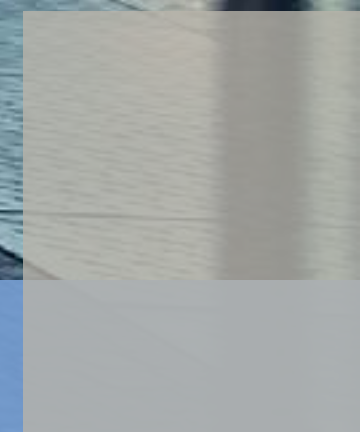
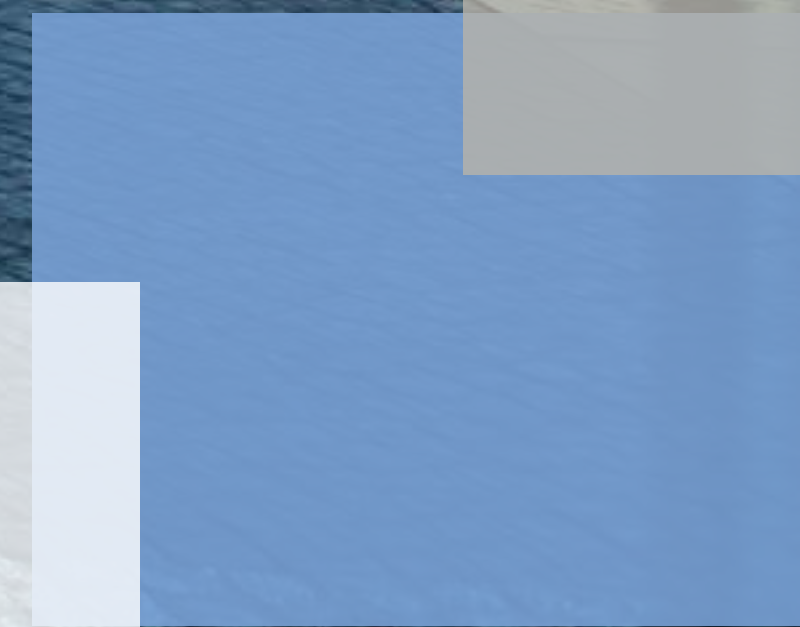
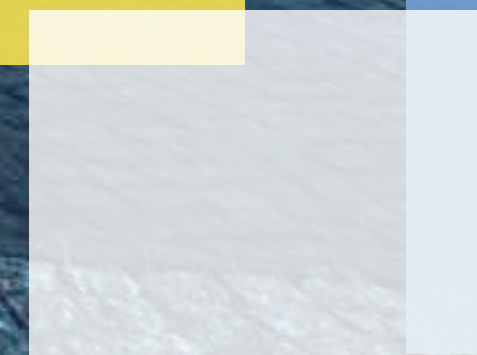
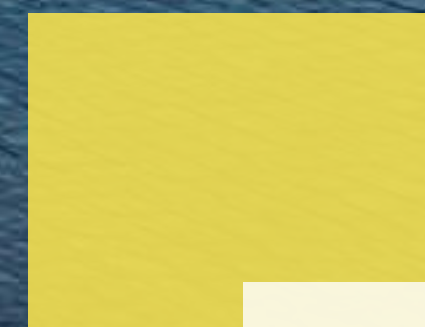


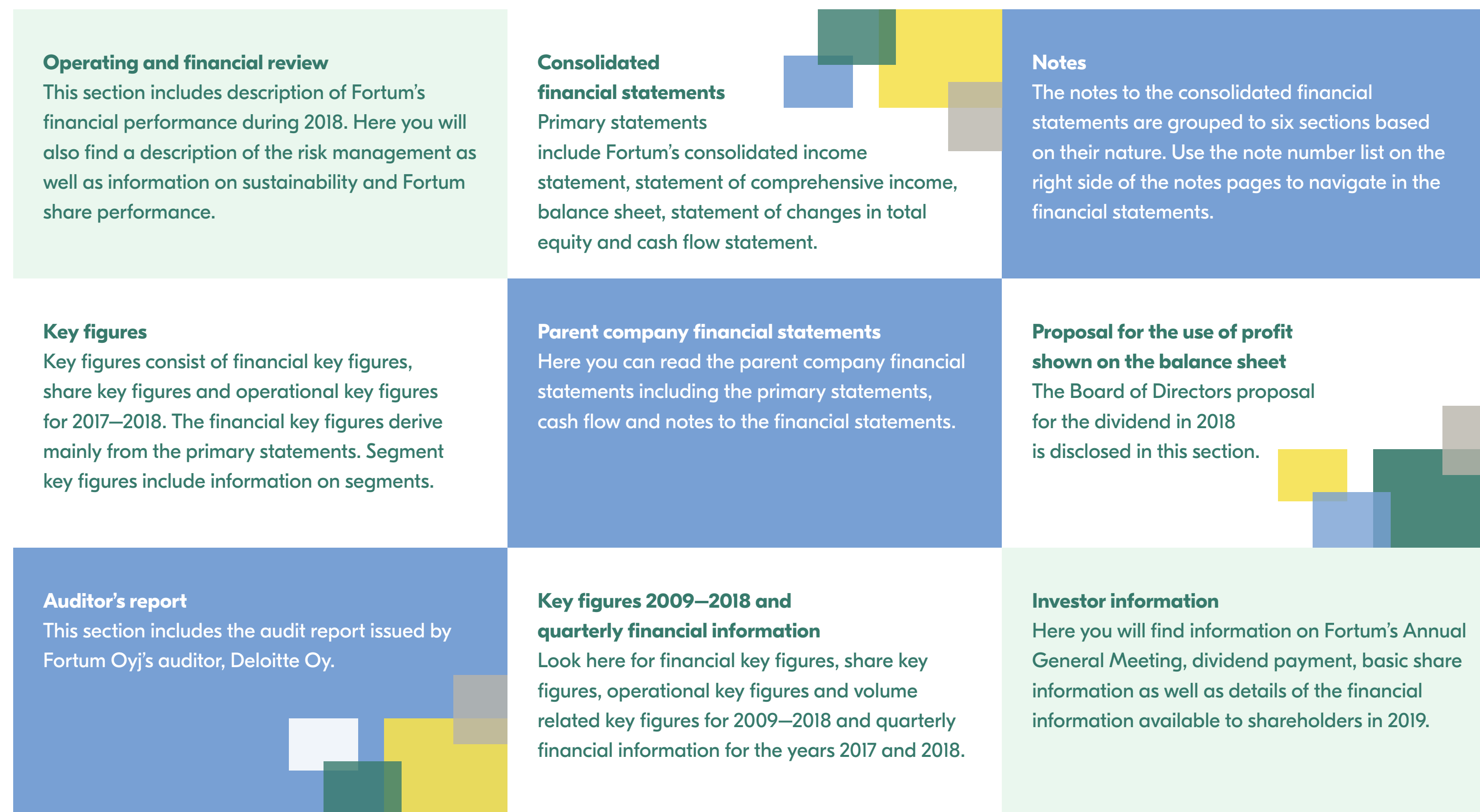
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Financials 2018



Financials 2018 – Reader's guide

This report consists of the operating and financial review and the consolidated financial statements of Fortum Group, including the parent company financial statements. Other parts of Fortum's reporting entity include CEO's business review, corporate governance statement, remuneration statement as well as tax footprint, which are published on Fortum's webpage. Sustainability reporting is an integrated part of Fortum's annual reporting and additional information on sustainability operations can be found on Fortum's website in sustainability section.



Notes

1–3 Basis of preparation

These notes describe the basis of preparing the consolidated financial statements and consist of the accounting policies, critical accounting estimates and judgements and information about acquisitions and disposals.

4–5 Risks

In the Risks section you will find notes that disclose how Fortum manages financial risks and capital risks.

6–14 Income statement

These notes provide supporting information for the income statement.

15–33 Balance sheet

These notes provide supporting information for the balance sheet.

34–37 Off balance sheet items

The notes in this section provide information on items that are not included in the balance sheet.

38–40 Group structure and related parties

This section includes information on related party transactions, events after balance sheet date and the subsidiaries of Fortum group.

The following symbols show which amounts in the notes reconcile to the items in income statement, balance sheet and cash flow statement.

IS = Income statement

BS = Balance sheet

CF = Cash flow

Financials 2018

Reader's guide	1	12 Finance costs – net.....	71	Key figures	121
OPERATING AND FINANCIAL REVIEW	3	13 Income tax expense	72	Financial key figures.....	121
Financial performance and position	3	14 Earnings and dividend per share	74	Share key figures	122
Sustainability	20	15 Financial assets and liabilities by categories.....	75	Segment key figures.....	123
Risk management.....	25	16 Financial assets and liabilities by fair value hierarchy.....	79	Definitions of key figures	125
Fortum share and shareholders	31	17 Intangible assets.....	82	Parent company financial statements	128
FINANCIAL STATEMENTS	34	18 Property, plant and equipment	85	Income statement.....	128
Consolidated financial statements	34	19 Participations in associated companies and joint ventures.....	89	Balance sheet.....	128
Consolidated income statement	34	20 Other non-current assets.....	94	Cash flow statement	129
Consolidated statement of comprehensive income	35	21 Interest-bearing receivables	95	Notes.....	130
Consolidated balance sheet	36	22 Inventories.....	95	Proposal for the use of the profit shown on the balance sheet	137
Consolidated statement of changes in total equity	37	23 Trade and other receivables.....	96	Auditor's report	138
Consolidated cash flow statement	38	24 Liquid funds	97	Key figures 2009–2018	142
Notes to the consolidated financial statements	40	25 Share capital	97	Financial key figures.....	142
1 Accounting policies	40	26 Non-controlling interests.....	98	Share key figures	144
2 Critical accounting estimates and judgements	47	27 Interest-bearing liabilities.....	98	Segment key figures.....	145
3 Acquisitions and disposals.....	47	28 Income taxes in balance sheet	101	Operational key figures.....	151
4 Financial risk management	50	29 Nuclear related assets and liabilities	104	Quarterly financial information	154
5 Capital risk management	57	30 Other provisions	107	Investor information	156
6 Segment reporting	59	31 Pension obligations.....	108		
7 Items affecting comparability	64	32 Other non-current liabilities.....	111		
8 Fair value changes of derivatives and underlying items in income statement.....	65	33 Trade and other payables	112		
9 Other income and other expenses	66	34 Lease commitments	112		
10 Materials and services	67	35 Capital commitments.....	113		
11 Employee benefits.....	67	36 Pledged assets and contingent liabilities.....	114		
		37 Legal actions and official proceedings	115		
		38 Related party transactions.....	117		
		39 Events after the balance sheet date.....	118		
		40 Subsidiaries by segment on 31 December 2018	119		

Financial performance and position

Improved 2018 results on higher market prices – New phase in strategy implementation started

Key financial ratios ¹⁾

	2018	2017	2016
Return on capital employed,%	6.7	7.1	4.0
Comparable net debt/EBITDA	3.6	0.8	0.0

1) See ▶ [Definitions of key figures](#).

Key figures

EUR million	2018	2017	2016	Change 18/17
IS Sales	5,242	4,520	3,632	16%
Comparable EBITDA	1,523	1,275	1,015	19%
IS Comparable operating profit	987	811	644	22%
IS Operating Profit	1,138	1,158	633	-2%
- of sales%	21.7	25.6	17.4	
IS Share of profits from associates and joint ventures	38	148	131	-74%
IS Profit before income tax	1,040	1,111	595	-6%
- of sales%	19.8	24.6	16.4	
IS Earnings per share, EUR	0.95	0.98	0.56	-3%
CF Net cash from operating activities	804	993	621	-19%
Shareholders' equity per share, EUR	13.33	14.69	15.15	-9%
Interest-bearing net debt (at end of period)*	5,509	988	-48	
Return on shareholders' equity,%	6.8	6.6	3.7	
Equity-to-assets ratio,%	54	61	62	

* Net cash in 2016

2018 was an eventful year for Fortum. We continued our strategy implementation with the integration and development of our Hafslund and Ekokem acquisitions, further investments in renewables, and most significantly; closing the Uniper tender offer. Our long-term belief in the need for large-scale decarbonisation took a leap forward with the strengthening of the Market Stability Reserve and subsequent tripling of emission allowance prices, having a clear positive impact on power prices.

Over the previous years we have worked hard to deliver on our strategy announced in early 2016. As a result, we now have a portfolio of businesses with good profit potential for coming years. After taking significant steps

in the capital redeployment that we began in 2016, we updated Fortum's strategy in November 2018. The updated strategy is a natural continuation of the previous one and builds on four priorities.

Our first strategic priority is to pursue operational excellence and increased flexibility in order to ensure benchmark performance of our existing businesses and improve our long-term competitiveness. After the large investments done during previous years it is only natural that the second priority is to ensure value creation from these investments. We will also continue to optimise our business portfolio, considering the ongoing transformation and decarbonisation of the sector. Despite the significant capital redeployment already made, we will, as our third priority, continue to drive focused growth in the power value chain. We will build on our long-standing expertise with the strategic focus on CO₂-free power generation – For a cleaner world. Foreseeing the market development towards the end of the 2020s will be increasingly challenging, but we believe that the uncertainty will also provide new business opportunities. Consequently, as our fourth priority, we aim to build on our existing competences and emerging technologies to create new businesses, independent of power prices, that have the potential for sizeable profit contribution. One example of initiatives in this area is our commitment to invest in Valo Ventures, a new global venture capital fund. Valo Ventures invests in digital start-ups focusing on key global megatrends that are central to Fortum's strategy. Fortum launched Valo Ventures together with Scott Tierney, former Google Capital co-founder.

The urgent need to decarbonise society is perhaps the greatest challenge of our time. The EU Commission published its long-term climate vision in November. Fortum supports the net zero emission target for 2050, as proposed in the most ambitious scenario. Cost-efficient emission reduction pathways should be established for all sectors. The EU emission trading scheme currently covers less than half of EU CO₂ emissions. Therefore, strengthening and broadening the scope of the EU ETS to e.g. heating, cooling, and transport should be a key tool to drive decarbonisation.

Our continued investments in wind and solar are starting to have a positive impact on our results. Commissioned in the beginning of 2018 and the first of its kind in Russia, the 35-MW Ulyanovsk wind park is one example of this. The sale of a 54% stake in our 185-MW solar power plants in India freed up capital for further investments, and in June Fortum won a 250-MW auction for an Indian solar park with a fixed tariff for 25 years. Our total wind and solar portfolio has grown substantially during 2018. Together with our associated companies, we have a portfolio of close to three gigawatts of solar and wind parks and development projects in the Nordics, Russia, and India.

Closing the offer on Uniper shares in June 2018 was the most significant milestone during the year. We have a clear vision for how Fortum and Uniper can jointly build 'The Utility of the Future', and we want to work with the company to explore how to best make this vision a reality for the benefit of all shareholders and stakeholders of both companies. To our disappointment, talks with Uniper have not yet proceeded as

anticipated, but the fundamentals of our investment case are intact and we remain committed. Since the closing of the offer, we have increased our shareholding in Uniper in order to further secure Fortum's voting position in any future Uniper General Meeting. At the end of 2018, Fortum held 49.99% of Uniper shares and voting rights.

Fortum's fourth quarter results improved, mainly as a result of higher power prices and increased nuclear production, due to improved availability. The results were still burdened by lower than average hydropower generation volumes, due to low inflows and reservoir levels, although the situation improved from the record low volumes seen in the third quarter. The impact of the higher power prices is reflected in our full-year comparable operating profit, which increased by 22%. The investment in Uniper only had a marginal effect on Fortum's 2018 results, as they include only Fortum's share of Uniper's third-quarter results. In the future, Uniper's profit and dividends will contribute to Fortum's earnings per share and cash flow.

Highlight of the year for the Generation division was the clearly improved results, driven by higher market prices. During the year we also finalised the automation modernisation project at the Loviisa nuclear power plant, the biggest single project since the construction of the plant. Following on the strong improvement in Russia over the past years, the 2018 results in roubles improved slightly. In the City Solutions and Consumer Solutions divisions, 2018 was characterised by the integration of Hafslund, which proceeded well. Unfortunately the financial results for these two divisions has not yet reach satisfactory levels. We will continue the integration work, and expect the synergies to materialise gradually during 2019 and 2020.

Based on the results of 2018 and the outlook for future years, Fortum's Board of Directors is proposing an unchanged dividend of EUR 1.10 per share for the calendar year 2018.

Strategy update in November 2018

On 12 November 2018, Fortum announced its updated strategy. The update is a continuation of the strategy execution towards Fortum's vision "For a cleaner world". At the same time Fortum reconfirmed its dividend policy and long-term financial targets. The strategy aims at

strengthening Fortum's competitiveness and ensuring a benchmark portfolio for the 2020's. Pursuing operational excellence and increased flexibility as well as ensuring value creation from investments and portfolio optimisation are the key priorities. Fortum will also drive focused growth in the power value chain and seek to build options for significant new businesses for the future. The updated strategy was presented in more details on Fortum's Capital Markets Day on 13 November 2018.

Uniper investment

In September 2017, Fortum announced it had signed a transaction agreement with E.ON under which E.ON had the right to decide to tender its 46.65% shareholding in Uniper SE into Fortum's public takeover offer (PTO). In November 2017, Fortum launched a voluntary public takeover offer to all Uniper shareholders at a total value of EUR 22 per share, implying a premium of 36% to the price prior to intense market speculation on a potential transaction at the end of May 2017. In February 2018, Fortum announced that shareholders representing 47.12% of the shares in Uniper had accepted the offer.

The PTO was conditional to regulatory and merger control approvals in several countries. During the second quarter 2018, Fortum received the required clearances in Russia under the Strategic Investment Law as well as Competition Law. The clearances allow Fortum the acquisition of up to 50% of shares and voting rights in Uniper. During the second quarter, Fortum also received an unconditional merger clearance decision from the European Commission. Clearances in the United States and South Africa had already been granted earlier.

On 26 June 2018, Fortum closed the offer and became the largest shareholder in Uniper with 47.35% of the shares. Fortum paid a total consideration of EUR 3.7 billion for all shares tendered (EUR 21.31 per share). The total consideration was financed with existing cash resources of EUR 1.95 billion and bridge loan financing of EUR 1.75 billion from committed credit facilities. Since June 2018 Fortum has increased its shareholding in Uniper in order to further secure its voting position in any future Uniper General Meeting. On 31 December 2018, Fortum owned 49.99% of the shares in Uniper.

The share of Uniper's profit will contribute to the EPS and dividends to the cash flow of Fortum. As a result of this transaction, Fortum's leverage rose above Fortum's long-term target level for net debt/EBITDA ratio of around 2.5x. Over time, however, Fortum expects its cash generation in combination with the dividend from Uniper to reduce this ratio towards the stated target.

Fortum has consolidated Uniper as an associated company from 30 June 2018. The total acquisition cost, including direct costs relating to the acquisition, is reported in 'Participations in associated companies and joint ventures'. The purchase price allocation will be completed within the one-year window from the acquisition date, according to IFRS. As Uniper publishes its interim reports later than Fortum, Fortum's share of Uniper's results will be accounted for with a time-lag of one quarter, with potential adjustments. Fortum's Financial Statements 2018 only includes Fortum's share of Uniper's third-quarter results, amounting to EUR -2 million (► **Note 3**). Uniper will report its full-year 2018 results on 12 March 2019.

Financial results

Sales by segment

EUR million	2018	2017	Change 18/17
Generation	1,837	1,677	10%
City Solutions	1,094	1,015	8%
Consumer Solutions	1,759	1,097	60%
Russia	1,069	1,101	-3%
Other	129	102	26%
Netting of Nord Pool transactions ¹⁾	-516	-367	
Eliminations	-130	-103	
IS Total	5,242	4,520	

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	2018	2017	Change 18/17
Generation	762	603	26%
City Solutions	284	262	8%
Consumer Solutions	110	57	93%
Russia	417	438	-5%
Other operations	-50	-83	40%
IS Total	1,523	1,275	19%

Comparable operating profit by segment

EUR million	2018	2017	Change 18/17
Generation	631	478	32%
City Solutions	113	98	15%
Consumer Solutions	53	41	29%
Russia	271	296	-8%
Other operations	-79	-102	23%
IS Total	987	811	22%

Operating profit by segment

EUR million	2018	2017	Change 18/17
Generation	738	501	47%
City Solutions	109	102	7%
Consumer Solutions	75	39	92%
Russia	273	295	-7%
Other operations	-57	221	-126%
IS Total	1,138	1,158	-2%

For further information see [▶ Note 6](#) Segment reporting.

Fortum has reassessed the assumptions for all nuclear related assets and liabilities as of 31 December 2018. The increase in the nuclear provision for the Loviisa nuclear power plant in Finland leads to recognition of an additional share of the Finnish nuclear fund. As of 31 December 2018, Fortum still has EUR 254 million in unrecognised nuclear waste fund assets for Loviisa ([▶ Note 29](#)). The increase in the provision and the

additional share in the fund are both included in items affecting comparability. The changes in assumptions had a positive impact on interests presented in other financial expenses. The assumptions have also been changed for the respective balances of the co-owned nuclear companies in Finland and Sweden i.e. Teollisuuden Voima Oyj (TVO), Oskarshamn Kraftgrupp AB (OKG), and Forsmarks Kraftgrupp AB. The total impact of the change to share of profit from associated companies and joint ventures was EUR -37 million, net of tax, and including additional nuclear waste liability related to legacy waste obligations for Swedish nuclear. The net profit impact from all these nuclear related adjustments is close to zero.

Fortum's sales increased by 16%, mainly reflecting the consolidation of Hafslund and higher power prices. Comparable operating profit increased by 22%, mainly as a result of the higher achieved power price, the positive impact from the consolidation of the acquired Hafslund businesses, lower real-estate and capacity taxes in Swedish hydro and nuclear power plants, higher received Capacity Supply Agreement (CSA) payments in Russia, as well as the profit from the sale of a 54% share of Fortum's Indian solar power plants. The result improvement was partly offset by the very low hydropower production volumes in the third quarter and the weaker Russian rouble.

Operating profit for the period was positively impacted by EUR 151 (347) million of items affecting comparability, mainly due to the fair value change of non-hedge accounted derivatives, capital gains, and nuclear related adjustments. In 2017, the items affecting comparability included a one-time capital gain of EUR 324 million from the divestment of Hafslund ASA ([▶ Note 6](#)).

