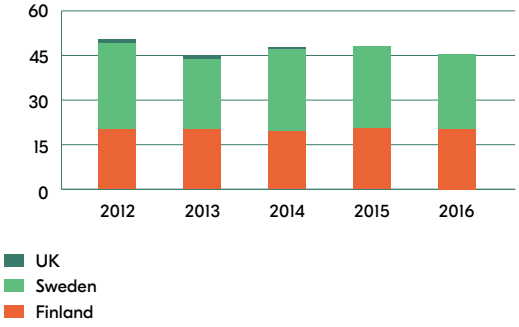
EUR/MWh	2016	2015	Change 16/15
Generation's Nordic power price [2)]	31.0	33	-6%

2) Generation's Nordic power price does not include sales income from thermal generation, market price-related purchases or minorities.

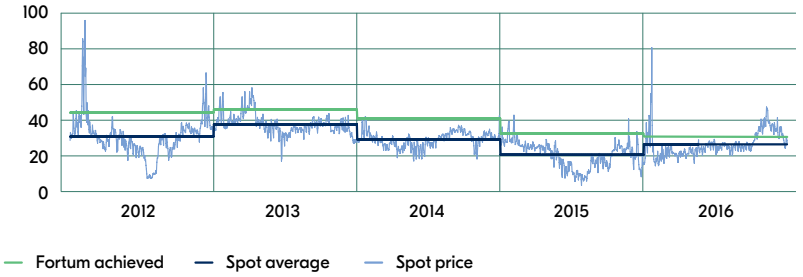
Generation segment's power generation in the Nordic area by source, TWh



Generation segment's power generation by area, TWh



Nord Pool, power price, 2012–2016, EUR/MWh



Source: Nord Pool, Fortum

City Solutions

City Solutions is responsible for developing sustainable city solutions into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions, as well as electricity sales and services. The business operations are located in the Nordics, the Baltic countries and Poland. The segment also includes Fortum's 50% holding in Fortum Värme, which is a joint venture and is accounted for using the equity method.

EUR million	2016	2015	Change 16/15
Sales	1,424	1,187	20%
- heat sales	449	423	6%
- power sales	648	682	-5%
- other sales	327	83	294%
Comparable EBITDA	238	209	14%
Comparable operating profit	112	108	4%
of which Electricity Sales	44	55	-20%
Operating profit	145	105	38%
Share of profits from associates and joint ventures	76	59	29%
Comparable net assets (at period-end)	3,052	2,182	40%
Comparable return on net assets, %	7.5	7.9	-5%
Capital expenditure and gross investments in shares	927	128	624%
Number of employees	2,314	1,417	63%

In August, Fortum finalised the acquisition of Ekokem Corporation. The transaction was originally announced in May 2016. Ekokem has been integrated as a business area into the City Solutions division and has been consolidated into Fortum Group from the end of August 2016.

In 2016, sales increased to EUR 1,424 (1,187) million, mainly due to the consolidation of DUON and Ekokem. Heat sales volumes of the City Solutions segment amounted to 8.7 (7.8) TWh. Power sales volumes from CHP production totalled 2.8 (2.5) TWh during the same period.

Comparable EBITDA increased, and totalled EUR 238 (209) million. Comparable operating profit was EUR 112 (108) million. The main drivers for the improvement were the consolidations of DUON and Ekokem. The full year result was burdened by an unfavourable fuel mix and the lower achieved power price. In addition, the use of more accurate consumption estimates had a one-off, positive impact on electricity sales in 2015.

Operating profit of EUR 145 (105) million was affected mainly by sales gains, Ekokem transaction costs and the IFRS accounting treatment (IAS 39) of derivatives totalling EUR 33 (-3) million (▸ *Note 5*).

The share of profits from associated companies and joint ventures totalled EUR 76 (59) million, including mainly the share of profit from Fortum Värme (▸ *Note 20*).

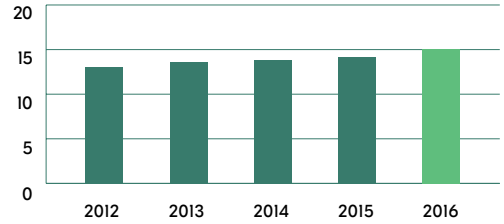
Heat sales by country

TWh	2016	2015	Change 16/15
Finland	3.6	3.1	16%
Poland	3.6	3.4	6%
Other countries	1.5	1.2	25%
Total	**8.7**	**7.8**	**12%**

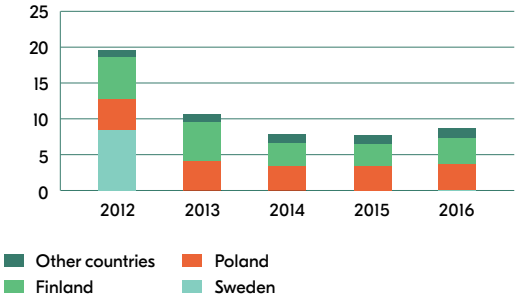
Power sales

TWh	2016	2015	Change 16/15
CHP	2.8	2.5	12%
Electricity Sales	12.3	14.2	-13%
Total	**15.1**	**16.7**	**-10%**

Electricity Sales in City Solutions segment, TWh



Heat sales by country, TWh



Russia

The Russia segment comprises power and heat generation and sales in Russia. The segment also includes Fortum's over 29% holding in TGC-1, which is an associated company and is accounted for using the equity method.

EUR million	2016	2015	Change 16/15
Sales	896	893	0%
- power sales	691	661	5%
- heat sales	199	228	-13%
- other sales	6	4	50%
Comparable EBITDA	312	267	17%
Comparable operating profit	191	201	-5%
Operating profit	226	203	11%
Share of profits from associates and joint ventures	38	32	19%
Comparable net assets (at period-end)	3,284	2,561	28%
Comparable return on net assets, %	8.0	8,2	-2%
Capital expenditure and gross investments in shares	201	285	-29%
Number of employees	3,745	4,126	-9%

After the completion of the multi-year investment programme in March 2016, Fortum has 2,268 MW of new capacity i.e. generation capacity built after 2007, which under the Russian Capacity Supply Agreement (CSA – "new capacity") receives guaranteed payments for a period of 10 years after the commissioning of each new unit.

The received capacity payments vary depending on the age, location, type and size of the plant, as well as on seasonality and availability. The CSA payments can also vary somewhat annually, as they are linked to Russian Government long-term bonds with 8 to 10 years' maturity. In early 2016, the System Administrator of the wholesale market published data on the weighted average cost of capital (WACC) and the consumer price index (CPI) for 2015, which was used to calculate the capacity price on CSA in 2016. The CSA payments were revised upwards accordingly to reflect the higher bond rates. In addition, the regulator will review the guaranteed CSA payments by re-examining earnings from the electricity-only market three and six years after the commissioning of a unit, and may revise the CSA payments accordingly.

All of Fortum's capacity generation built prior to 2008 (CCS – "old capacity"), totalling 2,214 MW in December 2016, was allowed to participate in the Competitive Capacity Selection for 2016, and the majority of Fortum's plants were selected. The volume of Fortum's installed capacity not selected in the auction totalled 175 MW, for which Fortum has obtained forced mode status, i.e. it is receiving payments for the capacity.

In 2016, the Russia segment's power sales volumes amounted to 29.5 (29.4) TWh and heat sales volumes totalled 20.6 (25.4) TWh. Electricity volumes increased mainly due to the commissioning of two new units in Chelyabinsk. The divestment of the Tobolsk CHP plant in February 2016 decreased the growth impact on both electricity and heat volumes.