The share of profit from associates and joint ventures decreased to EUR 38 (148) million, mainly due to nuclear related adjustments of EUR -37 million and other items relating to nuclear decommissioning of EUR -33 million, mainly from OKG. The decrease was also due to that the comparison period included the share of profit from Hafslund ASA of EUR 39 million, divested in August 2017. Uniper accounted for EUR -2 (0) million, Stockholm Exergi (formerly Fortum Värme) for EUR 61 (66) million, and TGC-1 for EUR 40 (32) million. The share of profit from TGC-1 is based on the company's published fourth-quarter 2017 and

January–September 2018 interim reports. The share of profit from Uniper is based on the company's published third-quarter 2018 interim report ([▶ Note 19](#)).

Net finance costs amounted to EUR 136 (195) million. The decline was mainly due to nuclear related adjustments of EUR 49 million.

Profit before income taxes was EUR 1,040 (1,111) million.

Taxes for the period totalled EUR 181 (229) million. The effective income tax rate, according to the income statement, was 17.5% (20.6%). The comparable effective income tax rate, excluding the impact of the share of profit from associated companies and joint ventures, non-taxable capital gains, tax rate changes and other major one-time income tax effects was 22.0% (18.8%) ([▶ Note 13](#)).

The profit for the period was EUR 858 (882) million. Earnings per share were EUR 0.95 (0.98), of which EUR 0.15 (0.38) per share was related to items affecting comparability, including capital gains of EUR 0.09 from the sale of the 10% stake in Hafslund Produksjon. In the comparison period in 2017, the sales gain from the Hafslund transaction was EUR 0.36 and the impact from a Swedish income tax case was EUR -0.14.

Financial position and cash flow

EUR million	2018	2017	Change 18/17
Interest expense	-148	-164	10%
Interest income	34	32	6%
Fair value gains and losses on financial instruments	-8	-12	33%
Other financial expenses - net	-15	-50	70%
IS Finance costs - net	-136	-195	30%
Interest-bearing liabilities	6,093	4,885	25%
Less: Liquid funds	584	3,897	-85%
Interest-bearing net debt	5,509	988	458%

Cash flow

In 2018, net cash from operating activities decreased by EUR 189 million to EUR 804 (993) million, mainly impacted by an increase in comparable

EBITDA of EUR 248 million, an increase of realised foreign exchange gains and losses of EUR 314 million, and the negative effect of a EUR 751 million increase in working capital. The foreign exchange gains and losses of EUR 231 (-83) million relate to the rollover of foreign exchange contract hedging loans to Russian and Swedish subsidiaries. The EUR -670 (81) million change in working capital mainly resulted from the daily cash settlements for futures on Nasdaq Commodities (Additional cash flow information).

Capital expenditure decreased by EUR 78 million to EUR 579 (657) million, and was below the 2018 guidance of EUR 600–700 million. Acquisition of shares was EUR 4,088 (972) million, mainly related to the Uniper transaction (► [Note 3](#)). The impact of divestment of shares was EUR 259 (741) million, mainly resulting from the sale of the 10% stake in Hafslund Produksjon and a 54% share of a solar power company. Acquisitions and divestments in 2017 were mainly related to the Hafslund transaction. Net cash used in investing activities increased to EUR 4,398 (807) million.

Cash flow before financing activities was EUR -3,594 (187) million.

Proceeds from long-term liabilities were EUR 1,764 (35) million, of which the main part is related to the bridge loan financing from committed credit facilities for the acquisition of Uniper shares. Payments of long-term liabilities totalled EUR 586 (543) million. The dividends paid for 2017 amounted to EUR 977 million. The net decrease in liquid funds was EUR 3,268 (1,241) million.

Assets and capital employed

At the end of the reporting period, total assets amounted to EUR 22,409 (21,753) million. Liquid funds at the end of the period decreased to EUR 584 (3,897) million, impacted by the Uniper transaction. Capital employed was EUR 18,170 (18,172) million.

Equity

Equity attributable to owners of the parent company totalled EUR 11,841 (13,048) million. The decrease of EUR 1,207 million was mainly due to the dividends of EUR 977 million paid for 2017, the EUR -599 million impact from fair valuation of cash flow hedges, and translation

differences of EUR -518 million, partly offset by the net profit for the period of EUR 843 million. The dividend of EUR 1.10 per share for 2017 was approved by the 2018 Annual General Meeting on 28 March 2018 and paid on 10 April 2018.

Financing

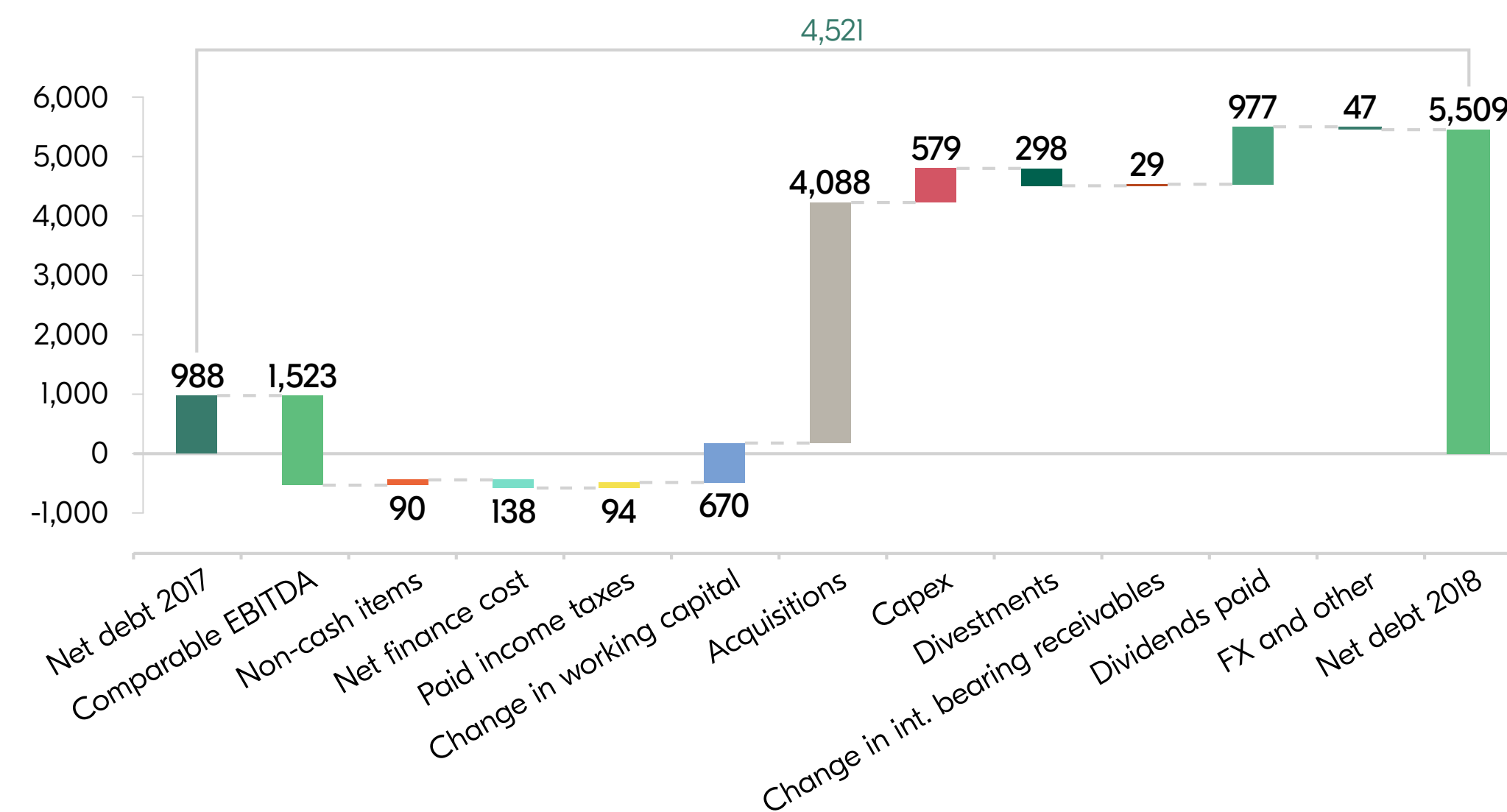
Net debt increased by EUR 4,521 million to EUR 5,509 (988) million, mainly due to the closing of the Uniper offer in the latter part of the second quarter.

At the end of 2018, the Group's liquid funds totalled EUR 584 (3,897) million. Liquid funds include cash and bank deposits of EUR 317 (246) million held by PAO Fortum. In addition to liquid funds, Fortum's undrawn committed credit facilities totalled EUR 1.8 (1.8) billion (► [Note 24](#)).

Net financial expenses totalled EUR 136 (195) million, of which net interest expenses were EUR 114 (132) million. Net financial expenses included the impact of EUR 49 million from nuclear related adjustments (► [Note 29](#)). In 2017, net financial expenses included costs relating to financing arrangements of the Uniper transaction.

On 12 September 2018, Fortum received information from Nasdaq Commodities that it had closed-out the positions of a clearing member and that the funds from the commodity member default fund had been utilised to cover the loss. Fortum is trading on Nasdaq Commodities and is a member of the default fund. On 13 September, Nasdaq requested the members of the default fund to replenish their contribution in the fund. Fortum's participation in the default fund was approximately EUR 30 million and the requested replenishment was approximately EUR 20 million. Consequently, Fortum booked

Change in net debt during 2018, EUR million



approximately EUR 20 million as a financing cost in its 2018 results. In November 2018, a legally binding agreement for a consensual arrangement was finalised between the defaulting member and the creditors of the defaulted member in order to recover part of the losses arising from the default.

In January 2018, Standard & Poor's downgraded Fortum's long-term credit rating from BBB+ to BBB with Negative Outlook. The short-term rating was affirmed at level A-2. In June 2018, Fitch Ratings downgraded Fortum's long-term credit rating from BBB+ to BBB with Stable Outlook. The short-term rating was downgraded to level F3. Having a solid investment grade rating is a key priority for Fortum.

Key figures

At the end of 2018, the comparable net debt to EBITDA ratio for the last 12 months was 3.6x (0.8x), which is above the long-term over-the-cycle target of approximately 2.5x.

Gearing was 46% (7%) and the equity-to-assets ratio 54% (61%). Equity per share was EUR 13.33 (14.69). Return on capital employed (ROCE) for the last twelve months was 6.7% (7.1%). Fortum targets a long-term over-the-cycle return on capital employed of at least 10%.

Operating and regulatory environment

Nordic countries

According to preliminary statistics, electricity consumption in the Nordic countries was 399 (392) TWh. The higher consumption was mainly driven by colder weather during the first quarter of 2018 and the somewhat higher industrial consumption.

At the beginning of 2018, the Nordic water reservoirs were at 86 TWh, which is 3 TWh above the long-term average and 11 TWh higher than one year earlier. At the end of 2018, the reservoirs were at 74 TWh, which is 9 TWh below the long-term average and 12 TWh lower than one year earlier.

In 2018, the average system spot price in Nord Pool was EUR 44.0 (29.4) per MWh, the average area price in Finland was EUR 46.8 (33.2) per MWh and in Sweden SE3 (Stockholm) EUR 44.5 (31.2) per MWh.

In Germany, the average spot price was EUR 44.5 (34.2) per MWh in 2018.

The market price of CO₂ emission allowances (EUA) increased from EUR 8 per tonne at the beginning of the year to EUR 25 per tonne at the end of 2018.

Russia

Fortum operates mainly 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. The Russian market is divided into two price zones and Fortum operates in the First Price Zone (European and Urals part of Russia).

According to preliminary statistics, Russian electricity consumption was 1,056 (1,035) TWh and the corresponding figure for the First Price Zone was 810 (799) TWh in 2018.

In 2018, the average electricity spot price, excluding capacity price, increased by 3.6% to RUB 1,247 (1,204) per MWh in the First Price Zone and increased by 0.2% to RUB 1,043 (1,041) per MWh in the Urals hub.

Power consumption

TWh	2018	2017	2016
Nordic countries	399	392	390
Russia	1,055	1,035	1,027
Tyumen	92	95	94
Chelyabinsk	35	33	35
Russia Urals area	260	261	259

Average prices

	2018	2017	2016
Spot price for power in Nord Pool power exchange, EUR/MWh	44,0	29,4	26,9
Spot price for power in Finland, EUR/MWh	46,8	33,2	32,4
Spot price for power in Sweden, SE3, Stockholm, EUR/MWh	44,5	31,2	29,2
Spot price for power in Sweden, SE2, Sundsvall, EUR/MWh	44,2	30,8	29
Spot price for power in European and Urals part of Russia, RUB/MWh ¹⁾	1,247	1,204	1,204
Average capacity price, tRUB/MW/month	609	535	481
Spot price for power in Germany, EUR/MWh	44,5	34,2	29
Average regulated gas price in Urals region, RUB/1,000 m ³	3,801	3,685	3,614
Average capacity price for old capacity, tRUB/MW/month ²⁾	148	148	140
Average capacity price for new capacity, tRUB/MW/month ²⁾	1,075	899	815
Spot price for power (market price), Urals hub, RUB/MWh ¹⁾	1,043	1,041	1,054
CO ₂ , (ETS EUA), EUR/tonne CO ₂	16	6	5
Coal (ICE Rotterdam), USD/tonne	92	84	59
Oil (Brent Crude), USD/bbl	72	55	45

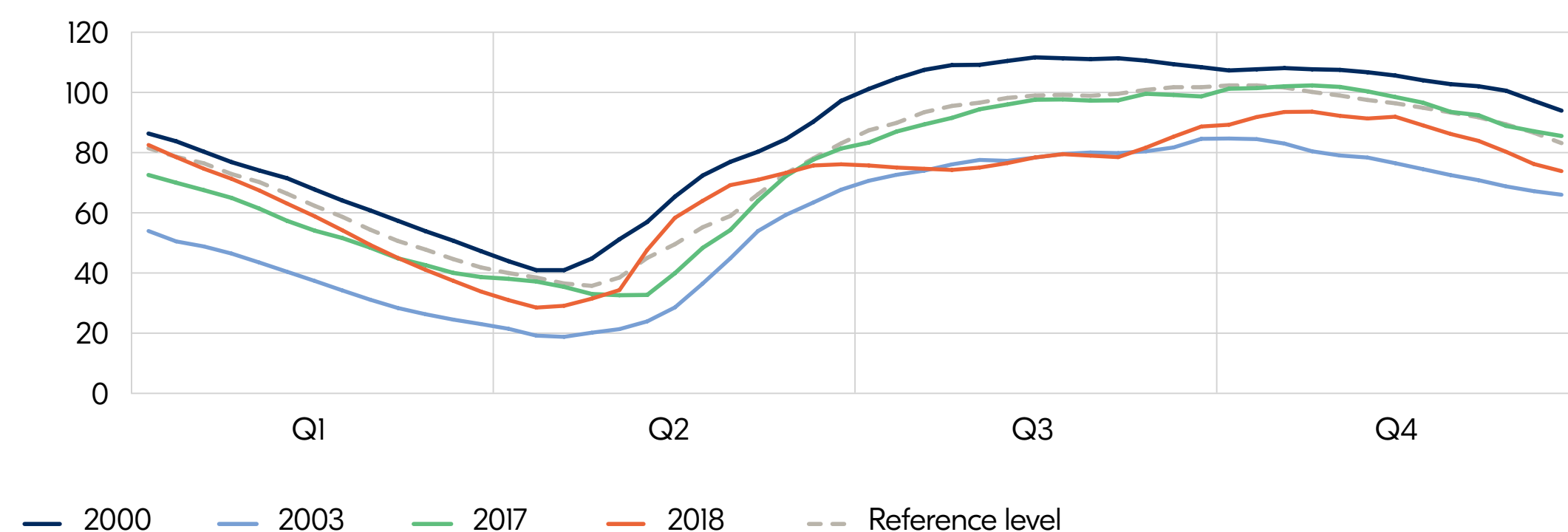
1) Excluding capacity tariff.

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

Water reservoirs

TWh	31 Dec 2018	31 Dec 2017	31 Dec 2016
Nordic water reservoirs level	74	86	75
Nordic water reservoirs level, long-term average	83	83	83

Nordic water reservoirs, energy content, TWh



Source: Nord Pool

Export/import

TWh (+ = import to, - = export from Nordic area)	2018	2017	2016
Export/import between Nordic area and Continental Europe+Baltics	-10	-15	-10
Export/import between Nordic area and Russia	8	6	6
Export/import Nordic area, total	-2	-9	-4

European regulatory environment

COP24 agreed on the operational rules of the Paris Agreement

On 15 December, the United Nation's climate conference (COP24) in Poland approved the rules of the implementation of the Paris Agreement. The Agreement will come into force in 2020. The rules include

monitoring and reporting of greenhouse gas emissions, reporting on climate finance, and the process for increasing the climate ambition in the future. However, rules on market mechanisms and global carbon markets are pending and will be negotiated late 2019.

The Paris Agreement asks countries to submit their long-term climate strategies and revisions of the existing emission reduction commitments by early 2020. The current aggregated commitments are far from enough to meet the global goal of keeping the temperature increase below 1.5°C. According to the International Panel on Climate Change (IPCC), this requires “rapid and far-reaching transitions” including carbon dioxide removal from the atmosphere. Global net carbon dioxide emissions have to decline by 45% from 2010 to 2030 and be net-zero by 2050. According to the IPCC, the power sector should reduce emissions by 100% well before 2050.

The EU 2050 climate strategy sets the long-term framework

On 28 November, the European Commission published the proposal “A Clean Planet for All”, establishing a strategic vision for 2050. The Commission foresees a 30–50% decline in energy consumption and a significantly growing role of electricity by 50–200%. Concrete proposals for the EU targets and policies post 2030 are expected from the next Commission.

Fortum considers the proposed strategy as ambitious and balanced. The carbon neutrality target for 2050 and the intermediate targets for 2030–2050 should be confirmed by the EU as soon as possible. In Fortum's view, carbon pricing will be the key measure for reaching carbon neutrality, and the EU should develop a market mechanism to reward also the capture of CO₂ directly from the air or from flue gases.

The German Coal Commission adopts its final report

The Coal Commission suggests in its report to the German Government that coal would be phased out from the German energy mix by 2038. In 2032, there will be an assessment on the option to phase-out coal already in 2035. The report suggests that after 2022, 30 GW of coal capacity could be online meaning that 12.5 GW of coal capacity would have to be closed down compared to 2017. In 2030, only 17 GW of coal capacity would remain. Closing down nuclear and coal at the same time underlines the important role of gas in the energy mix.

The report proposes compensations for coal plant operators. A compensation to customers should be offered through lower grid fees or lowered electricity tax rates, as the Commission expects the power price to increase as a result of the closures. Also the regions suffering from the coal phase-out should receive compensation in order to mitigate the resulting negative structural effects on their economies. Furthermore, it is suggested that a consequent amount of CO₂ allowances would be cancelled so that the national policy measure would not water down the operation of the EU Emission Trading Scheme (ETS).

Fortum hopes that the German Government will give its opinion on the report as soon as possible, and that the preparations for the respective laws and regulations will start swiftly. Detailed rules on compensations would be necessary for the operators to make decisions on their production capacities.

Sustainable financing rules affect the whole EU financing sector

In May 2018, the EU Commission presented the first set of legislative proposals based on the strategy and action plan of sustainable financing. This includes a proposal to develop an EU-wide taxonomy system to help investors assess the sustainability and impact of economic activities. In addition, the guidelines on non-financial reporting will be revised and EU labels for green financial products will be developed.

The risk related to the taxonomy development is, among other things, that it will take a negative view on certain low-carbon technologies (e.g. waste-to-energy and nuclear) which can increase the financing costs of future investments.

In Fortum's view, while supporting the overall objective of the Commission proposals, initiatives to promote sustainable investments in the energy sector have to be technology neutral and aim for low-carbon fossil-free solutions. It is also essential to ensure that the planned taxonomy is developed in a transparent manner with a market-based approach.

EU waste package entered into force

The EU waste package, expected to effectively promote a circular economy, was officially published in June 2018 and member states are to implement the legislation by July 2020. The recycling targets for municipal solid waste and packaging waste will be increased and the landfilling of municipal waste will be further limited by 2030. Further, the quality and comparability of waste statistics will be improved, the calculation methods for recycling targets will be aligned, and e-registers for hazardous waste will be established.

Rules on sustainable plastics use

In January 2018, the EU Commission published a communication for an EU plastics strategy. The target is to transform the way plastic products are designed, produced, used, and recycled in the EU. Better design of plastic products, higher recycling rates, and better quality recyclates will help boost the markets for secondary raw material plastics with greater added value for a competitive European plastics industry. All Nordic countries have developed their own roadmaps on sustainable plastics use.

Fortum welcomes the initiative to boost the markets for recycled plastics. The plastics strategy is expected to result in business opportunities for Fortum's recycling and waste solutions.

Unexpected end-user price freeze in Poland

On 1 January 2019, the new Act on the Excise Tax and changes in other laws suddenly and unexpectedly came into effect in Poland, freezing end-user electricity prices at the level of 30 June 2018, with a proposed governmental mechanism to compensate suppliers for potential losses. The price freeze is a response to rapidly increased electricity prices, caused by the higher CO₂ price. The law is expected to be challenged by the European Commission as the planned compensation to power companies can be regarded as illegal state aid and the measure should have been notified to the Commission before implementing it. Fortum will continue to monitor the situation closely and will work jointly with the relevant bodies to seek improved understanding and clarification of the new legislation.

Segment reviews

Fortum's business activities cover the production and sales of electricity and heat, waste-to-energy and circular economy solutions, as well as energy-sector expert services and various consumer solutions. Fortum is the third largest power generator and the largest electricity retailer in the Nordic countries. Globally, the company is one of the leading heat producers. As two thirds of Fortum's power production is hydro and nuclear, the company is also among the lowest-emitting generators in Europe.

With core operations in 10 countries, Fortum employs a diverse team of more than 8,000 energy-sector professionals. Fortum has 124 hydro power plants, 27 CHP (combined heat and power), condensing, and nuclear power plants as well as three wind power parks and three solar power plants. Globally, the company supplies heat in 23 cities and towns and has five main waste treatment facilities. Fortum's key markets are the Nordic and Baltic countries, Russia, Poland, and India.

Fortum's reportable segments under IFRS are Generation, City Solutions, Consumer Solutions, and Russia. M&A and Solar & Wind

Development, Technology and New Ventures as well as corporate functions are reported under Other Operations. Fortum's participation in Uniper SE is also reported as part of Other Operations.

In November 2018, Fortum announced that the solar and wind businesses were reorganised as they have grown beyond the initial development phase. The wind operations became a business area within the Generation division and the solar operations a business within the City Solutions division. The Russian wind and solar operations continues as a part of the Russia division. The segment reporting will be changed as of 2019 and 2018 figures will be restated accordingly.

Generation

The Generation segment comprises power production in the Nordics including nuclear, hydro and thermal power production, power portfolio optimisation, trading and industrial intelligence, and nuclear services globally.

EUR million	2018	2017	Change 18/17
Sales	1,837	1,677	10%
- power sales	1,767	1,649	7%
of which Nordic power sales ¹⁾	1,401	1,342	4%
- other sales	70	28	150%
Comparable EBITDA	762	603	26%
Comparable operating profit	631	478	32%
Operating profit	738	501	47%
Share of profits from associates and joint ventures ²⁾	-72	-1	-7,100%
Comparable net assets (at period-end)	6,295	5,672	11%
Comparable return on net assets,%	11.1	8.4	32%
Capital expenditure and gross investments in shares	194	264	-27%
Number of employees	1,075	1,035	4%

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 19).

The Generation segment's total power generation in the Nordic countries decreased due to lower hydropower volumes caused by low inflows and low reservoir levels in the third and fourth quarters and slightly lower nuclear power generation resulting from the closure of Oskarshamn 1 in June 2017. The CO₂-free production accounted for 100% (99%) of the total power production.

The achieved power price in the Generation segment increased by EUR 2.8, +9% due to higher spot prices.

Comparable operating profit increased by 32%, driven by the higher achieved power price and lower real-estate and capacity taxes in Swedish hydro and nuclear power plants, partly offset by lower hydro production volumes.

Operating profit was positively affected by EUR 108 (23) million of capital gains, fair value change of non-hedge accounted derivatives, nuclear related adjustments, and impairment charges (► [Note 6](#)).

The negative result contribution from associates and joint ventures was mainly due to nuclear related adjustments. The adjustments had a positive impact on other financial expenses and the total impact on Fortum's net profit was marginal (► [Note 19](#)).

In June 2018, Fortum sold its 10% ownership in Hafslund Produksjon and booked a one-time tax-free capital gain of EUR 77 million in the Generation segment's 2018 results.

Power generation by source

TWh	2018	2017	Change 18/17
Hydropower, Nordic	19.1	20.7	-8%
Nuclear power, Nordic	22.8	23.0	-1%
Thermal power, Nordic	0.1	0.5	-80%
Total	42.0	44.2	-5%

Nordic sales volume

TWh	2018	2017	Change 18/17
Nordic sales volume	48.4	51.8	0%
of which Nordic Power sales volume ¹⁾	40.5	42.2	-4%

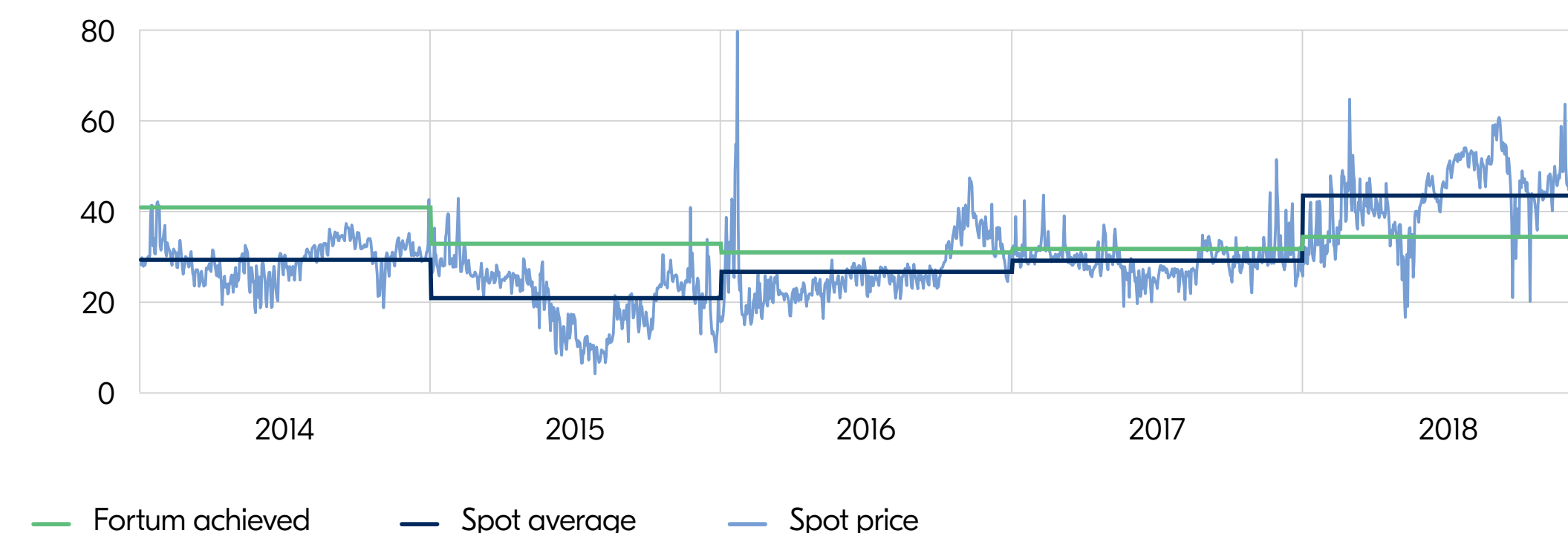
1) The Nordic power sales income and volume includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

Sales price

EUR/MWh	2018	2017	Change 18/17
Generation's Nordic power price ²⁾	34.6	31.8	9%

2) Generation's Nordic power price includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

Nord Pool, power price, 2014–2018, EUR/MWh



Source: Nord Pool, Fortum

City Solutions

City Solutions develops sustainable city solutions into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. 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	2018	2017	Change 18/17
Sales	1,094	1,015	8%
- heat sales	604	523	15%
- power sales	119	121	-2%
- waste treatment sales ¹⁾	211	195	8%
- other sales ²⁾	161	175	-8%
Comparable EBITDA	284	262	8%
Comparable operating profit	113	98	15%
Operating profit	109	102	7%
Share of profits from associates and joint ventures	74	80	-8%
Comparable net assets (at period-end)	3,743	3,728	0%
Comparable return on net assets,%	5.0	5.5	-9%
Capital expenditure and gross investments in shares	222	556	-60%
Number of employees	1,956	1,907	3%

1) Waste treatment sales comprise gate fees at waste treatment plants and environmental construction services.

2) Other sales comprise mainly operation and maintenance services and fuel sales.

On 4 August 2017, Fortum concluded the restructuring of its ownership in Hafslund. As of 1 August 2017, Fortum's 50% ownership in Fortum Oslo Varme (the combined company of Hafslund's Heat business area and Klemetsrudanlegget) has been consolidated as a subsidiary to Fortum in the results of City Solutions.

Heat sales volumes increased by 8% mainly driven by the consolidation of Fortum Oslo Varme. The negative impact of the warm weather in the second quarter offset the positive effects of the cold weather in the first quarter.

Comparable operating profit increased by 15%. The positive effect of EUR 37 (15) million of the consolidation of Fortum Oslo Varme was partly offset by the weaker result in the recycling and waste business.

The seasonality of the City Solutions business has increased, due to the consolidation of Fortum Oslo Varme and the new seasonal pricing. On average, the annual effect of the seasonal pricing is neutral.

The consolidation of Fortum Oslo Varme had a positive effect of EUR 70 (29) million on the comparable EBITDA.

Operating profit was negatively affected by EUR -4 (4) million of fair-value change of non-hedge-accounted derivatives (► [Note 6](#)).

Heat sales by country

TWh	2018	2017	Change 18/17
Finland	3.8	3.9	-3%
Poland	3.5	3.7	-5%
Norway	1.6	0.7	129%
Other countries	1.9	1.8	6%
Total	10.8	10.0	8%

Power sales by country

TWh	2018	2017	Change 18/17
Finland	1.4	1.5	-7%
Poland	0.5	0.4	25%
Other countries	0.8	0.7	14%
Total	2.7	2.6	4%

Consumer Solutions

Consumer Solutions comprises electricity and gas retail businesses in the Nordics and Poland, including the customer service, invoicing, and debt collection business. Fortum is the largest electricity retailer in the Nordics with approximately 2.5 million customers across different brands in Finland, Sweden, Norway, and Poland. The business provides electricity and related value-added products as well as new digital customer solutions.

EUR million	2018	2017	Change 18/17
Sales	1,759	1,097	60%
- power sales	1,547	862	79%
- other sales	212	235	-10%
Comparable EBITDA	110	57	93%
Comparable operating profit	53	41	29%
Operating profit	75	39	92%
Comparable net assets (at period-end)	648	638	2%
Capital expenditure and gross investments in shares	47	493	-90%
Number of employees	1,399	1,543	-9%

On 4 August 2017, Fortum concluded the restructuring of its ownership in Hafslund. As of 1 August 2017, Hafslund Markets has been consolidated into the results of Consumer Solutions.

The consolidation of Hafslund and the cold weather in February and March increased electricity sales volumes and, consequently, sales for the segment. Increasing spot power prices during the year also had a positive impact. The competition and customer churn in the Nordic market continued to be a challenge.

Comparable operating profit increased by 20%, due to the consolidation of Hafslund, partly offset by lower sales margins and the amended service agreements for the divested electricity distribution companies. The effect of the consolidation of Hafslund was EUR 31 (13) million.

The consolidation of Hafslund had a positive effect of EUR 54 (22) million on the comparable EBITDA. Due to the capitalisation of sales commissions, the implementation of IFRS 15 had a positive effect of EUR 32 million on the comparable EBITDA. EUR 22 million of the IFRS 15 effect was related to the Hafslund operations.

Operating profit was positively affected by EUR 22 (-2) million of fair-value change of non-hedge-accounted derivatives (► [Note 6](#)).

Sales volumes

TWh	2018	2017	Change 18/17
Electricity	30.3	20.5	48%
Gas*	4.1	4.0	2%

* Not including wholesale volumes.

Number of customers

Thousands *	2018	2017	Change 17/16
Electricity	2,440	2,470	-1%
Gas	30	20	50%
Total	2,470	2,490	-1%

* Rounded to the nearest 10,000.

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	2018	2017	Change 18/17
Sales	1,069	1,101	-3%
- power sales	872	837	4%
- heat sales	193	258	-25%
- other sales	4	6	-33%
Comparable EBITDA	417	438	-5%
Comparable operating profit	271	296	-8%
Operating profit	273	295	-7%
Share of profits from associates and joint ventures	36	31	16%
Comparable net assets (at period-end)	2,789	3,161	-12%
Comparable return on net assets,%	10.3	10.1	2%
Capital expenditure and gross investments in shares	117	277	-58%
Number of employees	2,941	3,495	-16%

Power generation volumes increased, due to the commissioning of the Chelyabinsk GRES unit 3 and good availability. Heat production volumes increased, due to cold weather, partly offset by the transfer of the heat-only boilers in Chelyabinsk to the Yustek joint venture. Power generation volumes in the first quarter of 2017 were lower due to a maintenance outage at the Nyagan power plant.

Sales declined due to the weaker Russian rouble and the transfer of the heat business in Tyumen to the Yustek joint venture. The decline was partly offset by higher received CSA payments and higher power and heat sales volumes.

Comparable operating profit decreased by 8%. The new production units and higher received CSA payments had a positive effect on the results. The result was negatively impacted by the change in the Russian rouble exchange rate, bad-debt provisions, and lower electricity margins. The increase in CSA payments was related to Nyagan 1 and Nyagan 2 receiving higher payments for the last years of the CSA period, positive

spot market corrections, and contributions from renewable generation. The increase in CSA payments was partly offset by the corrections arising from lower bond yields. The result for the comparison period in 2017 was positively affected by a one-time item from improved bad-debt collections. The effect of the change in the Russian rouble exchange rate was EUR -32 million.

Key electricity, capacity and gas prices for Fortum Russia

	2018	2017	Change 18/17
Electricity spot price (market price), Urals hub, RUB/MWh	1,043	1,041	0%
Average regulated gas price, Urals region, RUB/1,000 m ³	3,801	3,685	3%
Average capacity price for CCS and other, tRUB/MW/month ^{1) 2)}	148	148	0%
Average capacity price for CSA, tRUB/MW/month ²⁾	1,075	899	20%
Average capacity price, tRUB/MW/month	609	535	14%
Achieved power price for Fortum in Russia, RUB/MWh	1,888	1,813	4%
Achieved power price for Fortum in Russia, EUR/MWh ³⁾	25.6	27.5	-7%

1) Including capacity receiving payments under "forced mode status", regulated tariffs, and bilateral agreements.

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

3) Translated using the average exchange rate.

Russian power generation and heat production

TWh	2018	2017	Change 18/17
Russian power generation	29.6	26.3	13%
Russian heat production	20.4	20.0	2%

The Chelyabinsk GRES unit 3 was commissioned in November 2017. Fortum's 35-MW wind power plant was commissioned in January 2018, and the 35-MW solar plants have been consolidated since December 2017.

Other Operations

Other Operations comprises the two development units 'M&A and Solar & Wind Development' and 'Technology and New Ventures' as well as corporate functions. Other Operations also includes Fortum's shareholding in Uniper, which is consolidated as an associated company as of 30 June 2018 (► [Note 3](#)).

The total acquisition cost for Uniper, including direct costs relating to the acquisition, is reported in 'Participations in associated companies and joint ventures'. The purchase price allocation will be completed within the one-year window from the acquisition date, according to IFRS. As Uniper publishes its interim reports later than Fortum, Fortum's share of Uniper's results will be accounted for with a time-lag of one quarter, with potential adjustments. Fortum's Financial Statements 2018 only includes Fortum's share of Uniper's third-quarter results amounting to EUR -2 million (► [Note 3](#)). Uniper will report its full-year 2018 results on 12 March 2019.

In December 2018, Fortum committed to invest EUR 150 million in Valo Ventures over a period of 10 years. Valo Ventures is a new global venture capital fund launched by former Google Capital co-founder, Scott Tierney. It is an independent fund investing in digital and cloud-scale technology start-ups in North America and Europe. Valo Ventures is aligned with Fortum's vision 'For a cleaner world' and strategy. One of Fortum's strategic priorities to drive decarbonisation is building options for significant new innovative businesses. Becoming a digital leader is a critical enabler to achieve these goals.

In June 2018, Fortum agreed to sell a 54% share of its solar power company operating four solar power plants in India. The transaction was closed in August 2018. The total consideration from the divestment on a debt- and cash-free basis, including the effect of deconsolidating Fortum's minority part of the net debt, was EUR 147 million. The positive impact on Fortum's 2018 comparable operating profit was EUR 26 million. Fortum's capital recycling business model enables Fortum to efficiently utilise its key competences to develop, construct, and operate power plants while utilising partnerships and other forms of cooperation to create a more asset-light structure and thereby enable

more investments into building new renewable capacity. Profits from the capital recycling business model are recorded in comparable operating profit because the business results are realised through divesting the shareholding, either partially or totally.

Capital expenditures, divestments and investments in shares

EUR million	2018	2017
Capital expenditure		
Intangible assets	53	18
Property, plant and equipment	532	672
Total	584	690
Gross investments in shares		
Subsidiaries	36	982
Associated companies and joint ventures	4,041	135
Other investments	11	8
Total	4,088	1,125

In 2018, capital expenditures and investments in shares totalled EUR 4,672 (1,815) million, mainly related to the purchase of Uniper shares. Capital expenditures were EUR 584 (690) million (► [Note 6](#)), below the 2018 guidance of EUR 600–700 million. Capital expenditures for 2018 were below the guidance level due to the timing of some capital expenditures being shifted to 2019.

See also ► [Note 18.2](#) 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	5		2018
Hydro plants in Sweden and Finland	Hydro	5		2018
Hydro plants in Sweden and Finland	Hydro	~15		2019
City Solutions				
Zabrze, Poland	CHP	75	145	Q1/2019
Kivenlahti, Finland	Bio HOB ¹⁾		58	2020
Russia				
Ulyanovsk	Wind	35		Jan 2018
Solar ²⁾	Solar	110		2021–2022
Other Operations				
Ånstadblåheia, Norway	Wind	50		Q4/2018
Sørfjord, Norway	Wind	97		2019
Pavagada 2, India	Solar	250		2019

1) Biofuel-fired heat-only boiler (HOB).

2) Separate investment decision needed

Generation

Through its interest in TVO, Fortum is participating in the building of Olkiluoto 3 (OL3), a 1,600-MW nuclear power plant unit in Finland. OL3 is funded through external loans, share issues and shareholder loans according to shareholder agreements between the owners and TVO. As a 25% shareholder in OL3, Fortum has committed to funding of the project pro rata. At the end of 2018, Fortum's outstanding receivables regarding OL3 were EUR 170 million and the outstanding commitment was EUR 63 million (► [Note 19](#)). In March 2018, TVO and the supplier consortium companies signed a comprehensive settlement agreement whereby the arbitration concerning the delay of OL3 is settled by financial compensation of EUR 450 million to be paid to TVO. Based on the project schedule of March 2018 and the effect of the settlement agreement, TVO estimated the total investment in OL3 to be approximately EUR 5.5 billion. According to the time plan updated by

plant supplier Areva-Siemens Consortium in November 2018, the plant is expected to start regular electricity production in January 2020.

In June 2018, Fortum sold its 10% ownership in Hafslund Produksjon Holding AS to Svartisen Holding AS. As part of the restructuring of the Hafslund ownership in 2017, Fortum acquired the ownership in Hafslund Produksjon. The sales price for the shares was EUR 160 million. Fortum booked a capital gain of EUR 77 million in the Generation segment 2018 results.

City Solutions

In October 2018, Fortum announced it is replacing part of its fossil-based heat production by building a biofuel-fired heating facility in Kivenlahti, Finland. The construction of the plant is a significant step towards carbon neutral district heating production in Espoo, as the plant will allow for the decommissioning of the old coal-fired heating boiler in Suomenoja. The value of the investment is approximately EUR 40 million. The new facility will have a maximum heat output of 58 MW. Construction started in November 2018 and heat production is expected to begin in 2020.

The joint venture Kauno Kogeneracinė Jėgainė, owned by Fortum and Lietuvos Energija, is building a waste-to-energy CHP plant in Kaunas, Lithuania. The electricity capacity of the Kaunas plant will be 24 MW and the thermal capacity approximately 70 MW. Fortum's ownership in the joint venture is 49%. The CHP plant is expected to be commissioned in mid-2020.

In 2015, Fortum decided to build a new multi-fuel CHP plant in Zabrze, Poland, which primarily will be fuelled by refuse derived fuel (RDF) and coal but can also use biomass and a mixture of fuels. The new plant replaces the existing purely coal-fired units in Zabrze and Bytom. It will have a production capacity of 145 MW of heat and 75 MW of electricity and the planned start of commercial operations is during the first quarter of 2019.

Russia

In June 2018, Fortum won the right to build 110 MW of solar capacity in a CSA auction. The power plants are to be commissioned during the years 2021–2022.

In June 2018, the Fortum-Rusnano wind investment fund (Fortum's ownership 50%) won the right to build 823 MW of wind capacity in a CSA auction. The wind parks were to be commissioned during the years 2019–2023. During the fourth quarter 2018, the wind investment fund made an investment decision on a 100-MW wind farm. Power production is expected to start during the first half of 2020.

In June 2017, the Fortum-Rusnano wind investment fund won the right to build 1,000 MW of wind capacity in a CSA auction. The wind parks were to be commissioned during the years 2018–2022. In October 2017 and October 2018, the wind investment fund made investment decisions on 50-MW and a 200-MW wind farm, respectively. On 1 January 2019, the 50-MW wind farm started operation. Power production at the 200-MW wind farm is expected to start during the first half of 2020.

The investment decisions related to the renewable capacities won by Fortum and the Fortum-Rusnano wind investment fund in 2017 and 2018 are made on a case-by-case basis. Fortum's maximum equity commitment is RUB 15 billion. In the longer term, Fortum seeks to maintain an asset-light structure by forming potential partnerships and other forms of co-operation.

Other Operations

In December 2018, Fortum committed to invest EUR 150 million in Valo Ventures over a period of 10 years. It is an independent fund investing in digital and cloud-scale technology start-ups in North America and Europe.

In December 2018, Fortum won the right from Gujarat Urja Vikas Nigam Ltd. to build a 250-MW solar power plant in Raghnesda solar park in District Banaskhata, Gujarat, India. In January 2019, the Government of Gujarat cancelled the result of the auction on the grounds that it considers the winning tariffs to be too high. The Government of Gujarat has indicated that there will be a new auction,

for which they intend to reduce the solar park charges to operators, in order to lower the costs for the bidders and enable lower bids.

In June 2018, Fortum won the right to build a 250-MW solar power plant in the Pavagada solar park in Karnataka, India. The capital expenditure is estimated to be approximately EUR 120 million. Commissioning of the plant is expected in 2019.

In June 2018, Fortum signed an agreement to sell a 54% share of its solar power company operating four solar power plants in India to UK Climate Investments (40%) and Elite Alfred Berg (14%). Elite Alfred Berg has the option to buy up to an additional 16% from Fortum. The total capacity of this portfolio is 185 MW. Fortum aims to retain a significant minority ownership in the solar power company and to continue to provide operation and maintenance services based on a long-term agreement. The total consideration from the divestment on a debt- and cash-free basis, including the effect of deconsolidating Fortum's minority part of the net debt, was EUR 147 million. The positive impact on Fortum's third quarter comparable operating profit was EUR 26 million. The transaction was closed in August 2018.

In January 2017, Fortum finalised the acquisition of three wind power projects from the Norwegian company Nordkraft. The transaction consisted of the already operational Nygårdsfjellet wind farm as well as the fully-permitted Ånstadblåheia and Sørffjord projects. The Ånstadblåheia wind farm was commissioned during the fourth quarter of 2018 and the Sørffjord wind farm is expected to be commissioned in 2019. The total installed capacity of the three wind farms will be approximately 180 MW.