The Russia segment's comparable EBITDA was EUR 312 (267) million. Comparable operating profit was EUR 191 (201) million, including CSA provision releases of EUR 2 (52) million. The positive effect came from operationally good performance and high utilisation rates in the power plants, the commissioning of new units as well as from the higher received CSA payments following the adjustments of the WACC component in the CSA prices. The Russian rouble had a negative effect of EUR 13 million.

Operating profit was EUR 226 (203) million, including sales gains of EUR 35 (1) million (▸ *Note 5*).

The share of profits from associated companies and joint ventures totalled EUR 38 (32) million (▸ *Note 20)*. The operating profit (EBIT) for the whole Russia segment, which includes the share of TGC-1, totalled RUB 19.5 billion in 2016, including a sales gain RUB 2.6 billion on the sale of Tobolsk.

Fortum started receiving capacity payments under the Russian Capacity Supply Agreement (CSA) for Chelyabinsk GRES unit 2 as of 1 March 2016. Fortum's extensive investment programme in Russia that started in 2008 was completed during 2016, as the final unit of the programme started its commercial operation.

Key electricity, capacity and gas prices for Fortum Russia

	2016	2015	Change 16/15
Electricity spot price (market price), Urals hub, RUB/MWh	1,054	1,047	1%
Average regulated gas price, Urals region, RUB/1,000 m³	3,614	3,488	4%
Average capacity price for CCS "old capacity", tRUB/MW/month [1)]	140	149	-6%
Average capacity price for CSA "new capacity", tRUB/MW/month [1)]	815	641	27%
Average capacity price, tRUB/MW/month	481	359	34%
Achieved power price for Fortum in Russia, RUB/MWh	1,734	1,555	12%
Achieved power price for Fortum in Russia, EUR/MWh [2)]	23.5	22.5	4%

1) Capacity prices paid for the capacity volumes, excluding unplanned outages, repairs and own consumption.

2) Translated using average exchange rate.

Discontinued operations (Distribution)

EUR million	2016	2015
Sales	-	274
- distribution network transmission	-	229
- regional network transmission	-	40
- other sales	-	7
Comparable EBITDA	-	163
Comparable operating profit	-	114
Operating profit	-	4,395
Capital expenditure and gross investments in shares	-	44

The table above includes the Swedish electricity distribution business for January-May 2015.

Fortum has had no distribution business since June 2015, when it completed the divestment of its Swedish electricity distribution business. The transaction concluded the divestment of Fortum's Distribution segment, a process that began in 2013.

Capital expenditure, divestments and investments in shares

EUR million	2016	2015
Capital expenditure		
Intangible assets	3	5
Property, plant and equipment	588	577
Total continuing operations	**591**	**582**
Gross investments in shares		
Subsidiaries	813	1
Associated companies	17	27
Available for sale financial assets	14	15
Total continuing operations	**844**	**43**

See also ▸ *Note 19.2* Capital expenditure.

Fortum expects to start the supply of power and heat from new power plants and to upgrade existing plants as follows:

	Type	Electricity capacity MW	Heat capacity MW	Supply starts
Generation				
Loviisa, Finland	Nuclear	6		Q4 2017
Several hydro plants in Sweden and Finland	Hydro	10		End 2017
City Solutions				
Zabrze, Poland	CHP	75	145	2018
Russia				
Ulyanovsk	Wind	35		2017
Other				
Bhadla, India	Solar	70		2017
Karnataka, India	Solar	100		2017
Solberg, Sweden	Wind	75 [1)]		2018

1) Skellefteå Kraft AB (SKAB) is participating in the project with a 50% (37.5 MW) share.

Generation

Through its interest in Teollisuuden Voima Oyj (TVO), Fortum is participating in the building of Olkiluoto 3 (OL3), a 1,600-MW nuclear power plant unit in Finland. The plant's start of commercial electricity production is expected to take place in late 2018, according to the plant supplier AREVA-Siemens Consortium. TVO has withdrawn a EUR 300 million shareholder loan from the total EUR 600 million commitments. Fortum's share of the EUR 300 million withdrawal is approximately EUR 75 million. Fortum's remaining commitment for OL3 is EUR 75 million (▸ *Note 22*).

City Solutions

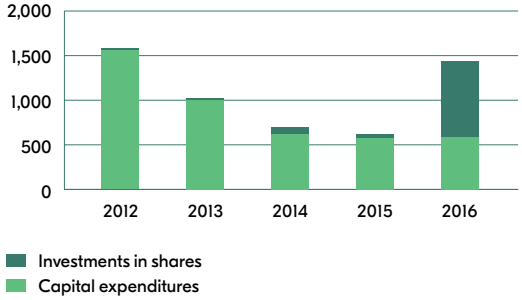
In February, Fortum agreed to sell its 51.4% shareholding in the Estonian natural gas import, sales and distribution company AS Eesti Gaas. Fortum finalised the transaction in March 2016.

In March, Fortum completed the acquisition of 93.35% of the shares in the Polish electricity and gas sales company Grupa DUON S.A. In April, Fortum announced that it had purchased the remaining shares through a mandatory squeeze-out procedure, after which the extraordinary meeting of shareholders of Grupa DUON S.A. decided to delist the company from the Warsaw Stock Exchange.

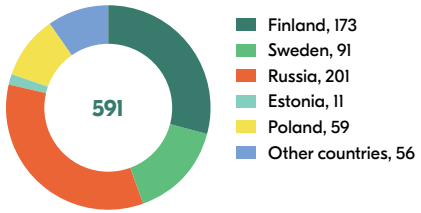
In May, Fortum signed an agreement with the four biggest owners of Ekokem Corporation, representing approximately 81% of the shares, to acquire their shareholding in the company for approximately EUR 470 million. This corresponded to a debt- and cash-free purchase price of approximately EUR 700 million for 100% of the company, as Fortum made a tender offer to all remaining shareholders at the same price (EUR 165 per share). Fortum obtained the required competition clearances in July. Having reached the necessary ownership thresholds, Fortum has started a minority redemption process. At the end of 2016, Fortum's total ownership was approximately 98%.

In December, Fortum finalised the acquisition of 100% of Turebergs Recycling AB's shares from Turebergs Åkeri AB with an enterprise value of up to approximately EUR 11 million. The main business of Turebergs Recycling is environmental construction, recycling and processing of bottom ash from waste-to-energy plants.

Capital expenditure and gross investments in shares continuing operations, EUR million



Capital expenditure continuing operations by country, EUR million



Russia

In February, Fortum sold its 100% shareholding in its Russian subsidiary OOO Tobolsk CHP. OOO Tobolsk CHP owns and operates the combined heat and power plant in the city of Tobolsk in Western Siberia.

Other

In January, Fortum won the bid in a reverse auction in India for a 70-MW solar project with a fixed tariff of 4.34 INR/kWh (about 60 EUR/MWh) for 25 years. In April, Fortum signed the Power Purchase Agreement with NTPC, India's largest utility.

In February, Fortum acquired a 75-MW wind farm project. The Solberg site, located in Västernorrland County in northern Sweden, is fully-permitted and construction-ready. In April, Fortum made a final investment decision on the project together with Skellefteå Kraft AB (SKAB), which is participating in the project with a 50% share.

In April, Fortum won the bid in a reverse auction in India for a 100-MW solar project. The solar power plant will be built in Karnataka with a fixed tariff of 4.79 INR/kWh for 25 years.

In November, Fortum acquired three wind power projects from the Norwegian company Nordkraft. The transaction consists of the Nygårdsfjellet wind farm, which is already operational, as well as the fully -permitted Ånstadblåheia and Sørfjord projects. Fortum and Nordkraft agreed on co-operating on the construction and operation of the wind farms. Fortum is preparing for the construction of the Ånstadblåheia and Sørfjord projects, expected to be commissioned in 2018 and 2019. When built the total installed capacity of the three wind farms would be approximately 170 MW. The acquisitions were finalised in early January 2017.