In 2016, Fortum made the final investment decision on the 75-MW Solberg wind park project in northern Sweden. Skellefteå Kraft is participating in the project with a 50% share. The wind park was taken into operation in the first quarter of 2018.

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 is strengthening its in-house innovation and digitalisation efforts and building partnerships with leading global suppliers, technology and service companies, and research institutions. Fortum makes direct and indirect investments in start-ups that have promising new innovations focused 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 that 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.

The Group reports its R&D expenditure on a yearly basis. In 2018, Fortum's R&D expenditure was EUR 56 (53) million, or 1.1% (1.2%) of sales.

	2018	2017	2016	Change 18/17
R&D expenditure, EUR million	56	53	52	6%
R&D expenditure, % of sales	1.1	1.2	1.4	

Changes in Fortum's Management

On 29 August 2018, Fortum announced that Mr. Kari Kautinen, Senior Vice President, Solar & Wind Development and M&A, had resigned. He left Fortum at the end of September 2018.

On 3 September 2018, Fortum announced that Mr. Arun Aggarwal, M.Sc. (Eng.), 49, was appointed Senior Vice President, Business Technology and member of Fortum's Executive Management. This is a new position at Fortum. Mr. Aggarwal has Group-wide responsibility to lead Fortum's strategic IT, as well as digital innovation and transformation. He assumed this position in mid-October 2018 and reports to the President and CEO.

Annual General Meeting 2018

Fortum Corporation's Annual General Meeting, held in Helsinki on 28 March 2018, adopted the Financial Statements and the Consolidated Financial Statements for the financial period 1 31 December 2017 and discharged from liability the members of the Fortum Board of Directors and the President and CEO for the year 2017.

The Annual General Meeting decided to pay a dividend of EUR 1.10 per share for the financial year that ended on 31 December 2017. The record date for the dividend payment was 3 April 2018, and the dividend payment date was 10 April 2018.

The Annual General Meeting confirmed the remuneration of EUR 75,000 per year to the Chairman, EUR 57,000 per year to the Deputy Chairman, EUR 40,000 per year to each member of the Board, as well as EUR 57,000 per year to the Board member acting as the Chairman of the Audit and Risk Committee if he or she is not at the same time acting as Chairman or Deputy Chairman of the Board. In addition, a EUR 600 meeting fee is paid for Board meetings as well as for committee meetings. The meeting fee is doubled for Board members who live outside Finland in Europe and tripled for members living outside Europe. For Board members living in Finland, the fee for each Board and Board Committee meeting is doubled for meetings held outside Finland and tripled for meetings outside Europe. For Board and Committee meetings held as a telephone conference, the basic meeting fee is paid to all members. No fee is paid for decisions made without a separate meeting.

The Annual General Meeting also confirmed the number of members in the Board of Directors to be eight. Mr. Matti Lievonon was elected as Chairman, Mr. Klaus-Dieter Maubach as a new member and Deputy Chairman, Mr. Heinz-Werner Binzel, Ms. Eva Hamilton, Mr. Kim Ignatius, Ms. Anja McAlister, and Mr. Veli-Matti Reinikkala were re-elected as members, and Ms. Essimari Kairisto was elected as a new member.

In addition, Deloitte Oy was re-elected as auditor, with Authorised Public Accountant Ms Reeta Virolainen as the principal auditor. The auditor's fee is paid pursuant to an invoice approved by the company.

The Annual General Meeting authorised the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum number of 20,000,000 shares, which corresponds to approximately 2.25 per cent of all the shares in the company. It was also decided that own shares could be repurchased or disposed of in connection with acquisitions, investments or other business transactions, or be retained or cancelled. The repurchases or disposals could not be made for the purposes of the company's incentive and remuneration schemes. The authorisation cancelled the authorisation resolved by the Annual General Meeting of 2017 and it will be effective until the next Annual General Meeting and, in any event, for a period of no longer than 18 months.

The Annual General Meeting decided on the following amendments to the Articles of Association of the company:

The first sentence of Art. 6 is amended in order to set the maximum number of members of the Board of Directors of the company at ten members instead of the current eight members, as follows: "The Board of Directors shall have a Chairman, a Deputy Chairman, and a minimum of three (3) and a maximum of eight (8) ordinary members who are elected at the General Meeting." Art. 6 is otherwise unchanged.

Due to the new Auditing Act (1141/2015) which entered into force on 1 January 2015, the reference to approval by the Central Chamber of Commerce set forth in the first sentence of Art. 11 shall be deleted and replaced with a reference to an auditing firm referred to in the Auditing Act, as follows: "The company shall have one regular auditor who must be an Auditing Firm referred to in the Auditing Act." Art. 11 is otherwise unchanged.

Due to the amendment of the Limited Liability Companies Act that entered into force on 21 June 2017, the reference to Chapter 4, Section 2, Subsection 2 of the Finnish Limited Liability Companies Act set forth in the last sentence of Art. 12 shall be replaced with a reference to Chapter 5, Section 6 a of the Limited Liability Companies Act, as follows:

"However, the notice of GM must in any event be delivered at least nine (9) days prior to the General Meeting Record Date referred to in Chapter 5, Section 6 a of the Finnish Limited Liability Companies Act." Art. 12 is otherwise unchanged.

The Annual General Meeting of Fortum Corporation decided, in accordance with Chapter 3, Section 14 a (3) of the Finnish Companies Act, that the rights to all such shares entered in the Joint Account and to the rights attached to such shares that had not been requested to be registered in the book-entry system in accordance with Chapter 6, Section 3 of the Act on the Book-Entry System and Clearing Operations prior to the decision by the Annual General Meeting, are forfeited. In the merger of Länsivoima Oyj (former Lounais-Suomen Sähkö Oy) to Fortum Corporation in 2000, those shareholders of Länsivoima Oyj that had not produced their share certificates and had not requested their rights to be registered in the book-entry system, received their respective shares of Fortum Corporation as merger consideration to a joint book-entry account opened on their behalf (the “Joint Account”). In addition to the shares, the rights attached to such shares, such as undrawn dividends, are forfeited. The provisions applicable to treasury shares held by the company will apply to the forfeited shares.

At the meeting held after the Annual General Meeting, Fortum’s Board of Directors elected, from among its members, to the Nomination and Remuneration Committee Matti Lievonen as Chairman and Eva Hamilton, Klaus-Dieter Maubach and Anja McAlister as members.

Furthermore, the Board elected to the Audit and Risk Committee Kim Ignatius as Chairman and Heinz-Werner Binzel, Essimari Kairisto and Veli-Matti Reinikkala as members.

Shareholders Nomination Board

On 5 October 2018, Mr. Kimmo Viertola, Director General, Prime Minister’s Office, Ownership steering department (Chairman), Mr. Risto Murto, President and CEO, Varma Mutual Pension Insurance Company, and Mr. Jouko Pölönen, President and CEO, Ilmarinen Mutual Pension Insurance Company were appointed to Fortum’s Shareholders’ Nomination Board. In addition, the Chairman of Fortum’s Board of Directors Mr. Matti Lievonen, is a member of the Shareholders’ Nomination Board.

On 29 January 2019, Fortum’s Shareholders’ Nomination Board submitted its proposals to Fortum’s Board of Directors for the 2019 Annual General Meeting concerning the number of the Board members,

the members to be nominated to the Board of Directors, and the election of the Chairman and Deputy Chairman. The Shareholders’ Nomination Board did not reach a unanimous proposal, and consequently did not make a proposal for the remuneration paid to the Board of Directors for their following term of office.

Other events during the reporting period

The Board of Directors of Fortum Corporation has decided to commence the 2019–2021 long-term incentive (LTI) plan for key employees and executives. The 2019–2021 LTI plan is part of Fortum’s ongoing LTI programme and follows the same principles as the previous plan. The performance measure applied to the 2019–2021 LTI plan will be based on the total shareholder return measured relative to the peer group comprising selected European utility companies. The 2019–2021 LTI plan will comprise approximately 130 participants, including the members of Fortum Executive Management.

Events after the balance sheet date

On 1 January 2019, Fortum acquired all remaining C-shares of TVO entitling to the power production of the Meri-Pori coal condensing power plant. Fortum is now entitled to 100% of the power production of the plant, an increase from 67% previously. The Meri-Pori power plant is mainly used in Fingrid’s capacity reserve and as back-up capacity. See more information in [▶ Note 19](#) Participations in associated companies and joint ventures.

Key drivers and risks

Fortum’s financial results are exposed to a number of economic, strategic, energy policy and regulation, financial, and operational risks. Fortum is exposed to these risks both directly and indirectly through its associated companies.

Some of the key factors influencing Fortum’s business performance are the European commodity and electricity wholesale prices. The key short-term drivers behind the electricity wholesale price development in the Nordic region are the prices of fuels and CO₂ emission allowances,

the hydrological situation, temperature, economic development, and the electricity import-export balance.

Global economic growth impacts commodity and CO₂ emission allowance prices, which, in turn, impact the Nordic wholesale price of electricity. In all regions, fuel prices and power plant availability also impact profitability. In addition, increased volatility in exchange rates could have both translation and transaction effects on Fortum’s financials, especially through the Russian rouble and Swedish krona.

In the Nordic countries, changes in the regulatory and fiscal environment add risks for the energy and environmental management sectors. 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 updated strategy includes broadening of the revenue base and diversification into new businesses, technologies, and markets. The environmental management business is based on the framework and opportunities created by environmental regulation. Being able to respond to customer needs created by the tightening regulation is a key success factor.

For Fortum’s Russian business, the key drivers are economic growth, the rouble exchange rate, regulation of the heat business, and the further development of the electricity and capacity markets. A key profitability driver is the received capacity payment based on the CSA contracts and Competitive Capacity Selection (CCS) auctions. The main part of Fortum’s generation capacity built after 2007 is entitled to CSA payments for approximately 10 years after commissioning of each new unit (approximately 15 years for renewable generation). 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 are adjusted for, among other factors, the weighted average cost of capital (WACC), the consumer price index (CPI), and re-examination of earnings from the electricity-only (spot) market (done every three and six years after commissioning of a unit). In addition, thermal power

plants are entitled to clearly higher CSA payments starting approximately six years after commissioning.

For further details on Fortum's risks and risk management, see the [Risk management](#) section of the Operating and financial review and [Note 4](#) Financial risk management.

Outlook

Hedging

At the end of 2018, approximately 75% of the Generation segment's estimated Nordic power sales volume was hedged at EUR 31 per MWh for 2019, and approximately 45% at EUR 29 per MWh for 2020.

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 electricity derivatives quoted on Nasdaq Commodities.

Capital expenditure and divestments

Fortum currently estimates its capital expenditure, including maintenance but excluding acquisitions, to be in the range of EUR 600–650 million in 2019. This includes solar and wind investments, which can be divested through the capital recycling business model. The maintenance capital expenditure in 2019 is estimated at approximately EUR 300 million, well below the level of depreciation.

In 2020, capital expenditure is expected to decline.

Nordic market

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 the macroeconomic development in Europe and especially in the Nordic countries.

During the fourth quarter of 2018, oil and coal prices started to decrease, while EUA prices still increased. In late January 2019, the forward quotation for coal (ICE Rotterdam) for the remainder of 2019 was around USD 84 per tonne and the market price for EUAs for 2019

at the level of EUR 23 per tonne. The Nordic system electricity forward price at Nasdaq Commodities for the remainder of 2019 was around EUR 48 per MWh and for 2020 around EUR 39 per MWh. In Germany, the electricity forward price for the remainder of 2019 was around EUR 51 per MWh and for 2020 around EUR 49 per MWh. The Nordic water reservoirs were about 10 TWh below the long-term average and were 8 TWh lower than one year earlier.

Generation

The Generation segment's achieved Nordic power price typically depends on factors such as hedge ratios, hedge prices, spot prices, availability and utilisation of Fortum's flexible production portfolio, as well as 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. The achieved power price also includes the results of optimisation of Fortum's hydro and nuclear production as well as operations in the physical and financial commodity markets.

As a result of the nuclear stress tests in the EU, the Swedish Radiation Safety Authority (SSM) has decided on new regulations for Swedish nuclear reactors. For the operators, this means that safety investments should be in place no later than 2020.

The process to review the Swedish nuclear waste fees is done in a three-year cycle. In March 2017, the Swedish Government decided on the new nuclear waste fees for years 2018–2020. In October 2017, the Swedish Parliament decided on changes in the legal framework, impacting calculations of nuclear waste fees and the investment of the nuclear waste fund. In the revised legal framework, the assumed operating time for calculating the waste fee is 50 years, as opposed to the previous assumption of 40 years. The fund is now also allowed to invest in other financial instruments in addition to bonds. Based on these changes, the annual waste fees for Fortum increased by EUR 8 million in 2018.

On 19 June 2018, the Swedish parliament adopted new hydro legislation to come into force on 1 January 2019. According to the new legislation all hydropower shall apply for updated permits. At the same

time hydropower shall be protected to be able to play a key role in the future energy system. In order to protect hydropower, all exemptions of the Water Framework Directives shall be utilised when classifying water bodies. In the new legislation it is stated that the industry shall create a joint hydropower fund to finance major parts of the environmental actions needed. A fund has been established with a total financial cap of SEK 10 billion to be paid over a 20-year period. The major utilities will contribute to the fund based on their share of hydropower production. Fortum's share is expected to be 20–25% of the fund's total financing. In addition to the new legislation, the government has issued an ordinance to establish a national prioritisation plan for the revision of hydropower permits (valid from 11 January 2019).

On 11 June 2018, the Swedish Administrative Court of Appeal gave its decisions on Fortum Sverige AB's hydropower production-related real-estate tax assessments for the years 2009–2014. The court decisions were not in Fortum's favour. Fortum applied for the right to appeal from the Supreme Administrative Court, but did not receive permission to appeal. As the Administrative Court, the Administrative Court of Appeal in Stockholm, and the Supreme Administrative Court have handled only the arguments concerning state aid, the case concerning the other legal documents is now transferred back to the Administrative Court. The disputed amount, excluding interest for the time period, totals approximately SEK 510 million (approximately EUR 50 million). Moreover, Fortum's Swedish companies have appeals for 2011–2016 pending in the Administrative Court relating to the property tax rate for their hydropower plants referring to the same legal grounds. Fortum has paid the real-estate tax in accordance with the legislation. If the final court decision is unfavourable to Fortum, it will not impact Fortum's results. In December 2018, Fortum Sverige AB filed a complaint to the EU Commission regarding the Swedish property tax for hydropower plants regarding 2017 and prior years. Fortum has asked the Commission to investigate whether the Swedish legislation regarding the property tax for hydropower plants and the Swedish court decisions are in line with EU state aid rules.

In September 2016, the Swedish Government presented the budget proposal for the coming years, according to which 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, Fortum's Swedish nuclear capacity tax was EUR 44 million. In 2018, there is no capacity tax. Further, the Swedish hydropower real-estate tax will decrease from 2.8% to 0.5%. The tax is being 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 2018, the tax for Fortum decreased by EUR 20 million to EUR 65 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 in 2019. The real-estate tax values are updated every six years. With the current electricity prices, the tax values for the 2019–2024 period would be lower than they are today.

In 2015, the Swedish OSG decided to permanently discontinue electricity production at Oskarshamn's nuclear plant units 1 and 2. Unit 1 was shut down on 17 June 2017 and unit 2 has been out of operation since June 2013. The closing processes for both units are estimated to take several years.

City Solutions

In City Solutions, stable growth, cash flow and earnings are achieved through investments in new plants and through acquisitions. Fuel cost, availability, flexibility, efficiency, as well as gate fees are key drivers for profitability, but also the power supply/demand balance, electricity prices, and weather conditions affect profitability.

The development of Fortum Oslo Varme's business operations is estimated to require integration-related one-time costs and increased investments over the coming years. The realisation of cost synergies is estimated to gradually start materialising from 2019 onwards, with targeted annual synergies of EUR 5–10 million expected to be achieved by the end of 2020.

Consumer Solutions

After the acquisition of Hafslund Markets in August 2017, a new business strategy for Consumer Solutions was approved by the Fortum Board of Directors in December 2017. The strategic objective is to establish

Consumer Solutions as the leading consumer business in the Nordics, with a customer-centric, multi-brand structure.

Competition in the Nordic electricity retail market is expected to remain challenging, with continued pressure on sales margins and customer churn. To counter the market challenges and create a solid foundation for competitive operations, Consumer Solutions will continue its cost spend in developing new digital services for consumers.

The combined Hafslund Markets and Fortum Markets business, while largely complementary, has identified synergy potential, in terms of both revenue and costs. The short-term priority will be on achieving identified revenue synergies by leveraging established best practices and providing additional products and services to the whole customer base. The realisation of cost synergies will start materialising once the integration of Hafslund Markets is completed, expected in 2019, with cost synergy realisation gradually increasing over the coming years and targeted annual synergies of approximately EUR 10 million to be achieved by the end of 2020.

Russia

In the Russia segment, capacity payments based on CSA contracts are a key driver for earnings growth, as it receives considerably higher capacity payments than through the CCS auctions. Currently Fortum's CSA capacity amounts to 2,368 MW. In February 2018, the System Administrator of the wholesale market published data on the WACC and the CPI for 2017, which were used to calculate the 2018 CSA price. The CSA payments were revised downwards accordingly to reflect the lower bond rates. The regulator also reviewed the guaranteed CSA payments by re-examining earnings from the electricity-only market and revised the CSA payments upwards due to the lower earnings from the electricity-only market.

Fortum's other Russian generation capacity, totalling 2,544 MW, is allowed to participate in the CCS auctions. The long-term CCS for the years 2017–2019 was held at the end of 2015, the CCS for the year 2020 in September 2016, and the CCS for the year 2021 in September 2017. All Fortum plants offered in the auction were selected. Fortum also obtained

“forced mode status”, i.e. it receives payments for the capacity at a higher rate for some of the units at the Argayash power plant. For the years 2017–2019, “forced mode status” was obtained for 195 MW; for the year 2020 for 175 MW, and for the year 2021 for 105 MW. The date of the CCS auction for 2022 has been postponed from 15 September 2018 to 1 May 2019.

In June 2018, Fortum won the right to build 110 MW of solar capacity in a CSA auction. The power plants are to be commissioned during the 2021–2022 and will receive a guaranteed CSA price corresponding to approximately RUB 14,000 per MWh for a period of 15 years.

In June 2018, the Fortum-Rusnano wind investment fund (Fortum's ownership 50%) won the right to build 823 MW of wind capacity in a CSA auction. The wind parks were to be commissioned during 2019–2023 and will receive a guaranteed CSA price corresponding to approximately RUB 7,000–8,000 per MWh for a period of 15 years. In December 2018, the wind investment fund made an investment decision on a 100-MW wind farm.

As of January 2018, Fortum's Ulyanovsk wind farm is listed in the registry of capacity. The 35-MW power plant is Russia's first industrial wind park. It will receive CSA payments for a period of approximately 15 years after commissioning. The CSA price currently corresponds to approximately RUB 11,000 per MWh.

In June 2017, the Fortum-Rusnano wind investment fund won the right to build 1,000 MW of wind capacity in a CSA auction. The wind parks were to be commissioned during 2018–2022 and will receive a guaranteed CSA price corresponding to approximately RUB 7,000–9,000 per MWh for a period of 15 years. In October 2017 and October 2018, the wind investment fund made investment decisions on a 50-MW and a 200-MW wind farm, respectively.

The Russian annual average gas price growth was 3.1% in 2018. Fortum estimates the Russian annual average gas price growth to be 3% in 2019.

Other Operations

For information on the financial impact of the Uniper shareholding, please see the Uniper investment section of [Note 3](#).

In December 2018, Fortum won the right from Gujarat Urja Vikas Nigam Ltd. to build a 250-MW solar power plant in Raghnesda solar park in District Banaskhata, Gujarat, India. In January 2019, the Government of Gujarat cancelled the result of the auction on the grounds that it considers the winning tariffs to be too high. The Government of Gujarat has indicated that there will be a new auction, for which they intend to reduce the solar park charges to operators, in order to lower the costs for the bidders and enable lower bids.

In June 2018, Fortum won the right to build a 250-MW solar power plant in the Pavagada solar park in Karnataka, India. The capital expenditure is estimated to be approximately EUR 120 million, and the solar park will be entitled to a fixed tariff of 2.85 INR/kWh for 25 years. Commissioning of the plant is expected in 2019.

Income taxation

In 2019, the effective corporate income tax rate for Fortum is estimated to be 19–21%, excluding the impact of the share of profits of associated companies and joint ventures, non-taxable capital gains, as well as tax rate changes.

Fortum has received income tax assessments in Sweden for the years 2013, 2014, and 2015 concerning the loans given by Fortum's Dutch financing company to Fortum's subsidiaries in Sweden. The interest income for these loans was taxed in the Netherlands. After Fortum received a negative decision from the Administrative Court in Stockholm in 2017, Fortum filed an appeal to the Administrative Court of Appeal in Stockholm. In October 2018, the Administrative Court of Appeal in Stockholm, Sweden, announced its decision relating to the income tax assessment for the year 2013. The decision was favourable to Fortum. The Administrative Court of Appeal confirmed that Fortum had sufficient business reasons for the loans and accepted Fortum's appeal. The decision regarding the year 2013 is final. The Administrative Court in Stockholm announced its decisions in the cases for 2014 and 2015 in November 2018. Also these decisions were favourable to Fortum. The decisions became non-appealable by the end of January 2019. Fortum had not made provisions for the cases regarding the years 2013–2015, as Fortum considers the additional tax unjustified. Therefore, the

favourable decisions issued by the Administrative Court of Appeal in October 2018 and by the Administrative Court in November 2018 did not have any impact on profits. The amount of additional tax claimed by the Swedish tax authority was originally SEK 273 million (EUR 26 million) for the year 2013, SEK 282 million (EUR 27 million) for the year 2014, and SEK 200 million (EUR 19 million) for the year 2015. The additional tax cost for 2013 was paid in 2017 and was refunded to Fortum in 2018. Additional taxes and interest for the years 2014 and 2015 had not been paid by Fortum.

In June 2018, the Swedish government decided to lower the Swedish corporate tax in two steps, from the current 22.0% to 21.4% from January 2019 and to 20.6% from January 2021.