Group personnel

	2016	2015
Number of employees, 31 December	8,108	7,835
Average number of employees	7,994	8,009
Total amount of employee benefits, EUR million	334	351

Fortum's operations are mainly based in the Nordic countries, Russia and the Baltic Rim area. The total number of employees at the end of 2016 was 8,108 (7,835).

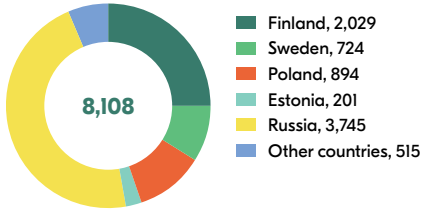
At the end of 2016, the Generation segment had 979 (1,341) employees; City Solutions 2,314 (1,417); Russia 3,745 (4,126); and Other 1,070 (951). Generation's number of employees decreased, mainly due to the reorganisation of the Group; City Solution's increased, mainly due to the acquisitions of DUON and Ekokem; Russia's decreased, due to the divestment of Tobolsk, and Other increased, due to the reorganisation of the Group. The headcount has also increased in new business areas, such as M&A and Solar & Wind Development, Technology and New Ventures as well as Nuclear Services, while it has decreased in the power plant operations and maintenance due to partnerships.

In addition, as Fortum revised its organisation during 2016 to align with its new strategy the organisational change focused on job rotation and giving opportunities to young talents to enable them to gain demanding and visible positions.

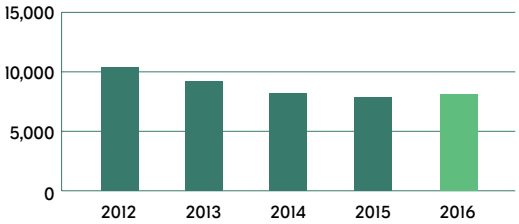
In autumn 2016, the "Energise Your Day" wellbeing programme was launched in Finland. The Energise Your Day wellbeing programme encourages employees to maintain and improve their overall wellbeing and offers ideas and tools for self-management, stress management, recovery, nutrition and physical activity. The wellbeing programme started with a questionnaire and the response rate was almost 80%. After completing the questionnaire, the employees receive tailored suggestions on how to improve their wellbeing; the programme also offers lectures and personal counselling. The programme will be rolled out to other countries in 2017.

For further details of Group personnel see ▸ *Note 11* Employee benefits.

Number of employees by country, 31 December 2016



Number of employees, 31 December 2016



Research and development

Sustainability is at the core of Fortum's strategy and, alongside Fortum's current businesses, the company is carefully exploring and developing new sources of growth within renewable energy production.

Fortum's goal is to be at the forefront of energy technology and application development. To accelerate innovation and the commercialisation of new offerings, Fortum strengthens its in-house innovation and digitalisation efforts and builds partnerships with leading global suppliers, promising technology companies and research institutions. Fortum makes direct and indirect investments in start-ups with promising new innovations that focus on connectivity, have disruptive potential and accelerate the transition towards a circular economy. Fortum also invests in technologies that support better utilisation of the current asset base, and can create new markets and products for Fortum. The company is continuously looking for emerging clean energy solutions and for solutions that increase resource and system efficiency.

During 2016, Fortum's R&D focused on new urban, rural and industrial business concept studies as well as on the sustainability, quality and handling of mixed biofuels and biofuel availability. Another very important area is how to increase energy system flexibility throughout the energy value chain, from energy production to consumers as well as customer solutions. As part of this study Fortum developed a virtual power plant pilot in order to optimise the system by using household water heaters as well as household solar panels together with battery storage.

In nuclear R&D, a key objective is to enable growth of the nuclear services business. In 2016, focus was also on future nuclear technologies like Small Modular Reactors, and on further development of the safety and efficiency of Fortum's nuclear power plants. Virtual Reality was developed for control room validation and radiation safety training purposes. The NURES product for purification of radioactive liquids was further developed to ensure our competitiveness.

In 2016, Fortum also invested in a Finnish biorefining technology company (Chempolis Oy) specialised in providing innovative and sustainable carbon-neutral biorefining technologies for the biomass, energy, oil, paper, alcohol, sugar and chemical industries. Fortum is a significant user of biomass in its own operations, and it has promoted the importance of resource efficiency in the use of biomass and common sustainability criteria for biomass. The company believes that biomass could be used more efficiently for creating higher value products. Fortum also invested in the Swedish solar technology company, Exeger Sweden AB (Publ). The company is specialised in developing and producing novel printable solar cells for use in consumer electronics, on buildings and in other applications.

The Group reports its R&D expenditure on a yearly basis. In 2016, Fortum's R&D expenditure was EUR 52 (47) million, or 1.4% (1.4%) of sales.

EUR million	2016	2015	Change 16/15
R&D expenditure, EUR million	52	47	11%
R&D expenditure, % of sales	1.4	1.4	0%

Sustainability

Fortum strives for balanced management of economic, social and environmental responsibility in the company's operations. Fortum's sustainability targets consist both of Group-level key indicators and division-level indicators.

The Group-level sustainability targets emphasise Fortum's role in society and measure not only environmental and safety targets, but also Fortum's reputation, customer satisfaction, employee wellbeing, and the security of production of power and heat. At the beginning of 2016, the Group-level target-setting was changed by taking work wellbeing, measured as a percentage of sickness-related absences, as a new Group target. In terms of specific carbon dioxide emissions (gCO_2/kWh), Fortum focuses on measuring Group-level specific emissions from total energy production.

The achievement of the sustainability targets is monitored in monthly, quarterly and annual reporting. Sustainability target-setting and follow-up, as well as the approval of Fortum's Sustainability Policy, and the review of Fortum's Sustainability Reporting, are included in the working order of the Board of Directors. Complete data on Fortum's sustainability performance is published in Fortum's Sustainability Report.

Fortum sustainability targets and performance

	Target	2016	Five-year average
Reputation index, based on One Fortum Survey	72.0	72.5	
Customer satisfaction index (CSI), based on One Fortum Survey	level good, 70–74	67–79	
Specific CO_2 emissions from total energy production (electricity and heat) as a five-year average, g/kWh	< 200	184	188
Energy-efficiency improvement by year 2020, base line year 2012, GWh/a	> 1,400	1,372	
Major EHS incidents, no.	≤ 23	22	
Energy availability of CHP plants, %	> 95	97.4	
Total recordable injury frequency (TRIF) for own personnel	≤ 2.5	1.9	
Lost workday injury frequency (LWIF) for own personnel	≤ 1.0	1.0	
Lost workday injury frequency (LWIF) for contractors	≤ 3.0	3.0	
Number of serious occupational accidents	≤ 8	13	
Sickness-related absences, %	≤ 2.4	2.4	

The company is listed on the Nasdaq Helsinki exchange and is included in the STOXX Global ESG Leaders, OMX GES Sustainability Finland, and ECPI® indices. Fortum is also ranked in category A- and as the top Nordic company in the utilities sector in the annual CDP (formerly the Carbon Disclosure Project) rating 2016, and it has received a Prime Status (B-) rating by the German oekom research AG.

In 2016, integration of Ekokem and Duon operations into Fortum's sustainability approach and data compilation systems were started. Sustainability information relating to DUON's operations is included in sustainability reporting from 1 April 2016 and Ekokem's operations from 1 September 2016.

Economic responsibility

For Fortum, economic responsibility means competitiveness, performance excellence and market-driven production, which create long-term value for our stakeholders and enable profitable growth. Satisfied customers are key to Fortum's success. Fortum aims to manage its supply chain in a responsible manner.

Fortum's goal is to achieve excellent financial performance in strategically selected core areas through strong competence and responsible ways of operating. Fortum measures financial performance with return on capital employed (target: 10%) and capital structure (target: comparable net debt/EBITDA around 2.5). In addition, Fortum has used the applicable Global Reporting Initiative (GRI) G4 indicators for reporting economic responsibility as of 1 January 2014.

Targets for reputation and customer satisfaction are monitored annually. Company reputation among the key stakeholders in the One Fortum Survey in 2016 improved to 72.5 points (on a scale of 1-100 points) and exceeded the target of 72.0 points. The Group target (70-74 points) for customer satisfaction was achieved in all business areas except electricity sales for business customers.

Fortum expects its business partners to act responsibly and to comply with the Fortum Code of Conduct and the Fortum Supplier Code of Conduct. Fortum assesses the performance of its business partners with supplier qualification and supplier audits. In 2016, Fortum audited 13 (9) suppliers in China, India, Russia, Poland, Latvia, Lithuania and Finland. In September 2016, Fortum signed a contract with an external service provider for conducting supplier sustainability audits.

Fortum as a tax payer

Fortum supports social development and wellbeing of the areas of operations by e.g. paying taxes. The tax benefits Fortum produces to society include not only corporate income taxes borne EUR 48 (106) million but also several other taxes. In 2016, Fortum's taxes borne were EUR 365 (413) million. Taxes borne include corporate income taxes, production taxes, employment taxes, taxes on property and cost of indirect taxes. Production taxes include also taxes paid through electricity purchased from associated companies.

In addition, Fortum administers and collects different taxes on behalf of governments and authorities. Such taxes include e.g. VAT, excise taxes on power consumed by customers, payroll taxes and withholding taxes. The amount of taxes collected by Fortum was EUR 376 (352) million.

Environmental responsibility

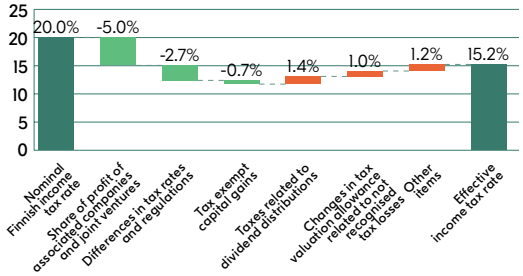
Fortum's aim is to provide its customers with environmentally benign products and services. Circular economy, resource and energy efficiency, and maximising the added value of waste and biomass are key priorities in Fortum's environmental approach. In addition, climate change mitigation, and the reduction of environmental impacts are emphasised in Fortum's environmental responsibility. The company's know-how in CO_2-free hydro and nuclear power production and in energy-efficient combined heat and power production, investments in solar and wind power, as well as solutions for sustainable cities play a key role in this.

Fortum's Group-level environmental targets are related to CO_2 emissions, energy efficiency, and major environmental, health and safety (EHS) incidents. At the end of 2016, 99.9% of Fortum's power and heat production worldwide had ISO 14001 certification.

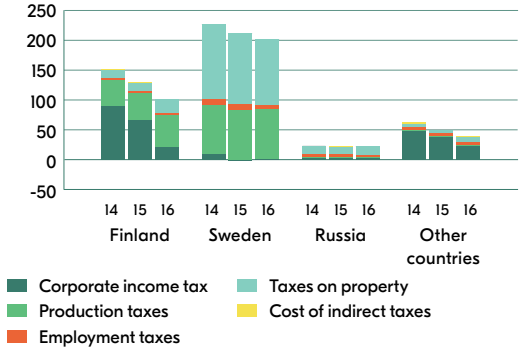
Fortum's climate target over the next five years is for total specific CO_2 emissions from both electricity and heat production in all countries to be below 200 g/kWh. The target is calculated as a five-year average. At the end of 2016, the total specific CO_2 emissions from energy production were at 188 (191) g/kWh, which is better than the target level.

Fortum's total CO_2 emissions in 2016 amounted to 18.6 (19.2) million tonnes (Mt), of which 2.7 (2.1) Mt were within the EU's emissions trading scheme (ETS). The estimate for Fortum's free emissions allowances in 2016 is 1.0 Mt.

Effective income tax rate break down



Taxes borne by country, EUR million



Fortum's total CO_2 emissions (million tonnes, Mt)	2016	2015	Change 16/15
Total emissions	18.6	19.2	-3%
Emissions subject to ETS	2.7	2.1	29%
Free emission allocation	1.0	1.3	-23%
Emissions in Russia	15.5	17.0	-9%

By 2020, Fortum's target is to achieve energy savings of more than 1,400 GWh annually, compared to 2012. At the end of 2016, about 1,372 GWh had been achieved. Among the projects executed in 2016 were nuclear plant refurbishments in Finland, hydropower plant refurbishments in Finland and Sweden, and gas turbine plant refurbishments in Russia.

Fortum's target was fewer than 23 major EHS incidents annually. In 2016, 22 (18) major EHS incidents took place in Fortum's operations: the incidents included 11 non-compliances with environmental permits, seven fires, one leak and three explosions. These incidents did not have significant environmental or financial impacts.

Social responsibility

Fortum's social responsibility emphasises the secure supply of electricity and heat, creating solutions for sustainable cities, operational and occupational safety, employee wellbeing, as well as ethical business operations and compliance with regulations. At the end of 2016, OHSAS 18001 certification covered 99.9% of Fortum's power and heat production worldwide.

The average energy availability of Fortum's CHP plants in 2016 was 97.4% (96.4%), clearly above the annual target level of 95%.

The total recordable injury frequency (TRIF) for Fortum employees in 2016 was 1.9 (1.6) per one million working hours, which is better than the Group-level frequency target (≤ 2.5). Fortum's target for the lost-workday injury frequency (LWIF) for own personnel was 1.0 and it was achieved (1.1). The lost-workday injury frequency for contractors was 3.0 (2.7), which is at the set target level. The number of serious occupational accidents was 13 (14).

Implementation of the agreed actions to improve contractor safety will continue with a specific focus on contractor safety and the integration of the Ekokem and Duon operations. As of 1 January 2017, Fortum has changed the definition of the severity of work-related accidents and is now focusing on the consequences or potential consequences of an accident rather than the length of the sick-leave. The Group target for 2017 is ≤ 5 severe accidents. By 2020 our target is to reduce severe accidents to zero.

The percentage of sickness-related absences in 2016 was 2.4 (2.4), which is at the target level.

Changes in Fortum's Management

In February 2016, Fortum announced that it will reorganise its corporate structure effective 1 April 2016. The target of the new organisation is to enable the implementation of the company's new vision and strategy, which were announced on 3 February 2016. The new organisation comprises three business divisions: Generation, City Solutions, and Russia. In addition, two development units focusing on growing new businesses have been established: M&A and Solar & Wind Development, and Technology and New Ventures. The new organisation will also have four staff functions: Finance; Legal; Strategy, People and Performance; and Corporate Affairs and Communications.

Fortum's Executive Management Team, as of 1 April 2016:

Pekka Lundmark, President and CEO
Matti Ruotsala, Deputy CEO until his planned retirement in summer 2017
Timo Karttinen, CFO
Tiina Tuomela, Executive Vice President, Generation
Markus Rauramo, Executive Vice President, City Solutions
Alexander Chuvaev, Executive Vice President, Russia
Per Langer, Senior Vice President, Technology and New Ventures
Kari Kautinen, Senior Vice President, M&A and Solar & Wind Development
Sirpa-Helena Sormunen, General Counsel
Risto Penttinen, Senior Vice President, Strategy, People and Performance
Arto Räty, Senior Vice President, Corporate Affairs and Communications

All members of the Executive Management Team report to the President and CEO, except for the General Counsel, who reports administratively to the CFO.