In March 2018, the Swedish Supreme Administrative Court decided not to grant leave to appeal to Fortum with respect to the interest deduction cases relating to the years 2009–2012. The unfavourable decision of the Administrative Court of Appeal from June 2017 therefore remains in force. The additional tax and interest, in total SEK 1,175 million (EUR 122 million), was paid in 2016 and booked as a cost in the 2017 results. There are strong grounds to argue that these decisions of the Administrative Court of Appeal and the Supreme Administrative Court violate EU law and fundamental rights under EU law. On these grounds, Fortum filed a summons application in December 2018 to the District Court of Stockholm in which damages are claimed from the Swedish state in these cases. Fortum also filed a request to initiate a mutual agreement procedure between Sweden and the Netherlands for the year 2012 (► [Note 37](#)).

Sustainability

Sustainability approach

Fortum strives for balanced management of economic, social and environmental responsibility in the company's operations, emphasising the following focus areas:

Economic responsibility	Social responsibility	Environmental responsibility
Economic benefits to stakeholders	Operational and occupational safety	Energy and resource efficiency
Long-term value and growth	Secure energy supply for customers	Reduction of environmental impacts
Sustainable supply chain	Personnel wellbeing	Climate-benign energy production and systems
Customer satisfaction	Business ethics and compliance	Solutions for sustainable cities

The Group-level sustainability targets are linked to the main sustainability focus areas and emphasise Fortum's role in society. They measure not only environmental and safety targets, but also Fortum's reputation, customer satisfaction, employee wellbeing, and the security of power and heat production. Targets are set annually and are based on continuous operational improvement.

The achievement of the sustainability targets is monitored in monthly, quarterly and annual reporting. Fortum publishes a yearly Sustainability Report with additional information on the company's sustainability performance.

Group sustainability targets and performance 2018

	Target	2018	2017
Economic responsibility			
Reputation index, based on One Fortum Survey	73.0	72.5	72.3
Customer satisfaction index (CSI), based on One Fortum Survey	70–74	63–83	64–76
Net Promoter Score (NPS) in Consumer Solutions division	-6	-18	-
Environmental responsibility			
Specific CO ₂ emissions from total energy production as a five-year average, g/kWh	<200	186	188
Energy-efficiency improvement by 2020, base-line 2012, GWh/a	>1,900	1,637	1,502
Major EHS incidents, no.	≤20	18	20
Social responsibility			
Energy availability of CHP plants, %	>95.0	96.4	96.1
Lost workday injury frequency (LWIF), own personnel and contractors	≤2.1	1.8	2.4
Severe occupational accidents, no.	0	4	1
Quality of investigation process of occupational accidents, major EHS incidents and near misses	Level 3.0	Level 3.0	Level 2.0 *
GAP index, implementation of EHS minimum requirements	Level 3.0	Level 2.0	-
Sickness-related absences, %	≤2.2	2.8	2.2 **

* Scaling revised

** Excluding DUON and Hafslund

Fortum is listed on the Nasdaq Helsinki exchange and is included in the STOXX Global ESG Leaders, OMX Sustainability Finland, ECPI®, Euronext Vigeo Eurozone 120, Euronext Vigeo Europe 120, MSCI ESG Ratings, and Equileap Gender Equality indices. Fortum is also ranked in category B in the annual CDP Climate Change rating 2018, and it has received a Prime Status (B-) rating by ISS-oekom Corporate Rating.

Fortum's sustainability reporting covers all functions under Fortum's operational control, including subsidiaries in all countries of operation. The figures for power and heat generation, capacities and investments include also figures from Fortum's share in associated companies and joint ventures that sell their production to the owners at cost.

In the Financial Statements, Uniper is treated as an associated company and Stockholm Exergi as a joint venture, and both companies are consolidated with the equity method. Stockholm Exergi and Uniper are not included in Fortum's sustainability targets and indicators nor in the descriptions of management practices. Stockholm Exergi's and Uniper's sustainability information are available in the companies' sustainability reports that can be found on the companies' own web pages. The Meri-Pori power plant is included fully in Fortum's sustainability figures, as Fortum holds the environmental permit.

Sustainability risks

Fortum's operations are exposed to risks, which if materialised can have adverse effects on the environment and on the safety and security of employees, contractors and neighbouring societies. Key sustainability risks are presented in the Risk management section in the Operating and financial review. Climate change and the need for decarbonisation and resource efficiency are changing the energy industry in a profound way, and these changes also create new business opportunities for Fortum.

Sustainability governance and policies

Sustainability management at Fortum is strategy-driven and is based on the company's Values, the Code of Conduct, the Supplier Code of Conduct, the Sustainability Policy and other Group policies and their specifying instructions. As sustainability is an integral part of Fortum's strategy, the highest decision making for these issues falls within the duties of the Board of Directors, who share joint responsibility on sustainability matters.

Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. Fortum's line management is responsible for the implementation of the Group's policies and instructions and for day-to-day sustainability management. Realisation of the safety targets is a part of Fortum's short-term incentive system.

Fortum is a participant of the UN Global Compact initiative and the UN Caring for Climate initiative. Fortum respects and supports the International Bill of Human Rights, the United Nations Convention on the Rights of the Child, and the core conventions of the International Labour Organisation (ILO). Additionally, Fortum recognises in its operations the UN Guiding Principles on Business and Human Rights, the statutes of the OECD Guidelines for Multinational Enterprises, the International Chamber of Commerce's anti-bribery and anti-corruption guidelines, and the Bettercoal initiative's Code on responsible coal mining.

Business ethics

The Fortum Code of Conduct and Fortum Supplier Code of Conduct define how we treat others, engage in business, safeguard corporate assets, and how Fortum expects suppliers and business partners to operate. Fortum's Board of Directors is responsible for the company's mission and values and has approved the Fortum Code of Conduct. Fortum has zero tolerance for corruption and fraud and does not award donations to political parties or political activities, religious organisations, authorities, municipalities or local administrations.

In addition to internal reporting channels, Fortum employees and partners can report suspicions of misconduct confidentially to Fortum's Head of Internal Audit via the "raise-a-concern channel" on Fortum's internal and external web pages.

Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly reported to the Audit and Risk Committee.

No cases of suspected corruption or bribery related to Fortum's operations were reported in 2018.

Fortum's main internal policies and instructions guiding sustainability

	Economic responsibility	Environmental responsibility	Social responsibility		
			Social and employee matters	Human rights	Anti-corruption and bribery
Values	x	x	x	x	x
Code of Conduct	x	x	x	x	x
Supplier Code of Conduct	x	x	x	x	x
Disclosure Policy	x		x		
Group Risk Policy	x	x	x	x	x
Sustainability Policy (including environmental, and health and safety policies)	x	x	x	x	x
Minimum Requirements for EHS Management		x	x	x	
Biodiversity Manual		x			
Group Manual for Sustainability Assessment		x	x	x	x
Human Resources Policy			x	x	
Leadership Principles			x	x	
Accounting Manual	x	x	x		
Investment Manual	x	x	x		x
Group Instructions for Anti-Bribery	x		x		x
Group Instructions for Safeguarding Assets	x		x		x
Group Instructions for Conflicts of Interest	x		x		x
Anti-Money-Laundering Manual	x		x		x
Compliance Guidelines for Competition Law	x		x		x
Security Guidelines		x	x	x	
Policy for Sponsoring and Donations	x		x	x	x
Group Instructions for Compliance Management	x	x	x	x	x

Economic responsibility

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 (long-term target: at least 10%) and capital structure (long-term target: comparable net debt/EBITDA around 2.5x).

Fortum is a significant economic actor in its operating countries. The most significant direct monetary flows of Fortum's operations come from revenue from customers, procurements of goods and services from suppliers, compensation to lenders, dividends to shareholders, growth and maintenance investments, employee wages and salaries, and taxes paid. In 2018, investments in CO₂-free production were EUR 278 (375) million. Investments were a total of EUR 180 (291) million in hydro, wind and solar power and bioenergy.

Fortum supports social development and wellbeing in its operating countries by e.g. paying taxes. The tax benefits Fortum produces to society include not only corporate income taxes, but also several other taxes. In 2018, Fortum's taxes borne were EUR 299 (445) million. Fortum publishes its tax footprint annually.

Targets for reputation and customer satisfaction are monitored annually. In the One Fortum Survey in 2018, company reputation among key stakeholder groups was 72.5 (72.3) points, which did not meet the target of 73.0 points.

The Group-level target (70–74 points, on a scale of 0–100) for customer satisfaction was achieved among all business areas with two exceptions: retail electricity sales to major customers and EV charging solutions for consumers and businesses. The Consumer Solutions division also used the Net Promoter Score (NPS) method to measure the satisfaction of electricity sales customers; the score was -18, which did not meet the target of -6.

Fortum's total purchasing volume in 2018 was EUR 3.7 (3.2) billion and Fortum had about 14,000 suppliers of goods and services. 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 2018, Fortum conducted a total of 13 (11) supplier audits in Finland, Lithuania, Poland, Netherlands, Russia, Vietnam, and India. Most of the non-compliances identified in the audits in 2018 were related to occupational safety, working hours and remuneration. In addition, two of Fortum's Russian coal suppliers were audited against the Bettercoal Code by a third party.

Environmental responsibility

Fortum's Group-level environmental targets are related to CO₂ emissions, energy efficiency, and major environmental, health and safety (EHS) incidents.

The Group Sustainability Policy together with the Minimum Requirements for EHS Management steer Fortum's environmental management. Investments, acquisitions and divestments are assessed based on the sustainability assessment criteria defined in the Group's Investment Manual. Operational-level activities follow the requirements set forth in the ISO 14001 environmental management standard, and 99.9% (99.8%) of Fortum's power and heat production worldwide has ISO 14001 certification.

Circular economy

Fortum's aim is to promote resource efficiency improvements and the transition towards a more extensive circular economy. Resource efficiency and maximising the added value of waste and biomass are key priorities in the environmental approach, as defined in the Group Sustainability Policy.

In 2018, Fortum received a total of 1.6 million tonnes of non-hazardous waste and about 600,000 tonnes of hazardous waste from customers. As much of the waste stream as possible is recycled, recovered or reused. Waste that is unsuitable for recycling or reuse as a material is incinerated in Fortum's waste-to-energy plants in the Nordic countries and Lithuania.

Sustainable energy production

Fortum's energy production is primarily based on carbon dioxide-free hydropower and nuclear power and on energy-efficient combined heat

and power (CHP). In line with the strategy, Fortum is targeting a multi-gigawatt solar and wind portfolio.

In 2018, Fortum's power generation was 74.6 (73.2) TWh and heat production 29.8 (28.6) TWh. 57% (61%) of the total power generation was CO₂-free. In the EU area, 96% (96%) of the power generation was CO₂-free.

The main fuels that Fortum uses to produce electricity and heat are natural gas, nuclear fuel, coal, waste-derived fuels and biomass fuels. The most significant fuel was natural gas, which accounted for 63% (62%) of the total fuel consumption. The next highest fuel use was uranium 21% (21%). Coal accounted for 8% (10%) of the total fuel use, and waste-derived fuels and biomass fuels 4% (3%) and 3% (3%), respectively. Russia accounted for 98% of the use of natural gas and 56% of the use of coal.

Climate change mitigation

Fortum expects the concern about climate change to increase the demand for low-carbon production and energy-efficient solutions and products. Fortum aims to mitigate climate change by investing in CO₂-free energy production and by improving energy and resource efficiency. Fortum is also adapting its operations to climate change in production planning and in the assessment of growth projects and investments.

In 2018, Fortum's direct CO₂ emissions were 20.1 (18.4) Mt. 84% of CO₂ emissions originated from Russian power plants. Direct CO₂ emissions increased due to the increase in power production in Russia. Of the total CO₂ emissions, 2.5 (2.4) Mt were within the EU's emissions trading scheme (ETS). The estimate for Fortum's free emission allowances is 0.8 (1.0) Mt.

Fortum's direct CO₂ emissions

Fortum's total CO ₂ emissions (million tonnes, Mt)	2018	2017	2016
Total emissions	20.1	18.4 *	18.6
Emissions subject to ETS	2.5	2.4 *	2.7
Free emissions allowances	0.8	1.0	1.0
Emissions in Russia	16.9	15.4	15.5

* The figure has been revised from the one presented in the Financial Statements bulletin 2017, Financials 2017 and Sustainability 2017.

In 2018, Fortum's specific carbon dioxide emissions from total energy production were 192 (184) g/kWh. The specific CO₂ emissions from total energy production as a five-year average were 186 (188) g/kWh, which is better than Fortum's Group target of 200 g/kWh.

Fortum has a Group-level target to achieve annual energy-efficiency improvements of more than 1,900 GWh by 2020 compared to 2012. Fortum achieved 1,637 GWh/a by the end of 2018.

Decreasing environmental impact

Emissions into air

Fortum's activities cause various emissions to air. In addition to carbon dioxide (CO₂) emissions, these include flue-gas emissions, such as sulphur dioxide (SO₂), nitrogen oxide (NO_x) and particle emissions. All power plants operate in compliance with their air emission limits.

Fortum's flue-gas emissions into air

Fortum's flue-gas emissions into air (1,000 tonnes)	2018	2017	2016
Sulphur dioxide emissions	16.8	18.8	22.5
Nitrogen oxide emissions	26.1	26.4 *	24.9 *
Particle emissions	9.6	15.8	16.8

* Figure revised

Water withdrawal

Fortum uses large volumes of water at various types of power plants and in district heat networks. In most cases, power plants do not consume water – the water is discharged back to the same water system from where it was withdrawn. Fortum withdrew a total of 2,100 (2,100) million m³ of water in power and heat production; 94% of this amount was used as cooling water.

Radioactive waste

In 2018, 20.3 (23.4) tonnes of spent nuclear fuel was removed from Loviisa power plant's reactors in Finland. High-level radioactive spent fuel is stored in an interim storage at the Loviisa power plant site. The

final disposal of the high-level radioactive waste is scheduled to begin at Olkiluoto in Eurajoki in the 2020s.

Biodiversity

Fortum's main impacts on biodiversity are related to hydropower production. Fuel procurement and flue-gas emissions may also have a negative impact on biodiversity. On the other hand, increasing CO₂-free production mitigates the biodiversity loss caused by climate change. Fortum's Biodiversity Manual, revised in 2017, and the first Biodiversity Action Plan, published in 2018, define the company's approach in biodiversity management.

Environmental incidents

Fortum's target regarding major EHS incidents is to have no more than 20 major EHS incidents annually. Major EHS incidents are monitored, reported and investigated, and corrective actions are implemented. In 2018, there were 18 (20) major EHS incidents in Fortum's operations. The major EHS incidents included 11 fires, two environmental non-compliances, four leaks, and one dam safety incident. The growth in circular economy services increases the risk of EHS incidents and especially the risk of fires. The major EHS incidents did not have significant environmental impacts.

Social responsibility

Fortum's social responsibility targets are related to the secure supply of electricity and heat for customers, operational and occupational safety, as well as employee wellbeing.

Employees

The Group Human Resources Policy is based on the company's Values, Leadership Principles and Code of Conduct. The HR Policy guides the daily work in the company, and the implementation of the policy is followed up regularly through the employee engagement survey, the annual performance and development discussions, as well as other feedback practices.

Fortum's operations are mainly based in the Nordic countries, Russia, Poland and the Baltic Rim area. The total number of employees at the end of 2018 was 8,286 (8,785).

Group employee statistics

	2018	2017	2016
Number of employees, 31 December	8,286	8,785	8,108
Average number of employees	8,767	8,507	7,994
Total amount of employee benefits, EUR million	459	423	334
Departure turnover, %	16.1	10.5	13.0
Permanent employees, %	95.9	95.2	96.1
Full-time employees, % (of permanent employees)	98.2	98.1	98.5
Female employees, %	32	32	29
Females in management, %	30	29	25

Occupational safety

For Fortum, excellence in safety is the foundation of the company's business and an absolute prerequisite for efficient and interruption-free production. Fortum strives to be a safe workplace for the employees, contractors and service providers who work for the company. The Group Sustainability Policy, the Minimum Requirements for EHS Management and more detailed Group-level EHS manuals steer the work. A certified OHSAS 18001 or ISO 45001 safety management system covers 97.0% (98.4%) of Fortum's power and heat production worldwide.

In 2018, the combined lost-workday injury frequency (LWIF) for own personnel and contractors was 1.8 (2.4), which was better than the set target level (≤ 2.1). Unfortunately, 4 (1) severe occupational accidents took place in the company's operations in 2018; one in Sweden, one in Lithuania and two in Russia. The severe accident in Sweden and in Lithuania resulted in the fatality of a contractor employee. The Group target in 2018 was zero severe occupational accidents.

Fortum continues its efforts to improve contractor safety. In 2018, the company implemented tools to assess contractor safety performance as part of the supplier qualification process and also evaluated their safety practices in a more systematic manner during work. For 2019, Fortum has defined a new Group target: Contractor safety improvement index, focusing on identified actions that are based on the Group's

requirements for contractor management to enhance safety (target level 2.0).

In 2018, the quality of investigation process of occupational accidents, major EHS incidents, and serious near misses was at the level of 3.0, achieving the set target level (3.0). The GAP index, describing the implementation of the Group's EHS minimum requirements at the power plant level, was at the level 2.0, which did not meet the set target level (3.0). The most significant deviations were detected in companies that Fortum has acquired in recent years and in the sites operated by contractors.

Fortum introduced a safety training programme, provided by an external safety service provider, for both the management level and key individuals leading safety and procurement work as well as the most challenging business areas. Special attention was paid to the prevention of unsafe behaviour, problem solving, the provision of positive feedback, and the establishment of a safety leadership team.

Open leadership, personnel development and wellbeing

In 2018, more than 800 supervisors participated in the Strategy & Open Leadership events that focused on strategy communications and more in-depth open leadership. Additionally, training programmes on the circular economy, the utilisation of data, communication skills, wellbeing and stress management were arranged during the year for management, supervisors and experts.

Fortum's goal of workplace wellbeing activities is to promote the health and occupational safety of employees and the functionality of the work community. In 2018, the Energise Your Day wellbeing programme was expanded to Fortum Recycling and Waste Solutions' sites in Finland, Sweden and Denmark, and is now under way in ten operating countries.

In 2018, the percentage of sickness-related absences was 2.8 (2.2), which did not meet the target level of ≤2.2.

Respect for human rights

Fortum's goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights and to apply these principles in company's own operations as well as in country and partner risk assessments and supplier audits.

A sustainability assessment, including a human rights evaluation, is carried out for investment projects – especially in new operating areas – and also for new countries where Fortum plans to expand the sales of products and services. In 2018, seven (15) of these assessments were made.

In 2018, there were no grievances related to human rights filed through Fortum's formal grievance channels, nor were there any grievances carried over from the previous year.

Society

An uninterrupted and reliable energy supply is critical for society to function. With planned preventive maintenance and condition monitoring, Fortum ensures that the power plants operate reliably to produce the electricity and heat customers need. The energy availability of the company's CHP plants in 2018 was, on average, 96.4% (96.1%), outperforming the target of >95.0%.

Fortum's operations impact the local communities where the power plants are located, and the company engages in many kinds of collaboration with local stakeholders. According to Fortum's Policy for Sponsoring and Donations, the company's sponsoring focuses on the wellbeing of children and youth, renewable energy projects, R&D and innovations supporting Fortum's strategy, recycling, recovery and reuse. Fortum also engages in collaboration with universities through different research and development projects. In 2018, Fortum's support for activities promoting the common good totalled about EUR 3.8 (4.9) million. In addition, the grants awarded by Fortum Foundation, not part of Fortum Group, were about EUR 680,000 (696,000).

Risk management

Risk management framework and objectives

Fortum's Risk Management framework is described in 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 systems are 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, 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.