Events after the balance sheet date

On 27 January 2017, Fortum's Nomination Board submitted its proposals to the Annual General Meeting 2017 that the Board would consists of eight (8) members and that the following persons be elected to the Board of Directors for a term ending at the end of the Annual General Meeting 2018: to be re-elected Ms Sari Baldauf as Chairman, and as members, Mr Heinz-Werner Binzel, Ms Eva Hamilton, Mr Kim Ignatius, Mr Tapio Kuula and Mr Veli-Matti Reinikkala. To be elected as new members; Mr Matti Lievonen as Deputy Chairman and as member Ms Anja McAlister.

In addition, the Shareholders' Nomination Board will propose that the annual fees paid for the term remain unchanged and to be as follows: Chairman: EUR 75,000, Deputy Chairman: EUR 57,000, and members: EUR 40,000. The Chairman of the Audit and Risk Committee, if he/she is not simultaneously acting as Chairman or Deputy Chairman of the Board: EUR 57,000/year.

Outlook

Key drivers and risks

Fortum's financial results are exposed to a number of economic, strategic, political, financial and operational risks.

One of the key factors influencing Fortum's business performance is the wholesale price of electricity in the Nordic region. The key drivers behind the wholesale price development in the Nordic region are the supply-demand balance, the prices of fuel and CO_2 emissions allowances, and the hydrological situation.

The continued uncertainty in the global and European economies has kept the outlook for economic growth unpredictable. The overall economic uncertainty impacts commodity and CO_2 emissions allowance prices, and this could maintain downward pressure on the Nordic wholesale price of electricity. In Fortum's Russian business, the key drivers are economic growth, the rouble exchange rate, regulation around the

heat business, and further development of electricity and capacity markets. In all regions, fuel prices and power plant availability also impact profitability. In addition, increased volatility in exchange rates due to financial turbulence could have both translation and transaction effects on Fortum's financials, especially through the Russian rouble and Swedish krona.

In the Nordic countries, the regulatory and fiscal environment for the energy sector has also added risks for utility companies. The main strategic risk is that the regulatory and market environment develops in a way that we have not been able to foresee and prepare for. In response to these uncertainties, Fortum has analysed and assessed a number of future energy market and regulation scenarios including the impact of these on different generation forms and technologies. As a result, Fortum's strategy was renewed in 2016 to include broadening the base of revenues and diversification into new businesses, technologies and markets.

For further details on Fortum's risks and risk management, see the ▸ *Risk management* section of the Operating and financial review and ▸ *Note 3* Financial risk management.

Nordic market

Despite macroeconomic uncertainty, electricity is expected to continue to gain a higher share of total energy consumption. Electricity demand in the Nordic countries is expected to grow by approximately 0.5% on average, while the growth rate for the next few years will largely be determined by macroeconomic developments in Europe, and especially in the Nordic countries.

During 2016, oil and coal prices increased, while the price of CO_2 emission allowances (EUA) declined. The price of electricity for the upcoming twelve months appreciated in the Nordic area as well as in Germany, and both are now on higher levels than at the end of 2015.

In mid-January 2017, the quotation for coal (ICE Rotterdam) for the remainder of 2016 was around USD 74 per tonne and for CO_2 emission allowances for 2017 around EUR 5 per tonne. The Nordic system electricity forward price in Nasdaq Commodities for the rest of 2017 was around EUR 26 per MWh and for 2018 around EUR 23 per MWh. In Germany, the electricity forward price for the rest of 2017 was around EUR 34 per MWh and for 2018 around EUR 30 per MWh. Nordic water reservoirs were about 9 TWh below the long-term average and 19 TWh below the corresponding level in 2016.

Generation

The Generation segment's achieved Nordic power price typically depends on such factors as the hedge ratios, hedge prices, spot prices, availability and utilisation of Fortum's flexible production portfolio, and currency fluctuations. Excluding the potential effects from changes in the power generation mix, a 1 EUR/MWh change in the Generation segment's Nordic power sales achieved price will result in an approximately EUR 45 million change in Fortum's annual comparable operating profit. In addition, the comparable operating profit of the Generation segment will be affected by the possible thermal power generation volumes and its profits.

As a result of the nuclear stress tests in the EU, the Swedish nuclear safety authority (SSM) has decided to propose new regulations for Swedish nuclear reactors. The process is ongoing. Fortum emphasises that maintaining a high level of nuclear safety is the highest priority, but considers EU-level harmonisation of nuclear safety requirements to be of continued importance.

The Swedish Government increased the nuclear waste fund fee from approximately 0.022 to approximately 0.04 SEK/kWh for the 2015–2017 period. The impact on Fortum is approximately EUR 25 million annually. The process to review the Swedish nuclear waste fees is done in a three-year cycle. The Swedish Nuclear Fuel and Waste Management Co (SKB) will update the new technical plan in early 2017 for SSM to review. The final decision on the new nuclear waste fees will be made by the Swedish Government in December 2017. However, as a result of the decision on early closure of nuclear power plants, the Swedish Radiation Safety Authority, SSM, recalculated the waste fees for the Oskarshamn and Ringhals power plants.

In September 2016 the Swedish government presented the budget proposal for the coming years; One of the key elements was the proposal that taxation of different energy production forms should be more equal and the tax burden of nuclear and hydro should be taken to the level of other production technologies. The budget states that the nuclear capacity tax will be reduced to 1,500 SEK/MW per month from 1 July 2017 and abolished on 1 January 2018. In 2017, the tax is estimated to decrease by approximately EUR 32 million to EUR 52 million due to the tax decrease and by another EUR 5 million due to the premature closure of Oskarshamn 1 in the middle of the year. In 2018, there is no capacity tax.

A decision was also made to decrease the hydropower real-estate tax over a four-year period beginning in 2017, from todays 2.8% to 0.5%. The real-estate tax on hydro will, as stated in the government's budget, be reduced in four steps: in January 2017 to 2.2%; in January 2018 to 1.6%; in January 2019 to 1.0%; and in January 2020 to 0.5%. In 2017, the tax is estimated to decrease by approximately EUR 20 million to approximately EUR 95 million.

In addition to the decrease in the tax rate, the hydropower real-estate tax values, which are linked to electricity prices, will be updated starting in 2019. The real-estate tax values are updated every six years. With the current low electricity prices the tax values in 2019 will be clearly lower than today. The process for renewing existing hydro permits will also be reformed.

The tax reductions will be financed through a higher electricity consumption tax that will mainly affect households. Electricity-intensive industries will be exempt.

In October 2016, the Swedish Energy Agency presented a concrete proposal on how to increase the production of renewable electricity by 18 TWh in 2020–2030 within the electricity certificate system, as part of the Energy Agreement. The government is expected to decide on the proposal in late March 2017.

In 2015, OKG AB decided to permanently discontinue electricity production at Oskarshamn unit 1 and to start decommissioning after the permission for service operation has been granted by the relevant Swedish authorities. The date for discontinued production and the start of decommissioning has been set to 30 June 2017. Oskarshamn unit 2, which has been out of operation since June 2013 due to an extensive safety modernisation, will stay out of operation. The closing processes are estimated to take several years.

City Solutions

In May, the Finnish Government decided to increase the tax on heating fuels by EUR 90 million annually from 2017 onwards. The negative impact on Fortum is estimated to be approximately EUR 5 million per year.

Russia

The Russia segment's new capacity generation built after 2007 under the Russian Capacity Supply Agreement (CSA) is a key driver for earnings growth in Russia, as it is expected to bring income from new volumes sold and also to receive considerably higher capacity payments than the old capacity. Fortum will receive guaranteed capacity payments for a period of 10 years from the commissioning of a plant. The received CSA payment will vary depending on the age, location, size and type of the plants, as well as on seasonality and availability. CSA payments can vary somewhat annually because they are linked to Russian Government long-term bonds with 8 to 10 years' maturity. In addition, the regulator will review the earnings from the electricity-only market three years and six years after the commissioning of a unit and could revise the CSA payments accordingly.

The Competitive Capacity Selection for generation built prior to 2008 (CCS) takes place annually. The long-term CCS for 2017–2019 was held at the end of 2015, and the long-term CCS for 2020 was held in September 2016. The majority of Fortum's plants were selected. The volume of Fortum's installed "old" capacity not selected in the auction totalled 175 MW (out of 2,214 MW), for which Fortum has obtained forced mode status, i.e. it will receive payments for the capacity.

In December 2016, a bill draft containing the main principles of the heat reform, approved by the Russian Government in 2014, passed its first reading in the Russian Parliament. The draft contradicts the Roadmap in some crucial points, e.g. it does not include the requirement of the price liberalisation across the whole country. Instead it requires the consent of both the regional and the local authorities before starting the reform in certain pilot regions. If implemented, the reform should provide heat market liberalisation in 5 or 10 years, depending on the Government-imposed criteria.

The targeted operating profit (EBIT) level of RUB 18.2 billion in the Russia segment is expected to be reached during 2017–2018. The segment's profits are impacted by changes in power demand, gas prices and other regulatory developments. Economic sanctions, the currency crisis, oil prices and the inflation have impacted overall demand. As a result, gas prices and electricity prices have not developed favourably as expected. The Russian annual average gas price growth was 3.6% in 2016. Fortum estimates the Russian annual average gas price growth to be 2.0% in 2017.

The euro-denominated result level will be volatile due to the translation effect. The income statements of non-euro subsidiaries are translated into the Group reporting currency using average exchange rates. The Russia segment's result is also impacted by seasonal volatility caused by the nature of the heat business, with the first and last quarter being clearly the strongest.

Capital expenditure and divestments

Fortum currently expects its capital expenditure, excluding acquisitions, to be approximately EUR 800 million in 2017. The annual maintenance capital expenditure is estimated to be below EUR 300 million in 2017, well below the level of depreciation.

Taxation

The effective corporate income tax rate for Fortum in 2017 is estimated to be 19–21%, excluding the impact of the share of profits of associated companies and joint ventures, non-taxable capital gains and non-recurring items.

Hedging

At the end of 2016, approximately 60% of Generation's estimated Nordic power sales volume was hedged at EUR 30 per MWh for the 2017 calendar year and approximately 35% at EUR 26 per MWh for the 2018 calendar year.

The reported hedge ratios may vary significantly, depending on Fortum's actions on the electricity derivatives markets. Hedges are mainly financial contracts, most of them Nasdaq Commodities forwards.

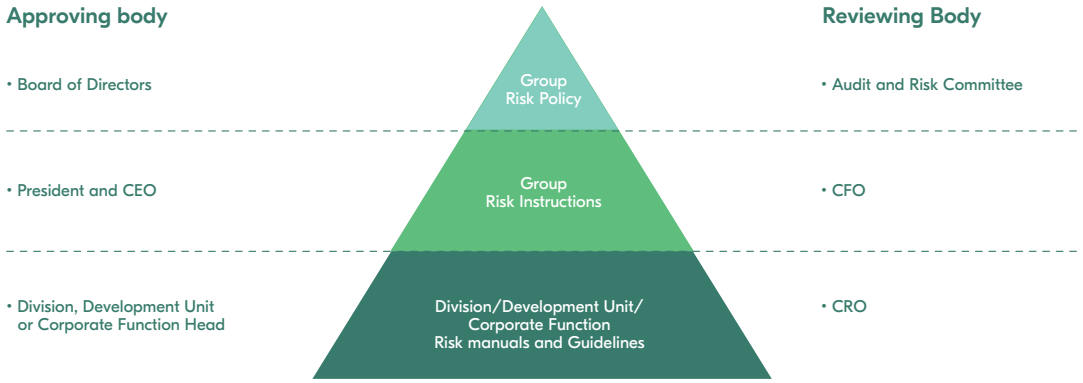
Risk management

Risk management framework and objectives

Fortum's Risk Management framework is comprised of the Group Risk Policy and supporting documents. The Group Risk Policy includes an overview of Fortum's risk management systems consisting of the general principles of risk management and the main features of the risk management process. The objective of the risk management framework and processes is to;

- support the development of the Group strategy,
- support strategy execution,
- support the achievement of agreed targets within acceptable risk levels so that the Group's ability to meet financial commitments is not compromised,
- ensure the understanding of material risks and uncertainties affecting Fortum's earnings, and
- ensure understanding and support the prevention of accidents that can have a severe effect on the health and safety of employees or third parties, and from incidents that can have a material impact on Fortum's assets, reputation or the environment.

Corporate Risk Policy Structure



Risk management organisation

The main principle is that risks are managed at source meaning that each Division, Development Unit and Corporate Function Head is responsible for managing risks that arise within their business operations. However, in order to take advantage of synergies, certain risks are managed centrally. For example, Group Treasury is responsible for managing financial risks and information security risk are managed by Corporate Security. The Audit and Risk Committee (ARC) is responsible for monitoring the efficiency of the company's risk management systems and for annually reviewing the material risks and uncertainties. Corporate Risk Management, a function headed by the Chief Risk Officer (CRO) reporting to the CFO, provides instructions and tools which support the Group in running an efficient risk management process. Corporate Risk Management is responsible for assessing and reporting maturity of risk management in Divisions, Development Units and Corporate Functions and for providing independent monitoring and reporting of material risk exposures to Group Management and the Board. Risk control functions and controllers in the business monitor and report risks to the CRO according to instructions and approved models.

Risk management process

Fortum's risk management process is designed to support the achievement of agreed targets by ensuring that risk management activities are consistent with the general principles of risk management and that risks are monitored and followed-up in a prudent manner. The main features of risk management process consist of event identification, risk assessment, risk response and risk control. Identification is carried out according to a structured process and risks are assessed in terms of impact and likelihood according to a Group-common methodology. Impact is assessed in monetary terms, but also in terms of health and safety, the environment and reputation where applicable. Risk response actions are defined and implemented by the business and operational management and can include to avoid, mitigate, transfer or absorb the risk. Risk control processes, which include monitoring and reporting of risks, are designed to support compliance with approved instructions, manuals and guidelines and to ensure that risk exposures remain within approved limits and mandates.

Fortum's Board of Directors annually approves the Group Risk Policy and the CEO annually approves Group Risk Instruction covering commodity market and fuel risks, counterparty credit risks, financial risks and operational risks. There are also other Group policies and instructions covering e.g. sustainability and information security risks which are aligned with the Group Risk Policy. Risk mandates or limits are defined for commodity market and fuel risks, counterparty credit risks and financial risks.

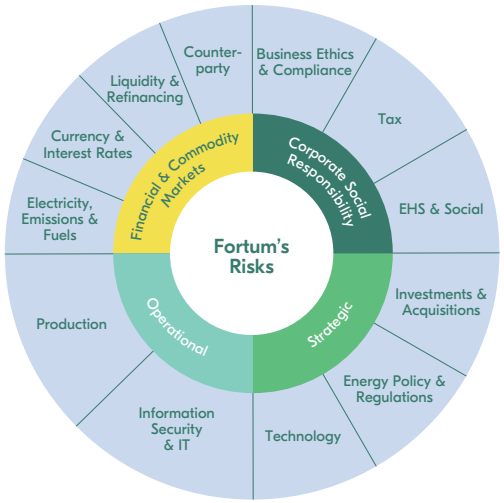
Risk factors

Strategic risks

The main strategic risk is that the regulatory and market environment develops in way that we have not been able to foresee and prepare for. In response to these uncertainties, Fortum has analysed and assessed a number of future energy market and regulation scenarios including the impact of these to different generation forms and technologies. As a result, Fortum's strategy was renewed in 2016 to include broadening the base of revenues and diversification into new businesses, technologies and markets.