Risk management organisation

The main principle is that risks are managed at source meaning that each Division 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 currency, interest rate, liquidity and refinancing risks and cyber and information security risks 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 Group Risk Policy and 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

Corporate Risk Policy Structure

Approving body

Board of Directors

President and CEO

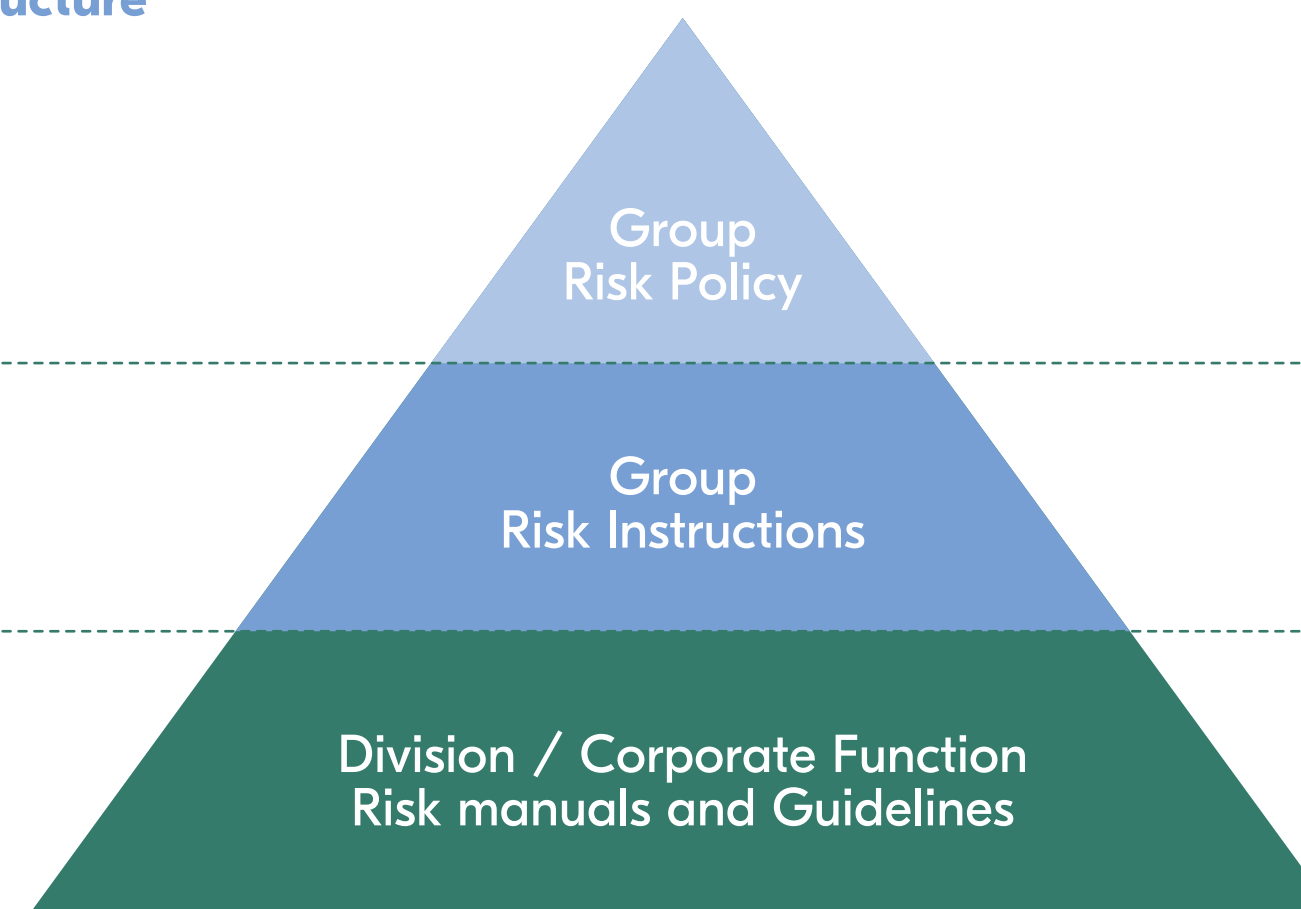
Division / Corporate Function Head

Reviewing Body

Audit and Risk Committee

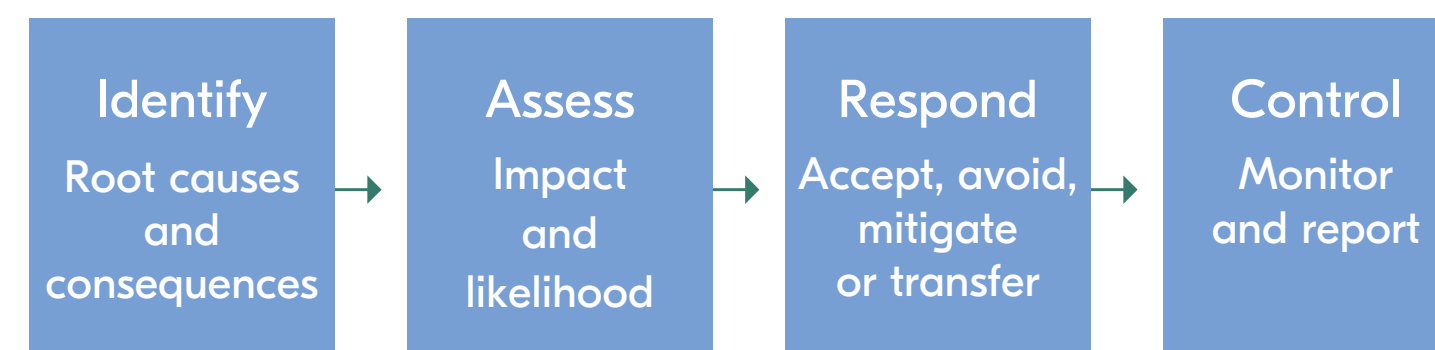
CFO

CRO



process. Corporate Risk Management is responsible for assessing and reporting maturity of risk management in Divisions and Corporate Functions and for providing independent monitoring and reporting of material risk exposures to Group Management, the ARC and the Board of Directors. Risk control functions and controllers in the business monitor and report risks to the CRO.

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 regularly 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 not only in monetary terms, but also in terms of health and safety, environment and reputation. All risks have risk owners who are responsible for implementing actions to respond to the risk. Risk responses can be to accept, avoid, mitigate or transfer 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 approves the Group Risk Policy and the CEO approves Group Risk Instructions covering commodity market risks, counterparty credit risks, and operational risks. Fortum also has other Group policies and instructions covering e.g. compliance, privacy, sustainability, treasury and cyber and information security risks which are aligned with the Group Risk Policy. There are risk mandates or limits defined for commodity market risks, counterparty credit risks and financial risks. Divisions and Corporate Functions issues risk manuals and guidelines as needed which detail how the Group Risk Instructions are implemented.

Risk factors

Strategic risks

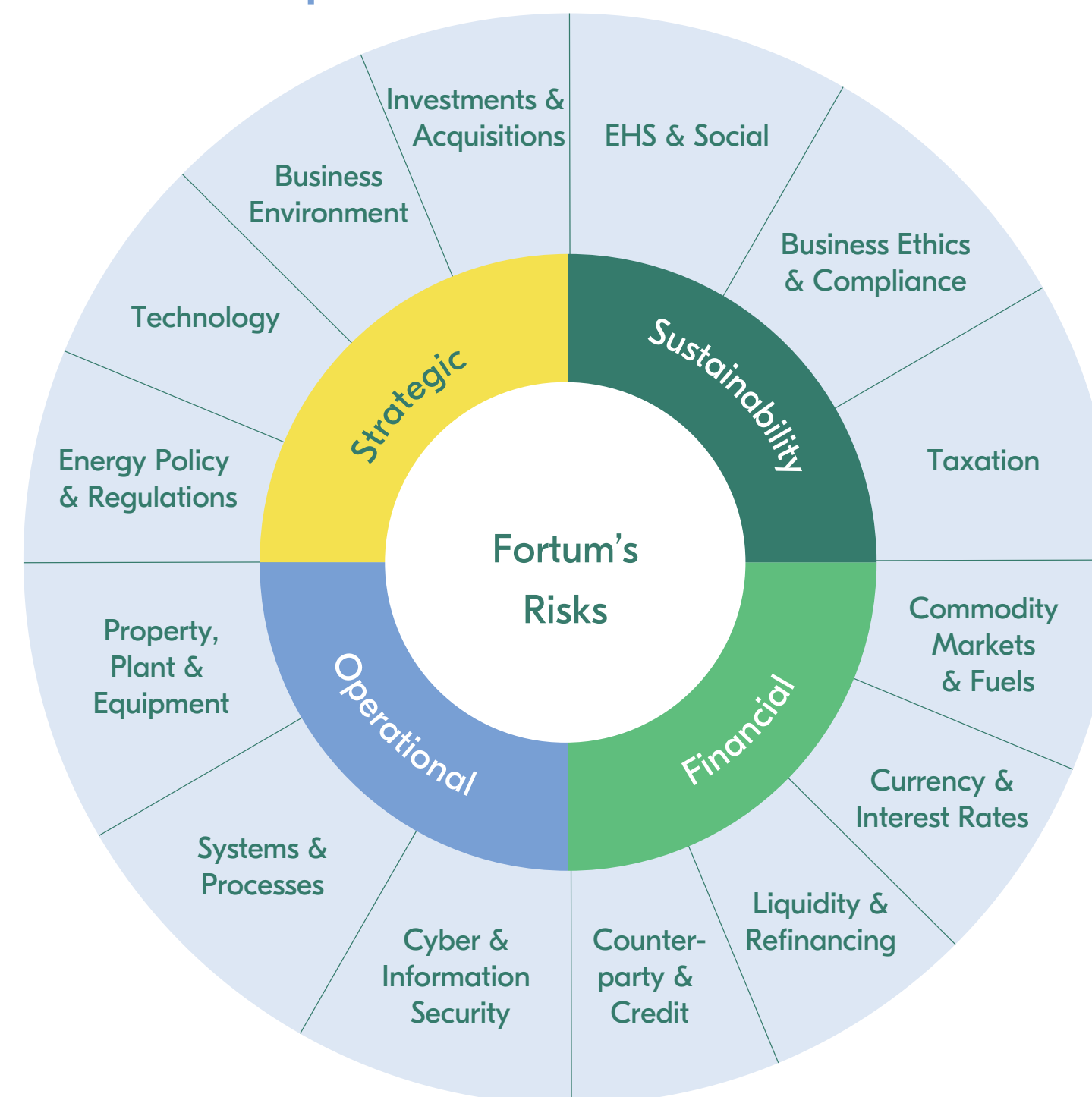
The main strategic risks are that energy policy, regulation, technology or the business environment develop in ways that we have not been able to foresee and prepare for. Future energy market and regulation scenarios, including the impact of these to Fortum's business, are continuously assessed and analysed. It is part of Fortum's strategy to, in the long-term, broaden the base of revenues and diversify into new businesses, technologies and markets.

Risks which could hinder Fortum in executing its strategy are continuously assessed, monitored and reported as part of the strategy work. These risks include an inability to identify and carry out successful investments and acquisitions with the related project and integration risks.

Business Environment

Fortum operates in a global business environment and is therefore exposed to political and other risks which affect the macroeconomic development and consumer behaviour in the markets where we operate. As we increase operations to new geographical regions, this risk may also increase. The current trend of increasingly nationalistic policies and protectionism may lead to increased trade restrictions which in turn could affect demand for our products and services. Fortum monitors the development in order to react quickly to market shifts and changes in consumer behaviour.

Fortum Risk Map



Investment and acquisition risks

Fortum's strategy includes growth of operations in new businesses, technologies and geographies. This includes an increasing number of associated companies and joint ventures where we do not exercise control, including the Uniper investment and a joint-venture with Rusnano for wind development in Russia. These recent investments as well as any future investment or acquisition, including possible future partnerships, entail risk such as:

- 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 manage complex integrations of companies with different culture and infrastructure,
- the need to understand and manage new markets with different cultural, ethical and legal frameworks,
- the need to understand and manage risks related to sustainability and safety issues related to new businesses, markets and technologies.

These risks are managed as part of the investment process which includes requirements for risk identification and assessment and action plans before investment decisions are made, and also sets requirements to follow-up risks in projects and acquisitions. Risks in large projects are mitigated through contract structures and insurance coverage. Partner risk assessments are performed before entering into joint ventures or other material partnership agreements, and there is also a country entry process which includes a country risk assessment before decisions to enter into a new market can be made.

Energy policy and regulation risks

The energy business is heavily influenced by national and EU-level 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 regulatory

changes in Fortum's various operating countries pose a risk if we are not able to anticipate, identify and manage those changes 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 contribute to the development of the energy policy and regulatory framework.

Nordic/EU

Fortum's strategy in the power and heat sectors is based on a market-driven development, which would mean more interconnections and competition supported by increasing policy harmonization. Even if the Nordic power market has a long tradition of harmonization, national policies vary considerably when it comes to e.g. taxation, permitting, subsidies and market model meaning that we have to manage risks related to both EU regulation and national regulation. Potential risks related to the future energy and climate policy framework include;

- Increasing policy costs and uncoordinated national mechanisms delaying the development towards an integrated, flexible and dynamic power market,
- Overlapping national carbon policies diluting the EU ETS and carbon price despite the ETS reform,
- Increasing cost burden for hydro power in Finland, driven by fish obligations, grid costs and real estate taxation and unbalanced implementation of the EU Water Framework directive in Sweden leading to lower production volumes,
- Stricter sustainability requirements for forest biomass leading to reduced availability and increasing costs,
- Implementation of national waste incineration taxes or restrictive measures affecting the operational environment or the competitiveness of the waste-to-energy business as part of overall recycling promotion,
- Substantial retroactive changes and/or discontinuation of prevailing CHP support schemes in Baltic countries and Poland or deteriorating competitiveness of CHP due to fuel tax increases,
- Undue heavy-touch price-regulation of district heating in order to enhance the affordability and other social aspects of protecting the

end-customers which could be driven by an increase of national or local political steering in this sector,

- Introduction of a national plastic tax aiming to reduce the use of plastics,
- Emergence of windfall tax discussions following possible increasing electricity and carbon price development.

The inter-linkage of these issues create uncertainty as changes in policies in one area could undermine the effects of policy changes in other areas.

Russia

Our business in 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 energy 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. Regulated sectors are inherently exposed to a risk of regulatory changes which could affect Fortum's operations.

Technology risks

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

Sustainability risks

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 and the same applies to changes in views of our main stakeholders. In order to identify 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 on how to conduct business. Divisions and Corporate Functions identify and assess sustainability risks related to their operations and define mitigation measures annually. Corporate Sustainability executes oversight as part of the Group's risk management process.

Environmental, health and safety and social risks

Operating power and heat generation plants, circular economy services and waste management involves use, storage and transportation of fuels and materials, including hazardous waste, that can have adverse effects on the environment and expose personnel, contractors and third parties to safety risks. Assessment of environmental risks and preparedness to operate in exceptional and emergency situations follows legislative requirements as well as the requirements in the environmental management standard (ISO 14001). The same approach, based on the requirements in the operational health and safety standard (OHSAS 18001 or ISO 45001), 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 including partner and country risk assessment. Corrective and preventive actions are implemented when necessary. EHS and social risks related to investments are evaluated in accordance with Fortum's Investment manual. Environmental risks and liabilities in relation to past actions

have been assessed and provisions have been made for future remedial costs.

Fortum's operations are exposed to physical risks caused by climate change, including changes in weather patterns that could alter energy demand and, for instance, hydropower production volumes. Changes in precipitation and temperatures may affect hydropower production, dam safety, and also bioenergy supply and availability. Fortum adapts its operations to the changing climate and takes it into consideration, for example, in production and maintenance planning and in evaluating growth and investment projects.

Tax risk

Fortum operates in a number of countries and is therefore exposed to changes in taxation and how tax authorities interpret tax laws. Political pressure has resulted in numerous new laws and rules which have created a tax environment that is leading to new or increased taxes and new interpretations of existing tax laws. Clarity and predictability around how our operations are taxed have decreased due to the changing regulation. In addition, new regulation creates material volume of new complex compliance work.

Fortum aims to identify simple and cost-efficient solutions to manage taxes in a sustainable manner. Fortum's tax principle is that tax is a consequence of business and that compliance with tax rules and legislation and transparency result in a correct tax contribution. This principle leaves no room for artificial or other aggressive solutions. 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 openly both internally and externally and 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's Code of Conduct enhances the understanding of the importance of business ethics for all Fortum employees, contractors and partners. Prevention of corruption is one of the Code of Conduct's focus areas. Fortum has procedures for anti-corruption including prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. Fortum's supplier code of conduct sets sustainability requirements for suppliers of goods and services. The Supplier Code of Conduct is based on the principles of the United Nations Global Compact and is divided into four sections: business principles including anti-corruption, human rights, labour standards and environment.

Fortum systematically identifies, assesses, mitigates and reports compliance risks including risks related to business ethics. Internal controls are implemented to prevent the possibilities of unauthorised activities or non-compliance with Group policies and instructions. Fortum's rolling compliance programme includes a risk-based prioritisation of the development and mitigating actions. Training and communications plays a central role in increasing the awareness in the organisation.

Financial risks

Commodity market and fuel risks

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 approved Hedging Guidelines and Mandates. For further information on hedge ratios, exposures, sensitivities and outstanding derivatives contracts, see ▶ **Note 4** Financial risk management.

Electricity price and volume risks

In competitive electricity markets, such as the Nordpool spot market exchange in the Nordic region, the wholesale price of electricity 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, wind, CO₂ allowance prices, fuel prices, economic development, transmission capacity and the import/export situation.

Electricity price risks are mainly hedged by entering into electricity derivatives contracts on the Nasdaq Commodities exchange. The ability to implement hedging strategies is dependent on a well-functioning and liquid derivatives market. There is a risk of decreasing liquidity on the Nasdaq Commodities exchange, and alternatives including use of OTC derivative contracts and proxy products traded on other exchanges are used to mitigate this risk. Hedging strategies are continuously evaluated as electricity and other commodity market prices, the hydrological balance and other relevant parameters change. Hedging of the Generation segment's power sales is performed in EUR on a Nordic level covering both Finland and Sweden, and the currency component of these hedges in the Swedish entity is currently not hedged. In Russia, electricity prices and capacity sales are the main sources of market risk. The electricity price is highly correlated with the gas price. Exposure is partly mitigated through regulated fixed-price bilateral agreements, but the majority of electricity sales is exposed to spot price risk. 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 an emissions trading scheme to reduce the amount of CO₂ 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 factors influencing the prices of CO₂ allowances and other environmental values are political decisions and the supply and demand

balance. Fortum hedges its exposure to these prices and volumes through the use of CO₂ futures 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, there are also risks related to imported fuels from Russia.

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. 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

Fortum's business is capital intensive and there is a regular need to raise financing. Fortum maintains a diversified financing structure in terms of debt maturity profile, debt instruments and geographical markets. Liquidity and refinancing risks are managed through a combination of cash positions and committed credit facility agreements with its core banks. The credit risk of cash positions has been mitigated by diversifying the deposits to high-credit quality financial institutions and issuers of corporate debt.

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 material transaction exposures should be hedged while translation exposures are not hedged, or are hedged selectively. An exception is the Generation segment's hedging of power sales in Sweden where the currency component is currently not hedged. The main translation exposures toward the EUR/RUB, EUR/SEK and EUR/NOK are monitored continuously. Changes in these currency rates affect Fortum's profit level and equity when translating results and net assets to euros.

Counterparty & credit risks

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

Credit risk exposures relating to financial derivative instruments are often volatile. The majority of commodity derivatives are exchange-traded and cleared through clearing houses such as Nasdaq Clearing AB or through clearing banks. The recent default of a trader active on Nasdaq Commodities has shown that there is also credit risk toward clearing houses. The trend toward more use of futures contracts instead of forward contracts is decreasing the credit exposure toward clearing houses. Derivatives contracts are also entered into directly with external counterparties and 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. The majority of the exposure is toward Fortum's key relationship banks, which are highly creditworthy institutions, but also 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.

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 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 unexpected events which can lead to negative monetary, safety, environmental or reputational impacts as a result of inadequate or failed internal processes, systems or equipment, or from external events.

Systems and Process Risks

System and process risks are mainly caused by design failures or human errors. Mitigation includes process automation, testing and education. Process-related risks are assessed and controls for the most relevant risks are defined and implemented as part of the internal controls framework. IT-system risk management is based on an IT Service Lifecycle Model, and related processes and practices. ITIL and CobIT are the main frameworks which have been used as reference for the model. Business continuity plans are created for most critical processes.

Property, plant and equipment

Property, plant and equipment risks are primarily managed through monitoring and maintenance planning. In addition, all Fortum's industrial assets are covered by a Group Master Policy covering property damage and business interruption risks which mitigates the impact of internal and external events.

Combined heat and power (CHP) and recycling and waste

Operational events at CHP and recycling and waste facilities, or in the storage and transportation of fuels, waste and materials can lead to physical damages, business interruption, and environment, health and safety and social impacts. Leakage and contamination of the surrounding environment could lead to clean-up costs and third-party liabilities. An explosion or fire at a facility could cause damages to the plant or third-parties and lead to possible business interruption. Requirements for waste are clearly specified and samples are tested for selected incoming waste deliveries. 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 600M SDR (Special Drawing Right) and the same type of insurance policies are in place for the operators where Fortum has a minority interest.

Wind and Solar

Fortum is involved in the construction, development and operations of several wind and solar projects in the Nordics, Russia and in India. Operational incidents during both construction and operational phases can lead to accidents, delays in commissioning and business interruption. These risks are mitigated as part of the project planning and through maintenance and continuous training of personnel operating the plants.

Cyber and information security risks

Fortum's business operations and customer related services 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, serving customers and in internal and external communication and reporting. Securing information and availability of the systems are essential for Fortum. Cyber security risks, including risks related to information, industrial control systems (ICS), digitalization and privacy, are managed centrally by Corporate Security in collaboration with business. Group instructions and procedures set requirements for managing and mitigating cyber security risks.

General Data Protection Regulation became applicable on 25th of May 2018. The regulation contains a number of requirements related to processing personal data. Fortum established a Group-wide program to ensure the fulfilment of the requirements. The program was to a large extent implemented during 2018 and the future work continues

under the guidance of the Data Privacy Office and in accordance with the Group Instructions for Privacy.

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.

Fortum share and shareholders

Fortum Corporation's shares have been listed on Nasdaq Helsinki since 18 December 1998. The trading code is FORTUM (until 25 January 2017: FUM1V). Fortum Corporation's shares are in the Finnish book entry system maintained by Euroclear Finland Ltd which also maintains the official share register of Fortum Corporation.

Share key figures

EUR	2018	2017	2016
Earnings per share	0.95	0.98	0.56
Cash flow per share	0.91	1.12	0.7
Equity per share	13.33	14.69	15.15
Dividend per share	1.10 ¹⁾	1.10	1.10
Payout ratio, %	115.8 ¹⁾	112.2	196.4
Dividend yield, %	5.8 ¹⁾	6.7	7.5

1) Board of Directors' proposal for the Annual General Meeting 26 March 2019.

For full set of share Key figures 2009–2018, see the section Key figures in the Financial Statements.

Shareholders value, share price performance and volumes

Fortum's mission is to deliver excellent value to its shareholders. Fortum's share price has appreciated approximately 17% during the last five years, while Dow Jones European Utility Index has increased 3%. During the same period Nasdaq Helsinki Cap index has increased 27%. During 2018, Fortum's share price appreciated approximately 16%, while Dow Jones European Utility index decreased 3% and Nasdaq Helsinki Cap index decreased 8%.

In 2018, a total of 474.7 million (2017: 582.9) Fortum Corporation shares, totalling EUR 9,065 million, were traded on the Nasdaq Helsinki. The highest quotation of Fortum Corporation shares during 2018 was EUR 22.91, the lowest EUR 16.43, and the volume-weighted average EUR 19.09. The closing quotation on the last trading day of the year 2018 was EUR 19.10 (2017: 16.50). Fortum's market capitalisation, calculated using the closing quotation of the last trading day of the year, was EUR 16,966 million (2017: 14,658).

In addition to the Nasdaq Helsinki, Fortum shares were traded on several alternative market places, for example at Boat, Cboe and Turquoise, and on the OTC market. In 2018, approximately 68% (2017: 61%) of Fortum's shares were traded on markets other than the Nasdaq Helsinki Ltd.

Share capital

Share capital

EUR million	2018	
	Number of shares	Share capital
Registered shares at 1 January	888,367,045	3,046
Cancellation of treasury shares	72,580	-
Registered shares at 31 December	888,294,465	3,046

Fortum Corporation has one class of shares. By the end of 2018, a total of 888,294,465 shares (2017: 888,367,045) had been issued. Each share entitles the holder to one vote at the Annual General Meeting. All shares entitle holders to an equal dividend. At the end of 2018, Fortum Corporation's share capital, paid in its entirety and entered in the trade register, was EUR 3,046,185,953.00.