Risks which could hinder Fortum in executing this strategy have been identified as part of the strategy development and led to, among other things, the creation of the five must-win battles. Risks include an inability to identify and carry out successful investments and acquisitions with the related project and integration risks, inability to manage and respond to changes in energy policy and the regulatory environment, and inability to manage and respond to changes in technology.

Fortum Risk Map



Investment and acquisition risks

Fortum's strategy includes growth of operations, including in new businesses, technologies and geographies, and any future investment or acquisition entails risk, including:

- increased overall operating complexity and requirements for management, personnel and other resources;
- the need to understand the value drivers and their uncertainties in investments or potential acquisition targets;
- the need to understand and manage the new markets and different cultural and compliance requirements;
- the need to understand and manage subcontractor risks and related sustainability and safety issues.

These risks are managed as part of the investment process which is being further developed to improve how we identify and assess opportunities and how we integrate new businesses.

Energy policy and regulation risks

The energy business is subject to energy policies and regulations, and Fortum's strategy has been developed based on scenarios of the future development of the regulatory environment in both existing and potential new businesses and market areas. The overall complexity and possible changes to regulations in the various countries and regions pose a risk if we are not able to identify and manage them efficiently.

Fortum maintains an active dialogue with the bodies involved in the development of laws and regulations in order to manage these risks and proactively participate in the development of the energy policy and regulatory framework.

Nordic/EU

Fortum's strategy in the power sector is based on a market-driven development, which would mean more interconnections and competition supported by policy harmonization. Even if the Nordic power market has a long tradition of harmonization, national policies vary considerably when it comes to generation (e.g. taxation, permitting and subsidies) as well as consumption (e.g. unbundling, taxation and market model) indicating that risks are also national. Potential risks within the policy framework include;

1) the electricity market model where the EU is currently discussing capacity remuneration mechanisms that could change the market model,
2) targets for future climate change mitigation where the specific details of targets for CO_2 emissions, renewables and energy efficiency for 2030 are under discussion,
3) renewable energy where the Commission aims at presenting a legislative proposal on sustainability criteria for solid biomass at the end of 2016 and,
4) the implementation of the Water Framework Directive in Sweden with potential effects on capacity and costs related to hydro power production.

The inter-linkage of these issues as well as national measures such as taxation create uncertainty and changes in policies in one area could undermine the effects of policy changes in other areas.

As part of the Circular Economy package, the EU waste legislation will set more ambitious recycling targets for waste. This will have a market impact, but possibly also a tax impact, on the amounts of non-recyclable waste that can be used for energy production. The implementation of EU's heating and cooling strategy through energy efficiency and renewable energy directives will likely give policy direction towards better-functioning heat markets and district heating systems. However, heating and cooling, being local businesses, are primarily subject to local legislation and regulations and thereby treated very differently in different countries.

Russia

Russia is exposed to political, economic and social uncertainties and risks resulting from changes in regulation, legislation, economic and social upheaval and other similar factors. The current economic sanctions may be enlarged and/or extended having direct and indirect impacts on the business environment. The main policy-related risks in Russia are linked to the development of the whole energy sector, part of which, like the wholesale power market, is liberalised while other parts, like gas, heat, and retail electricity, are not. The wholesale power market deregulation in Russia has been implemented to a large extent according to original plans. However, regulated sectors are inherently always exposed to a risk of regulatory changes which could affect Fortum's operations.

Technology risks

Fortum's strategy includes developing or acquiring new technologies. Fortum's R&D activities focus on the development of the energy system towards a future solar economy. Fortum is, for example, developing circular economy, bioeconomy and other renewable energy concepts as well as innovative solutions for its customers. New technologies expose Fortum to new types of risks such as risks related to intellectual property rights and viability of technologies. Technology risks are managed primarily through developing a diversified portfolio of projects consisting of different technologies.

Corporate social responsibility

Corporate social responsibility and sustainable development are integral parts of Fortum's strategy. Fortum gives balanced consideration to economic, environmental and social responsibility. Changes to laws, regulations and the business environment can pose a risk if not identified and managed effectively. Same applies to changes of views of our main stakeholders. In order to foresee and manage these risks, Fortum endorses a number of international voluntary charters, standards and guidelines in the area of sustainability, conducts stakeholder surveys annually and has defined internal policies and instructions of how to conduct business. Corporate Sustainability unit assesses sustainability risks related to the Group's operations annually. Risks identified by Corporate Sustainability are assessed by Divisions and mitigation actions are defined.

Environmental, health and safety and social risks

Operating power and heat generation plants involves use, storage and transportation of fuels and materials that can have adverse effects on the environment and expose personnel to safety risks. Assessment of environmental risks and preparedness to operate in exceptional and emergency situations follows the requirements set in ISO 14001 standard. The same approach based on the requirements set in OHSAS 18001 standard applies to risks related to occupational health and safety and actions in emergency situations.

Environmental, health and safety (EHS) risks as well as social risks related to Fortum's supply chain are evaluated through supplier qualification, internal and external audits and risk assessments. Corrective and preventive actions are implemented when necessary. EHS related risks together with social risks arising in investments are evaluated in accordance with Fortum's Investment Evaluation and Approval Procedure. Environmental risks and liabilities in relation to past actions have been assessed and provisions have been made for future remedial costs.

Tax risk

Fortum operates in a number of countries and is therefore exposed to changes in taxation and how tax authorities interpret tax laws. Changes in the international fiscal environment have created a tax environment that is leading to new or increased taxes and new interpretations of existing tax laws. This has led to challenges for Fortum and how its operations are taxed as the predictability and visibility around taxes has decreased.

Fortum's tax policy aims to identify simple and cost-efficient solutions to manage taxes in a sustainable manner. Artificial or other aggressive solutions are not used and legality and honesty are seen as a high value together with transparent and open information. Fortum is continuously following the development of tax related issues and their impact on the Group and maintains an active dialogue with tax authorities in unclear cases. Tax-related issues are communicated both internally and externally. Fortum's tax footprint is published annually.

Business ethics and compliance risks

Fortum's operations are subject to laws, rules and regulations set forth by the relevant authorities, exchanges, and other regulatory bodies in all markets in which Fortum operates. Fortum's ability to operate in certain countries may be affected by future changes to local laws and regulations.

Fortum has an established Code of Conduct to enhance the understanding of the importance of business ethics for all Fortum employees, contractors and partners. The supplier code of conduct sets sustainability requirements for suppliers of goods and services.

Fortum systematically identifies, assesses, mitigates and reports compliance risks including risks related to sustainability and business ethics. Internal controls are implemented to minimise the possibilities of unauthorised activities or non-compliance with Group policies and instructions.

Financial risks

Market risk

Fortum's business is exposed to fluctuations in prices and availability of commodities used in the production and sales of energy products. The main exposure is toward electricity prices and volumes, prices of emissions and prices and availability of fuels. Fortum hedges its exposure to commodity market risks in accordance with annually approved Hedging Guidelines, Strategies and Mandates. For further information on hedge ratios, exposures, sensitivities and outstanding derivatives contracts, see ▸ *Note 3* Financial risk management.

Electricity price risks

In competitive markets, such as in the Nordic region, the price is determined as the balance between supply and demand. The short-term factors affecting electricity prices and volumes on the Nordic market include hydrological conditions, temperature, CO_2 allowance prices, fuel prices, economic development and the import/export situation.