In the merger of Länsivoima Oyj (former Lounais-Suomen Sähkö Oy) to Fortum Corporation in 2000, those shareholders of Länsivoima Oyj that did not produce their share certificates and did not request their rights to be registered in the book-entry system, received their respective shares of Fortum Corporation as merger consideration to a joint book-entry account opened on their behalf (the "Joint Account"). The Annual General Meeting 2018 of Fortum Corporation decided, that the rights to all such shares entered in the Joint Account and to the rights attached to such shares that had not been requested to be registered in the book-entry system prior to the decision by the Annual General Meeting 2018, were forfeited. In addition to the shares, the rights attached to such shares, such as undrawn dividend, were forfeited. The provisions applicable to treasury shares held by the company were applied to the forfeited shares. On 17 December 2018, Board of Directors decided to cancel all these 72,580 Fortum shares owned by the company without decreasing the share capital. The cancellation was entered in the Trade Register on 21 December 2018.

Shareholders

At the end of 2018, the Finnish State owned 50.76% of the company's shares. The Finnish Parliament has authorised the Government to reduce the Finnish State's holding in Fortum Corporation to no less than 50.1% of the share capital and voting rights.

The proportion of nominee registrations and direct foreign shareholders was 30.8 % (2017: 30.6%).

Shareholders, 31 December 2018

Shareholders	No. of shares	Holding %
Finnish State	450,932,988	50.76
Ilmarinen Mutual Pension Insurance Company	8,955,600	1.01
Varma Mutual Pension Insurance Company	8,575,167	0.97
The Finnish Social Insurance Institution	7,030,896	0.79
Kurikan Kaupunki	6,203,500	0.70
The State Pension Fund	4,600,000	0.52
Elo Mutual Pension Insurance Company	4,420,000	0.50
OP-Finland	2,710,654	0.31
The Local Government Pensions Institution	2,568,955	0.29
Schweizerische Nationalbank	2,010,237	0.23
Danske Finnish Institutional Equity Fund	1,080,000	0.12
OP-Henkivakuutus Ltd.	962,467	0.11
Kauhajoen Kaupunki	902,640	0.10
Seligson & Co OMX 25 fund	837,941	0.09
Nominee registrations and direct foreign ownership ¹⁾	271,655,835	30.58
Other shareholders in total	114,847,585	12.93
Total number of shares	888,294,465	100.00

1) Excluding Schweizerische Nationalbank

By shareholder category	% of total amount of shares
Finnish shareholders	
Corporations	1.14
Financial and insurance institutions	1.67
General government	55.78
Non-profit organisations	1.14
Households	9.46
Non-Finnish shareholders	30.81
Total	100.00

Breakdown of share ownership, 31 December 2018

Number of shares owned	No. of shareholders	% of shareholders	No. of shares	% of total amount of shares
1–100	37,557	30.54	1,980,752	0.22
101–500	47,199	38.38	12,546,537	1.41
501–1,000	18,498	15.04	13,621,769	1.53
1,001–10,000	18,684	15.19	48,637,140	5.48
10,001–100,000	949	0.77	20,834,163	2.35
100,001–1,000,000	70	0.06	22,060,974	2.48
1,000,001–10,000,000	10	0.01	48,155,009	5.42
over 10,000,000	1	0.00	450,932,988	50.76
	122,968	100.00	618,769,332	69.66
In the joint book-entry account and in special accounts on 31 December			596	0.00
Nominee registrations			269,524,537	30.34
Total			888,294,465	100.00

Management shareholding 31 December 2018

At the end of 2018, the President and CEO and other members of the Fortum Executive Management owned 193,227 shares (2017: 200,667) representing approximately 0.02% (2017: 0.02%) of the total shares in the company.

A full description of the shareholdings and interests in long-term incentive schemes of the President and CEO and other members of the Fortum Executive Management is shown in ▶ **Note 11** Employee benefits.

Authorisations from the Annual General Meeting 2018

In 2018, the Annual General Meeting decided to authorise the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum number of 20,000,000 shares, which corresponds to approximately 2.25% of all the shares in the company. The authorisation is effective for a period of 18 months from the resolution of the General Meeting. The authorisation had not been used by the end of 2018.

Dividend policy

The dividend policy ensures that shareholders receive a fair remuneration for their entrusted capital, supported by the company's long-term strategy that aims at increasing earnings per share and thereby the dividend. When proposing the dividend, the Board of Directors looks at a range of factors, including the macro environment, balance sheet strength as well as future investment plans. Fortum Corporation's target is to pay a stable, sustainable and over time increasing dividend, in the range of 50–80% of earnings per share, excluding one-off items.

Dividend distribution proposal

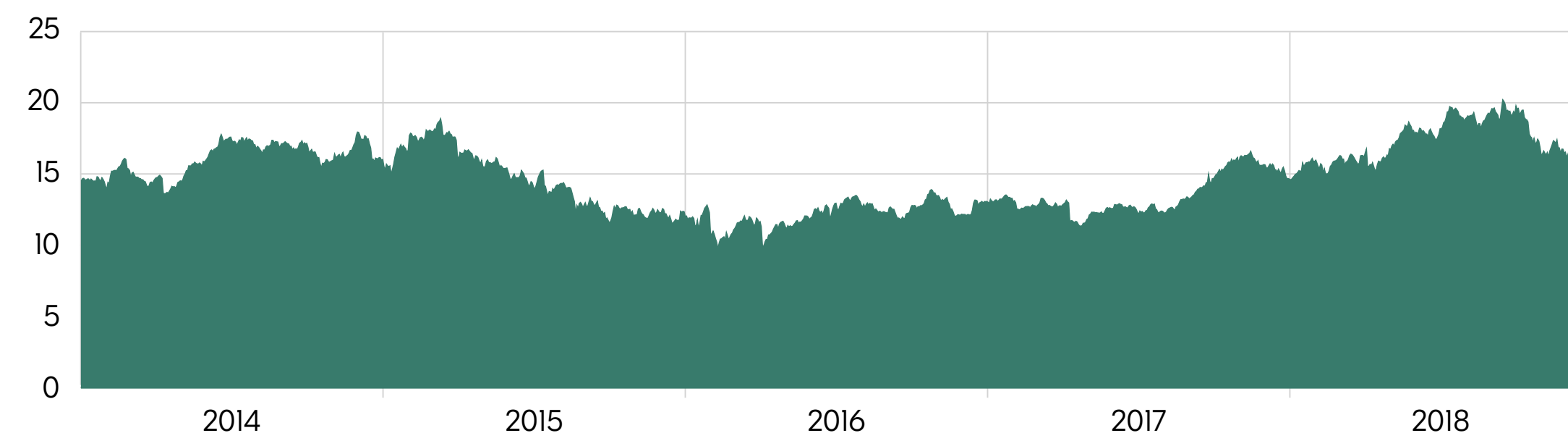
The distributable funds of Fortum Corporation as at 31 December 2018 amounted to EUR 4,991,388,741.37 including the profit of the financial period 2018 of EUR 797,840,404.43. The company's liquidity is good and the dividend proposed by the Board of Directors will not compromise the company's liquidity.

The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.10 per share be paid for 2018.

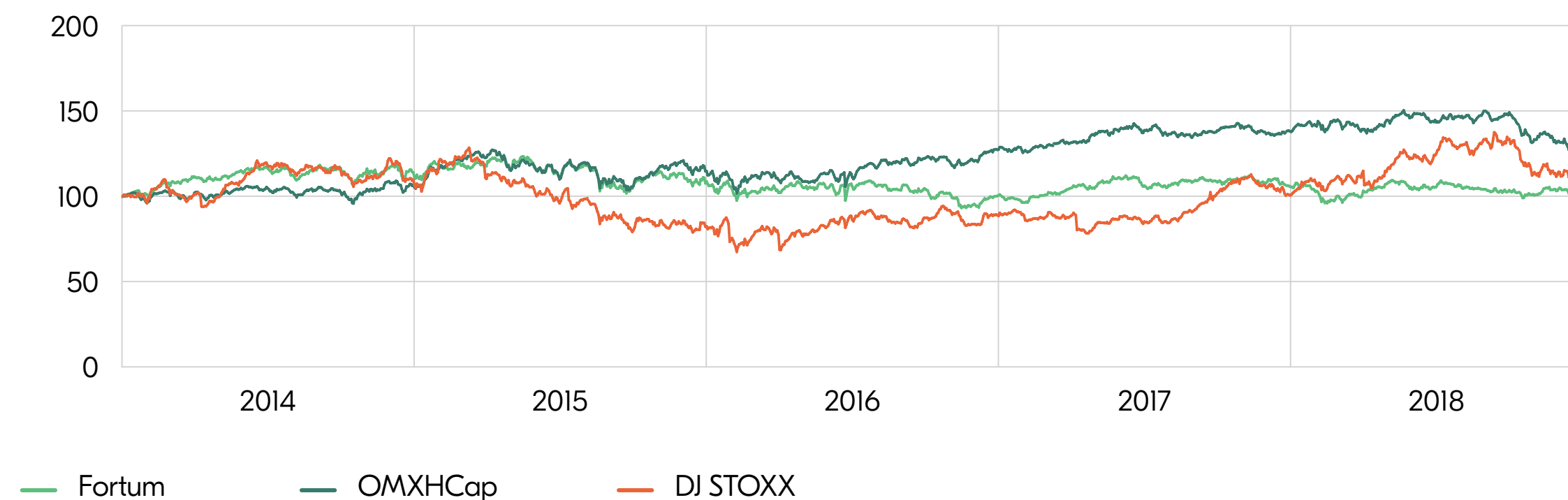
Based on the number of registered shares as at 31 January 2019 the total amount of dividend would be EUR 977,123,911.50. The Board of Directors proposes, that the remaining part of the distributable funds be retained in the shareholders' equity.

The Annual General Meeting will be held on 26 March 2019 at 11:00 EET at Finlandia Hall in Helsinki.

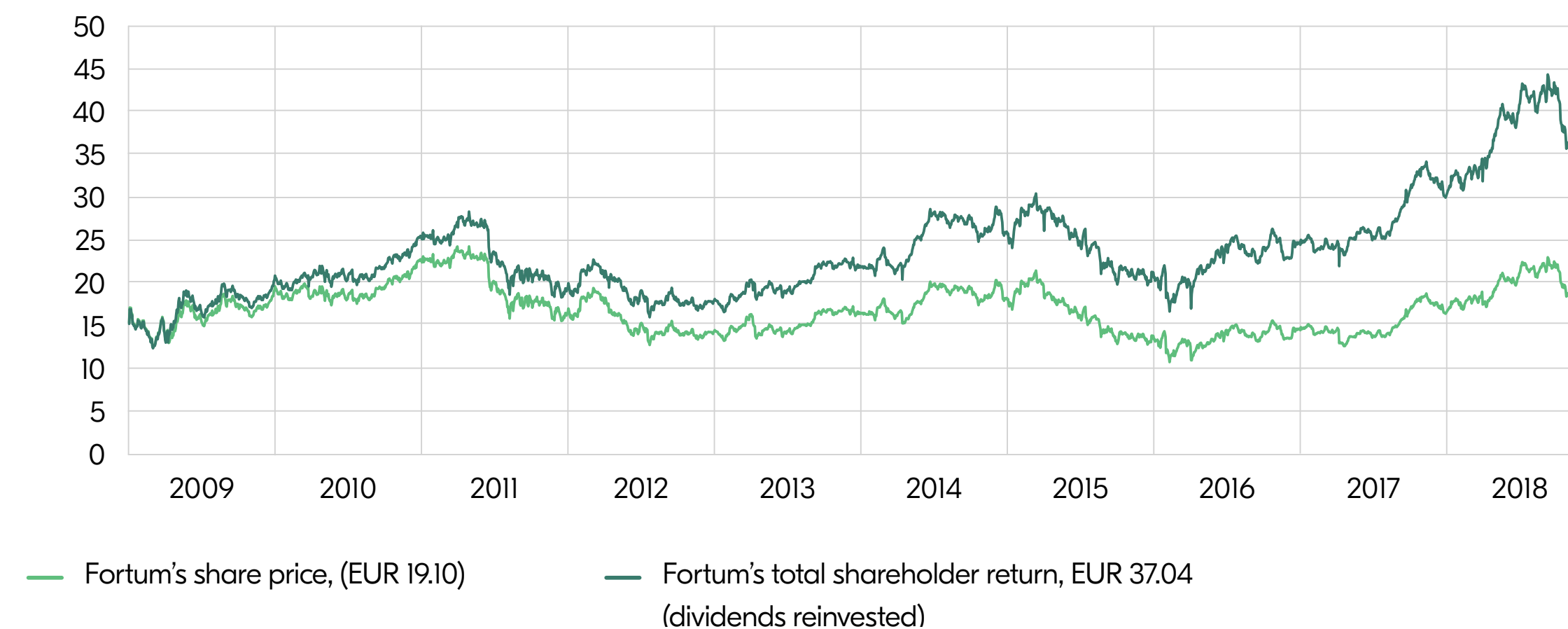
Market capitalisation, EUR billion



Share quotations, index 100 = quote on 2 January 2014



Total shareholder return, EUR



Consolidated income statement

EUR million	Note	2018	2017
Sales	6	5,242	4,520
Other income	9	130	55
Materials and services	10	-2,795	-2,301
Employee benefits	11	-459	-423
Depreciation and amortisation	6, 17, 18	-536	-464
Other expenses	9	-594	-576
Comparable operating profit	6	987	811
Items affecting comparability	7	151	347
Operating profit	6	1,138	1,158
Share of profit of associates and joint ventures	6, 19	38	148
Interest expense		-148	-164
Interest income		34	32
Fair value gains and losses on financial instruments	8	-8	-12
Other financial expenses - net		-15	-50
Finance costs - net	12	-136	-195
Profit before income tax		1,040	1,111
Income tax expense	13	-181	-229
Profit for the period		858	882
Attributable to:			
Owners of the parent		843	866
Non-controlling interests		15	16
		858	882
Earnings per share for profit attributable to the equity owners of the company (EUR per share)	14		
Basic		0.95	0.98

EUR million	Note	2018	2017
Comparable operating profit		987	811
Impairment charges		-4	6
Capital gains and other		102	326
Changes in fair values of derivatives hedging future cash flow	8	98	14
Nuclear fund adjustment	6	-45	1
Items affecting comparability	6, 7	151	347
Operating profit		1,138	1,158

See [▶ Definitions for key figures](#)

As Fortum currently has no dilutive instruments outstanding, diluted earnings per share is the same as basic earnings per share.

Consolidated statement of comprehensive income

EUR million	Notes	2018	2017
Profit for the period		858	882
Other comprehensive income			
Items that may be reclassified to profit or loss in subsequent periods:			
Cash flow hedges			
Fair value gains/losses in the period		-778	22
Transfers to income statement		15	76
Transfers to inventory/fixed assets		-2	-4
Deferred taxes		162	-19
Net investment hedges			
Fair value gains/losses in the period		32	23
Deferred taxes		-6	-5
Exchange differences on translating foreign operations	4.6	-525	-372
Share of other comprehensive income of associates and joint ventures	19	-37	-10
Other changes		0	-2
		-1,141	-291
Items that will not be reclassified to profit or loss in subsequent periods:			
Actuarial gains/losses on defined benefit plans	31	3	-13
Actuarial gains/losses on defined benefit plans in associates and joint ventures	31	43	6
		46	-7
Other comprehensive income for the period, net of deferred taxes		-1,094	-298
Total comprehensive income for the year		-236	584
Total comprehensive income attributable to:			
Owners of the parent		-239	571
Non-controlling interests		3	13
		-236	584

Other comprehensive income (OCI) includes items of income and expense that are recognised in equity and not recognised in the consolidated income statement. They include unrealised items, such as fair value gains and losses on financial instruments hedging future cash flows. These items will be realised in the Consolidated income statement when the underlying hedged items is recognised. OCI also includes gains and losses on fair valuation of other investments, actuarial gains and losses from defined benefit plans, items on comprehensive income in associated companies and translation differences.

Fair valuation of cash flow hedges mainly relates to fair valuation of derivatives, such as futures and forwards, hedging electricity price for future transactions, where hedge accounting is applied. When electricity price is higher (lower) than the hedging price, the impact on equity is negative (positive).

Translation differences from translation of foreign entities, mainly RUB and SEK.

[Income statement](#)
[Statement of comprehensive income](#)
[Balance sheet](#)
[Statement of changes in total equity](#)
[Cash flow statement](#)

Consolidated balance sheet

EUR million	Note	31 Dec 2018	31 Dec 2017
ASSETS			
Non-current assets			
Intangible assets	17	1,087	1,064
Property, plant and equipment	18	9,981	10,510
Participations in associates and joint ventures	19	5,978	1,900
Share in State Nuclear Waste Management Fund	29	899	858
Other non-current assets	20	139	140
Deferred tax assets	28	70	73
Derivative financial instruments	4	229	281
Long-term interest-bearing receivables	21	683	1,010
Total non-current assets		19,065	15,835
Current assets			
Inventories	22	233	216
Derivative financial instruments	4	326	240
Short-term interest-bearing receivables	21	409	395
Income tax receivables	28	172	172
Trade and other receivables	23	1,620	997
Deposits and securities (maturity over three months)		29	715
Cash and cash equivalents		557	3,182
Liquid funds	24	584	3,897
Total current assets		3,344	5,918
Total assets		22,409	21,753

EUR million	Note	31 Dec 2018	31 Dec 2017
EQUITY			
Equity attributable to owners of the parent			
Share capital	25	3,046	3,046
Share premium		73	73
Retained earnings		9,232	9,875
Other equity components		-510	54
Total		11,841	13,048
Non-controlling interests	26	236	239
Total equity		12,077	13,287
LIABILITIES			
Non-current liabilities			
Interest-bearing liabilities	27	5,007	4,119
Derivative financial instruments	4	362	214
Deferred tax liabilities	28	720	819
Nuclear provisions	29	899	858
Other provisions	30	91	100
Pension obligations	31	98	102
Other non-current liabilities	32	182	175
Total non-current liabilities		7,358	6,388
Current liabilities			
Interest-bearing liabilities	27	1,086	766
Derivative financial instruments	4	829	200
Trade and other payables	33	1,058	1,112
Total current liabilities		2,973	2,078
Total liabilities		10,332	8,466
Total equity and liabilities		22,409	21,753

Consolidated statement of changes in total equity

EUR million	Note	Share capital	Share premium	Retained earnings		Other equity components			Owners of the parent	Non-controlling interests	Total equity
				Retained earnings and other funds	Translation of foreign operations	Cash flow hedges	Other OCI items	OCI items associated companies and joint ventures			
BS Total equity 31 December 2017		3,046	73	12,062	-2,187	-40	70	24	13,048	239	13,287
Impact from change in accounting principle (IFRS 9 and 15)				7					7		7
Total equity 1 January 2018		3,046	73	12,069	-2,187	-40	70	24	13,055	239	13,295
Net profit for the period				843					843	15	858
Translation differences					-519	0	1	-1	-518	-7	-525
Other comprehensive income				0		-599	28	6	-564	-5	-569
Total comprehensive income for the period				843	-519	-598	29	6	-239	3	-236
Cash dividend	14			-977					-977	-6	-983
Other				2					2	0	2
BS Total equity 31 December 2018		3,046	73	11,937	-2,705	-638	99	30	11,841	236	12,077
BS Total equity 31 December 2016		3,046	73	12,186	-1,817	-115	58	27	13,459	84	13,542
Net profit for the period				866					866	16	882
Translation differences					-369	1	1	-1	-369	-3	-372
Other comprehensive income				-9		74	11	-2	73	0	74
Total comprehensive income for the period				857	-369	75	11	-3	571	13	584
Cash dividend	14			-977					-977	-2	-979
Other				-4					-4	145	141
BS Total equity 31 December 2017		3,046	73	12,062	-2,187	-40	70	24	13,048	239	13,287

Translation differences

Translation of financial information from subsidiaries in foreign currency is done using average rate for the income statement and end rate for the balance sheet. The exchange rate differences occurring from translation to EUR are booked to equity. Translation differences impacted equity attributable to owners of the parent company with EUR -518 million during 2018 (2017: -369). Translation differences are mainly related to RUB and SEK. Part of this translation exposure has been hedged and the foreign currency hedge result, amounting to EUR 24 million (2017: 28), is included in the other OCI items.

For information regarding exchange rates used, see ▶ **Note 1** Accounting policies. For information about translation exposure see ▶ **Note 4.6** Interest rate risk and currency risk.

Cash flow hedges

The impact on equity attributable to owners of the parent from fair valuation of cash flow hedges, EUR -598 million (2017: 75), mainly relates to fair valuation of derivatives, such as futures and forwards, hedging electricity price for future transactions, where hedge accounting is applied. When electricity price is higher (lower) than the hedging price, the impact on equity is negative (positive).

Non-controlling interests

Non-controlling interests increased with EUR 155 million during 2017 mainly due to the acquisition of Fortum Oslo Varme AS, which is consolidated as a subsidiary with 50% non-controlling interest. See also ▶ **Note 3** Acquisitions and disposals.

Consolidated cash flow statement

EUR million	Note	2018	2017
Cash flow from operating activities			
Profit for the period		858	882
Adjustments:			
Income tax expenses		181	229
Finance costs - net		136	195
Share of profit of associates and joint ventures		-38	-148
Depreciation and amortisation		536	464
Operating profit before depreciations (EBITDA)		1,674	1,623
Items affecting comparability		-151	-347
Comparable EBITDA		1,523	1,275
Non-cash flow items		-90	-76
Interest received		23	35
Interest paid		-171	-187
Dividends received		61	58
Realised foreign exchange gains and losses		231	-83
Income taxes paid		-94	-83
Other items		-9	-28
Funds from operations		1,474	912
Change in working capital		-670	81
Net cash from operating activities		804	993
Cash flow from investing activities			
Capital expenditures	17, 18	-579	-657
Acquisitions of shares		-4,088	-972
Proceeds from sales of fixed assets		38	8
Divestments of shares		259	741
Shareholder loans to associated companies and joint ventures		-24	43
Change in cash collaterals and restricted cash		-36	-3
Change in other interest-bearing receivables		31	34
Net cash used in investing activities		-4,398	-807

EUR million	Note	2018	2017
Cash flow before financing activities		-3,594	187
Cash flow from financing activities			
Proceeds from long-term liabilities		1,764	35
Payments of long-term liabilities		-586	-543
Change in short-term liabilities		135	68
Dividends paid to the owners of the parent	14	-977	-977
Other financing items		-9	-12
Net cash used in financing activities		326	-1,428
Total net increase(+)/decrease(-) in liquid funds		-3,268	-1,241
Liquid funds at the beginning of the year ¹⁾		3,896	5,155
Foreign exchange differences in liquid funds		-43	-16
Liquid funds at the end of the period	24	584	3,897

1) Opening balance 1 January 2018 adjusted EUR -1 million due to adoption of IFRS 9, see ▶ [Note 1.6](#) New IFRS standards adopted from 1 Jan 2018.