Electricity price risks are hedged by entering into electricity derivatives contracts, primarily on the Nasdaq Commodities power exchange. Hedging strategies are continuously evaluated as electricity and other commodity market prices, the hydrological balance and other relevant parameters change. In Russia, electricity prices and capacity sales are the main sources of market risk. The electricity price is highly correlated with the gas price and prices are fixed through bilateral agreements limiting exposure. In India, the electricity price received from solar production are fixed through long term power-purchasing agreements.

Emission and environmental value risks

The European Union has established an emissions trading scheme to reduce the amount of CO_2 emissions. In addition to the emissions trading scheme, there are other trading schemes in environmental values in place in Sweden, Norway and Poland. Part of Fortum's power and heat generation is subject to requirements of these schemes. There is currently no trading scheme in Russia for emissions or other environmental values.

The main factor influencing the prices of CO_2 allowances and other environmental values is the supply and demand balance. Fortum hedges its exposure to these prices and volumes through the use of CO_2 forwards and environmental certificates.

Fuel price and volume risks

Power and heat generation requires use of fuels that are purchased on global or local markets. The main fuels used by Fortum are natural gas, uranium, coal, various biomass-based fuels and waste. The main risk factor for fuels that are traded on global markets such as coal and natural gas, is the uncertainty in price. Prices are largely affected by demand and supply imbalances that can be caused by, for example, increased demand growth in developing countries, natural disasters or supply constraints in countries experiencing political or social unrest. For fuels traded on local markets, such as bio-fuels, the volume risk in terms of availability of the raw material of appropriate quality is more significant as there may be a limited number of suppliers. Due to the sanctions and economic development in Russia, the risks related to imported fuels from Russia have increased.

In the Nordic market, exposure to fuel prices is limited due to Fortum's flexible generation capacity which allows for switching between different fuels according to prevailing market conditions. In some cases, the fuel price risk can be transferred to the customer. The remaining exposure to fuel price risk is mitigated through fixed- price physical delivery contracts or derivative contracts. The main fuel source for heat and power generation in Russia is natural gas. Natural gas prices are partially regulated, so the price risk exposure is limited.

Liquidity and refinancing risks

The power and heat business is capital intensive and Fortum has a regular need to raise financing. Fortum maintains a diversified financing structure in terms of debt maturity profile, debt instruments and geographical markets. Fortum manages liquidity and refinancing risks through a combination of cash positions and committed credit facility agreements with its core banks.

After the Distribution divestments, Fortum has a large cash position. The credit risk of this position has been mitigated by diversifying the deposits to high-credit quality financial institutions and issuers of corporate bonds.

Currency and interest rate risks

Fortum's debt portfolio consists of interest-bearing liabilities and derivatives on a fixed- and floating-rate basis with differing maturity profiles. Fortum manages the duration of the debt portfolio through use of different types of financing contracts and interest rate derivative contracts such as interest rate swaps.

Fortum's currency exposures are divided into transaction exposures (foreign exchange exposures relating to contracted cash flows and balance sheet items where changes in exchange rates will have an impact on earnings and cash flows) and translation exposure (foreign exchange exposure that arises when profits and balance sheets in foreign entities are consolidated at the Group level). The main principle is that all material transaction exposures should be hedged while translation exposures are not hedged, or are hedged selectively. The main translation exposures toward the EUR/RUB and EUR/SEK are monitored continuously. When these currencies are weak they affect Fortum's profit level and equity when translating results and net assets to euros.

Counterparty risks

Fortum is exposed to counterparty risk whenever there is a contractual arrangement with an external counterparty including customers, suppliers, partners, banks and trading counterparties.

Credit risk exposures relating to financial derivative instruments are often volatile. Although the majority of commodity derivatives are cleared through exchanges, derivatives contracts are also entered into directly with external counterparties. Such contracts are limited to high-credit-quality counterparties active on the financial or commodity markets.

Due to the financing needs and management of liquidity, Fortum has counterparty credit exposure to a number of banks

and financial institutions. This includes exposure to the Russian financial sector in terms of deposits with financial institutions as well as to banks that provide guarantees for suppliers and contracting parties. Deposits in Russia have been concentrated to the most creditworthy state-owned or controlled banks. Limits with banks and financial institutions are monitored so that exposures can be adjusted as ratings or the financial situation changes, and Fortum is following the development of economic sanctions against Russia as part of the monitoring process.

Credit risk exposures relating to customers is spread across a wide range of industrial counterparties, small businesses and private individuals over a range of geographic regions. The majority of exposure is to the Nordic market, Poland and Russia. The risk of non-payment in the electricity and heat sales business in Russia is higher than in the Nordic market.

In order to manage counterparty credit risk, Fortum has routines and processes to identify, assess and control exposure. Credit checks are performed before entering into commercial obligations and exposure limits are set for all larger individual counterparties. Creditworthiness is monitored through the use of internal and external sources so that mitigating actions can be taken when needed. Mitigating actions include demanding collateral, such as guarantees, managing payment terms and contract length, and the use of netting agreements.

Operational risks

Operational risks are defined as the negative effects resulting from inadequate or failed internal processes, systems or equipment, or from external events. Process-related risks are assessed and controls for the most relevant risks are defined and implemented as part of the internal controls framework. Equipment and system risks are primarily managed through monitoring and maintenance planning.

Production risks

CHP

CHP production involves the use, storage and transportation of fuels. Leakage of fuels and contamination of the surrounding environment could lead to clean-up costs and third-party liabilities. An explosion or fire at a production facility could cause damages to the plant or third-parties and lead to possible business interruption. These risks are mitigated by condition monitoring, preventive maintenance and other operational improvements as well as competence development of personnel operating the plants.

Hydro power

Operational events at hydro power generation facilities can lead to physical damages, business interruptions, and third-party liabilities. A long-term program is in place for improving the surveillance of the condition of dams and for securing the discharge capacity in extreme flood situations. In Sweden, third-party liabilities from dam failures are strictly the plant owner's responsibility. Together with other hydro power producers, Fortum has a shared dam liability insurance program in place that covers Swedish dam failure liabilities up to SEK 10,000 million.

Nuclear power

Fortum owns the Loviisa nuclear power plant, and has minority interests in two Finnish and two Swedish nuclear power companies. At the Loviisa power plant, the assessment and improvement of nuclear safety is a continuous process performed under the supervision of the Radiation and Nuclear Safety Authority of Finland (STUK).

Third-party liability relating to nuclear accidents is strictly the plant operator's responsibility and must be covered by insurance. As the operator of the Loviisa power plant, Fortum has a statutory liability insurance policy of 686M SDR (Special Drawing Right) and the same type of insurance policies are in place for the operators where Fortum has a minority interest.

Under the Finnish law, Fortum bears full legal and financial responsibility for the management and disposal of nuclear waste produced by the Loviisa power plant. In both Finland and Sweden, Fortum bears partial responsibility, proportionate to the ownership share, for the costs of the management and disposal of nuclear waste produced by co-owned nuclear power plants. The future costs of the final disposal of spent fuel, the management of low and intermediate-level radioactive waste and nuclear power plant decommissioning are provided for by state-established funds in Finland and Sweden to which nuclear power plant operators make annual contributions.

Information security and IT risks

Fortum's business operations are dependent on well-functioning IT and information management systems and processes. Due to the nature of the business, large amounts of data are processed, often in real-time, and used for decision-making and in internal and external communication and reporting. Securing information and availability of the systems are essential for Fortum. Information security risks, including cyber security and privacy, are managed centrally by Corporate Security. Group instructions and procedures set requirements for managing and mitigating information risks.

IT functions in the business, support functions and outsourcing partners are responsible for identifying and mitigating operational IT security related risks as well as managing IT security incidents. IT functions are also responsible for IT service continuity.