Realised foreign exchange gains and losses relate mainly to financing of Fortum's Russian and Swedish subsidiaries and the fact that the Group's main external financing currency is EUR. The foreign exchange gains and losses arise from rollover of foreign exchange contracts hedging these internal loans as major part of the forwards are entered into with short maturities i.e. less than twelve months.

Capital expenditures in cash flow do not include not yet paid investments. Capitalised borrowing costs are presented in interest paid.

[Income statement](#)
[Statement of comprehensive income](#)
[Balance sheet](#)
[Statement of changes in total equity](#)
[Cash flow statement](#)

Change in net debt

EUR million	2018	2017
Net debt 1 January	988	-48
Impact from change in accounting principle (IFRS 9)	1	
Foreign exchange rate differences	15	-15
Comparable EBITDA	1,523	1,275
Non-cash flow items	-90	-76
Paid net financial costs	138	-199
Income taxes paid	-94	-83
Change in working capital	-670	81
Capital expenditures	-579	-657
Acquisitions	-4,088	-972
Divestments	298	749
Shareholder loans to associated companies	-24	43
Change in other interest-bearing receivables	-5	31
Dividends	-977	-977
Other financing activities	-12	-17
Net cash flow (- increase in net debt)	-4,580	-802
Fair value change of bonds, amortised cost valuation, acquired debt and other	-75	248
Net debt 31 December	5,509	988

Additional cash flow information

Change in working capital

EUR million	2018	2017
Change in settlements for futures, decrease(+)/increase(-)	-524	141
Change in interest-free receivables, decrease(+)/increase(-)	-186	-94
Change in inventories, decrease(+)/increase(-)	-3	19
Change in interest-free liabilities, decrease(-)/increase(+)	43	15
CF Total	-670	81

In Fortum's cash flow statement the daily cash settlements for futures are shown as change in working capital whereas the changes in cash collaterals for forwards are included in cash flow from investing activities. The cash collaterals are included in the short-term interest-bearing receivables and the daily cash settlements are included in the other receivables, see [▶ Note 21](#) Interest-bearing receivables and [▶ Note 23](#) Trade and other receivables.

Capital expenditure in cash flow

EUR million	Note	2018	2017
Capital expenditure	6, 17, 18	584	690
Change in not yet paid investments, decrease(+)/increase(-)		5	-17
Capitalised borrowing costs		-10	-16
CF Total		579	657

Capital expenditures for intangible assets and property, plant and equipment were in 2018 EUR 584 million (2017: 690). Capital expenditure in cash flow in 2018 EUR 579 million (2017: 657) is including payments related to capital expenditure made in previous year i.e. change in trade payables related to investments EUR 5 million (2017: -17) and excluding capitalised borrowing costs EUR -10 million (2017: -16), which are presented in interest paid.

See also information about the investments by segments and countries in [▶ Note 6](#) Segment reporting and the investment projects by segment in [▶ Note 18.2](#) Capital expenditure.

Acquisition of shares in cash flow

Acquisition of shares, net of cash acquired, amounted to EUR 4,088 million during 2018 (2017: 972). Acquisition of shares during 2018 include mainly the acquisition of shares in Uniper SE. During 2018 Fortum also acquired 100% of the shares in the Fincumet Group metal recycling companies, three Latvian heat producing companies and other smaller companies. Fortum also invested in the wind investment fund owned 50/50 by Fortum and RUSNANO. For further information see [▶ Note 3](#) Acquisitions and disposals.

Divestment of shares in cash flow

EUR million	Note	2018	2017
Proceeds from sales of subsidiaries, net of cash disposed	3	88	54
Proceeds from sales of associates and joint ventures		171	687
CF Total		259	741

Proceeds from sales of subsidiaries during 2018 include mainly the sale of the 54% share of Fortum's solar power company in accordance with the capital recycling business model. Proceeds from sales of associated companies and joint ventures during 2018 include the sale of Fortum's 10% ownership in Hafslund Produksjon Holding AS. For further information see [▶ Note 3](#) Acquisitions and disposals.

1 Accounting policies

1.1 Basic information

Fortum Corporation (the Company) is a Finnish public limited liability company with its domicile in Espoo, Finland. Fortum's shares are traded on Nasdaq Helsinki.

The operations of Fortum Corporation and its subsidiaries (together the Fortum Group) focus on the Nordic and Baltic countries, Russia and Poland. Fortum's activities cover generation and sale of electricity, generation, distribution and sale of heat, and energy-related expert services. In addition Fortum has major shareholdings including a 49.99% participation in Uniper SE.

These financial statements were approved by the Board of Directors on 31 January 2019.

1.2 Basis of preparation

The consolidated financial statements of the Fortum Group have been prepared in accordance with International Financial Reporting Standards (IFRS) and IFRIC Interpretations as adopted by the European Union. The financial statements also comply with Finnish accounting principles and corporate legislation.

The consolidated financial statements have been prepared under the historical cost convention, except for financial assets and financial liabilities (including derivative instruments) at fair value through profit and loss or other comprehensive income.

The figures in the consolidated financial statements have been rounded and consequently the sum of individual figures may deviate from the sum presented. Key figures have been calculated using exact figures.

1.2.1 Measures for performance

According to the ESMA Guidelines on Alternative Performance Measures, an Alternative Performance Measure (APM) is understood as a financial measure of historical or future financial performance, financial position, or cash flows, other than a financial measure defined or specified in the applicable financial reporting framework.

Fortum uses Alternative performance measures (APMs) in the financial target setting and forecasting, management's follow up of financial performance of segments and the group as well as allocation of resources in the group's performance management process. The business performance of the operations cannot be compared from one period to another without adjusting for items affecting comparability and therefore they are excluded from Comparable operating profit and Comparable EBITDA. The main business performance measurements have been used consistently since 2005.

Definitions are presented in the section [Definitions of key figures](#).

1.2.2 Classification of current and non-current assets and liabilities

An asset or a liability is classified as current when it is expected to be realised in the normal operating cycle or within twelve months after the balance sheet date or it is classified as financial assets or liabilities, except financial derivatives, held at fair value through profit or loss. Liquid funds are classified as current assets.

All other assets and liabilities are classified as non-current assets and liabilities.

1.3 Principles for consolidation

The consolidated financial statements comprise of the parent company, subsidiaries, joint ventures and associated companies.

The Fortum Group was formed in 1998 by using the pooling-of-interests method for consolidating Fortum Power and Heat Oy and Fortum Oil and Gas Oy (the latter demerged to Fortum Oil Oy and Fortum Heat and Gas Oy 1 May 2004). In 2005 Fortum Oil Oy (current Neste Oyj) was separated from Fortum by distributing 85% of its shares to Fortum's shareholders and by selling the remaining 15%. This means that the acquisition cost of Fortum Power and Heat Oy and Fortum Heat and Gas Oy has been eliminated against the share capital of the companies. The difference has been entered as a decrease in shareholders' equity.

1.3.1 Subsidiaries

Subsidiaries are defined as companies in which Fortum has control. Control exists when Fortum is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

The acquisition method of accounting is used to account for the acquisition of subsidiaries. The cost of an acquisition is measured as the aggregate of fair value of the assets given and liabilities incurred or assumed at the date of exchange. Identifiable assets acquired and liabilities assumed in a business combination are measured initially at their fair values at the acquisition date, irrespective of the extent of any minority interest. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill. If the cost of acquisition is less than the fair value of the net assets of the subsidiary acquired, the difference is recognised directly in the income statement.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group and are no longer consolidated from the date that control ceases.

Intercompany transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment

of the asset transferred. Where necessary, subsidiaries' accounting policies have been changed to ensure consistency with the policies the Group has adopted.

The Fortum Group subsidiaries are disclosed in [▶ Note 40](#) Subsidiaries by segment on 31 December 2018.

1.3.2 Associates

Associated companies are entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. The Group's interests in associated companies are accounted for using the equity method of accounting.

1.3.3 Joint ventures

Joint ventures are arrangements in which the Group has joint control. Joint ventures are accounted for using the equity method of accounting.

1.3.4 Non-controlling interests

Non-controlling interests in subsidiaries are identified separately from the equity of the owners of the parent company. The non-controlling interests are initially measured at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests' share of subsequent changes in equity.

1.4 Foreign currency transactions and translation

1.4.1 Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The consolidated financial statements are presented in euros, which is the Company's functional and presentation currency.

1.4.2 Transactions and balances

Transactions denominated in foreign currencies are translated using the exchange rate at the date of the transaction. Receivables and liabilities denominated in foreign currencies outstanding on the closing date are translated using the exchange rate quoted on the closing date. Exchange rate differences have been entered in the income statement. Net conversion differences relating to financing are entered under financial income or expenses, except when deferred in equity as qualifying cash flow hedges. Translation differences on financial assets through other comprehensive income are included in Other equity components section of the equity.

1.4.3 Group companies

The income statements of subsidiaries, whose measurement and reporting currencies are not euros, are translated into the Group reporting currency using the average exchange rates for the year based on the month-end exchange rates, whereas the balance sheets of such subsidiaries are translated using the exchange rates on the balance sheet date. On consolidation, exchange differences arising from the translation of the net investment in foreign entities, and of borrowings and other currency instruments designated as hedges of such investments, are taken to equity. When a foreign operation is sold, such exchange differences are recognised in the income statement as part of the gain or loss on sale. Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate.

The balance sheet date rate is based on the exchange rate published by the European Central Bank for the closing date. The average exchange rate is calculated as an average of each month's ending rate from the European Central Bank during the year and the ending rate of the previous year.

The key exchange rates applied in the Fortum Group accounts:

	Currency	Average rate		Balance sheet date rate	
		2018	2017	31 Dec 2018	31 Dec 2017
Sweden	SEK	10.2591	9.6392	10.2548	9.8438
Norway	NOK	9.6432	9.3497	9.9483	9.8403
Poland	PLN	4.2614	4.2556	4.3014	4.1770
Russia	RUB	73.8035	66.0349	79.7153	69.3920

1.4.4 Associates and joint ventures

The Group's interests in associated companies and joint ventures are accounted for by the equity method. Associates and joint ventures, whose measurement and reporting currencies are not euro, are translated into the Group reporting currency using the same principles as for subsidiaries, see [▶ 1.4.3](#) Group companies.

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1.5 Other accounting policies

Fortum describes the other accounting principles in conjunction with the relevant note information. The table below lists the significant accounting policies and the note where they are presented as well as the relevant IFRS standard.

Accounting principle	Note		IFRS standard
Segment reporting	6	Segment reporting	IFRS 8, IFRS 15
Revenue recognition	6, 23	Segment reporting and Trade and other receivables	IFRS 15
Government grants	18	Property, plant and equipment	IAS 20
Share-based payments	11	Employee benefits	IFRS 2
Income taxes	28	Income taxes in balance sheet	IAS 12
Joint arrangements	19	Participations in associated companies and joint ventures	IFRS 11, IAS 28, IFRS 12
Investments in associates	19	Participations in associated companies and joint ventures	IAS 28, IFRS 12
Other shares and participations	15, 20	Financial assets and liabilities by categories and Other non-current assets	IAS 16, IAS 36, IFRS 9
Intangible assets	17	Intangible assets	IAS 38
Tangible assets	18	Property, plant and equipment	IAS 16, IAS 36, IAS 40
Leases	34	Lease commitments	IAS 17
Inventories	22	Inventories	IAS 2
Earnings per share	14	Earnings and dividend per share	IAS 33
Pensions and similar obligations	31	Pension obligations	IAS 19
Decommissioning obligation	29	Nuclear related assets and liabilities	IFRIC 5
Provisions	30	Other provisions	IAS 37
Contingent liabilities	36	Pledged assets and contingent liabilities	IAS 37
Financial instruments	4, 15, 16	Financial risk management, Financial assets and liabilities by categories and Financial assets and liabilities by fair value hierarchy	IAS 32, IFRS 7, IFRS 9, IFRS 13
Liquid funds	24	Liquid funds	IAS 7
Borrowings	27	Interest-bearing liabilities	IFRS 9

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1.6 Implementation of IFRS 9 and IFRS 15 from 1 January 2018

Fortum has adopted the following new or amended standards on 1 January 2018:

IFRS 9 Financial instruments

Nature of change	The standard has new requirements for the classification and measurement of financial assets, hedge accounting and impairment of financial assets.
Date of adoption and transition method	Fortum has applied the new rules retrospectively, but utilises the transition relief for not restating the comparative figures and thus the transition effect is recognised as an adjustment to the retained earnings as of 1 January 2018. Adjustments to opening balances on 1 January 2018 from IFRS 9 are presented in the table 'Opening balance adjustments from adoption of IFRS 9 and IFRS 15'.
	Changes to hedge accounting requirements are however implemented prospectively and therefore have no impact on the prior year figures nor presentation.

Impact	Hedging
	IFRS 9 simplifies the hedge accounting requirements and aligns them with the company's risk management strategy and objectives. This has had the biggest impact on Fortum's electricity price risk hedging, as majority of the non-hedge accounted electricity derivatives qualified for hedge accounting under IFRS 9. Fortum's profit and loss volatility from commodity derivatives hedging future cash flows is reduced as all fair value changes of the hedge accounted commodity derivatives are fully recognised in other comprehensive income. Income statement volatility is reduced gradually due to prospective implementation.

All Fortum's derivatives (electricity, currency and interest rate) that have qualified for hedge accounting under IAS 39 continued to do so also under IFRS 9. In addition the electricity system price products that have previously failed to meet the rule-based criteria of IAS 39 have qualified for hedge accounting under IFRS 9. The new possibility in IFRS 9 to apply hedge accounting for one or several risk components, separately or in aggregation, has allowed Fortum to expand the scope of hedge accounting to electricity price area differential (EPAD) commodity derivatives and FX derivatives, both of them being perfect hedges for corresponding electricity price risk components.

Impairment

The new impairment requirements are based on an expected credit loss ("ECL") model and replaced the incurred loss model of IAS 39. The new impairment model contains financial assets such as trade receivables, loan receivables and liquid funds.

The implementation of new ECL models resulted in minor increase in bad debt provision, that was recognised as an adjustment of EUR 3 million (net of tax) in the retained earnings as of 1 January 2018. Future impacts will fluctuate due to seasonality and the amount of the trade receivables.

Classification and measurement

Most of Fortum's financial assets such as interest-bearing receivables and liquid funds are classified under "Held-to-Collect" business model. These assets are measured at Amortised cost as they meet the SPPI criteria (contractual terms define solely payments of principal and interest on specified dates). When the SPPI criteria is not met, financial assets are classified to Fair value through profit or loss-category. Reclassification of financial assets into the IFRS 9 categories had no impact on their respective measurement basis and therefore no adjustment to retained earnings as of 1 January 2018 was recognised.

Certain investments (shareholder loan to Teollisuuden Voima Oyj, EUR 145 million, and shareholding in Lapin Sähkövoima Oy, EUR 20 million) have been reclassified as Participation in associated company and joint venture.

Impacts to the 2018 classifications are presented below:

Assets	Measurement category	
	IAS 39	IFRS 9
Loans and other receivables	Loans and receivables at amortised cost	Amortised cost or fair value through profit and loss
Other financial assets	Available-for-sale financial assets	Fair value through other comprehensive income
Deposits and securities	Available-for-sale financial assets	Amortised cost

Accounting policies

Accounting policies related to IFRS 9 are presented in ▶ **Note 15** Financial assets and liabilities by categories.

IFRS 15 Revenue from Contracts with Customers

Nature of change	IFRS 15 Revenue from Contracts with Customers introduces a comprehensive five-step model for recognising revenue. As a result of applying the five steps, revenue will be recognised when goods are transferred or services performed at the price that the company expects to be entitled to.
Date of adoption and transition method	Fortum has adopted the new standard from 1 January 2018 onwards by applying the modified retrospective approach, which means that comparative information from 2017 is not restated. In the modified retrospective approach the cumulative effect of transition is booked as an adjustment to the retained earnings as of 1 January 2018. Adjustments to opening balances on 1 January 2018 from IFRS 15 are presented in the table 'Opening balance adjustments from adoption of IFRS 9 and IFRS 15'.
Impact	IFRS 15 transition did not have a significant impact to Fortum's financial statements and accounting policies. The biggest change relates to treatment of sales commission costs for obtaining customers in Consumer Solutions segment. Under IFRS 15 the sales commissions are capitalised and depreciated over the expected contract term. Before adoption of IFRS 15 the sales commissions were mostly expensed and the adoption of the new accounting standard thus impacts the timing and classification of sales commission expenses. The change is mainly impacting Comparable EBITDA and capital expenditure of Consumer Solutions segment.

In addition to the changed treatment of sales commissions, there are certain reclassification changes in income statement and balance sheet, which mostly arise from IFRS 15 scope and principal versus agent considerations.

Accounting policies related to IFRS 15 are presented in [▶ Note 6](#) Segment reporting.

Impact to the 2018 income statement and balance sheet is presented below:

Impact to income statement

EUR million	2018 without IFRS 15	Sales commissions	Reclassifications	2018 as reported
Sales	5,590		-348	5,242
Other income	101		29	130
Materials and services	-3,114		319	-2,795
Depreciation and amortisation	-505	-31		-536
Other expenses	-626	32		-594
Comparable operating profit	986	1	0	987
Income tax expense	-181	0		-181
Profit for the period	857	1	0	858
Comparable EBITDA	1,491	32	0	1,523

Impact to balance sheet

EUR million	December 31, 2018 without IFRS 15	Sales commissions	Reclassifications	December 31, 2018 as reported
Intangible assets	1,062	25		1,087
Other non-current assets	147	-8		139
Inventories	225		8	233
Trade and other receivables	1,632	-4	-8	1,620
Total assets	22,395	14	0	22,409
Retained earnings	9,221	11	0	9,232
Deferred tax liabilities	722	-2		720
Trade and other payables	1,053	5		1,058
Total equity and liabilities	22,395	14	0	22,409

Opening balance adjustments from adoption of IFRS 9 and IFRS 15

The following table presents the impact of applying IFRS 9 and 15 to the opening balance sheet as of 1 January 2018.

EUR million	1 Jan 2018 (IAS 39 and 18)	Change in hedge accounting status	Change of measurement basis	Remeasurement	Capitalisation of sales commission	Other	1 Jan 2018 (IFRS 9 and 15)
ASSETS							
Intangible assets	1,064				20		1,084
Participations in associates and joint ventures	1,900					165	2,066
Long-term interest-bearing receivables							
Measured at amortised cost	969		-77	-2		-145	746
Measured at fair value through profit and loss			77	-2			75
Other non-current assets	11,902				-5	-20	11,877
Total non-current assets	15,835	0	0	-3	15	1	15,848
Derivative financial instruments							
Cash flow hedges	106	14					121
Non-hedge accounting	134	-14					120
Short-term interest-bearing receivables							
Measured at amortised cost	395		-32				363
Measured at fair value through profit and loss			32				32
Other current assets	5,282				-3		5,279
Total current assets	5,918	0	0	0	-3	0	5,915
Total assets	21,753	0	0	-3	12	1	21,763
EQUITY							
Total equity	13,287	0	0	-3	10	1	13,295
LIABILITIES							
Derivative financial instruments							
Cash flow and fair value hedges	68	70					138
Non-hedge accounting	146	-70					76
Other non-current liabilities	6,174				3		6,176
Total non-current liabilities	6,388	0	0	0	3	0	6,390
Derivative financial instruments							
Cash flow hedges	44	82					126
Non-hedge accounting	156	-82					74
Other current liabilities	1,879						1,879
Total current liabilities	2,078	0	0	0	0	0	2,078
Total liabilities	8,466	0	0	0	3	0	8,469
Total equity and liabilities	21,753	0	0	-3	12	1	21,763

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1.7 Adoption of new IFRS standards from 1 Jan 2019 or later

Fortum will apply the following new or amended standards and interpretations starting from 1 January 2019 or later:

IFRS 16 Leases

Nature of change	New standard regarding lease accounting that will replace IAS 17. The new lease standard will result in almost all leases being recognised on the balance sheet, as the distinction between operating and finance lease is removed.
Date of adoption	1 January 2019
Impact	<p>Currently under IAS 17, lessees recognise leases either as operating leases or finance leases. The new standard no longer distinguishes between operating and finance leases from a lessees point of view, and most right-of-use assets are recognised in the balance sheet. For lessors, there are no significant changes. In brief, IFRS 16 requirements contain the following:</p> <ul style="list-style-type: none"> • A lessee shall recognise all leases, except for short-term and low value leases, in the balance sheet. • For lessees, both the value of the right-of-use asset and the corresponding liability shall be recognised in the balance sheet. <p>Fortum has assessed the impact of the new standard to its statement of financial position. Assessment has included:</p> <ul style="list-style-type: none"> • Reviewing current lease contracts reported as operating lease commitments • Going through supplier lists and identifying potential lease arrangements • Determining incremental borrowing rates • Calculation of accounting impacts • Implementing and integrating the new IFRS 16 software <p>Contracts have been gathered and reviewed. No material new leases have been identified. Majority of the current operating leases are for the use of land and office buildings.</p> <p>Fortum will apply the standard using the modified retrospective method, which means the comparative figures will not be restated. Right-of-use assets will be initially recognised equal to the value of lease liabilities, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the balance sheet before the initial application. In addition, Fortum will apply the exemption of not recognising short-term leases and leases of low-value assets in the balance sheet.</p> <p>The implementation of IFRS 16 will add right-of-use assets and corresponding lease liabilities approximately EUR 100 million. The impact to the consolidated statement of income will not be material. Further details on the impact will be disclosed in the Q1/2019 interim report.</p>

IFRIC 23 Uncertainty over Income Tax Treatment

Nature of change	IFRIC 23 specifies how to reflect uncertainty in accounting for income taxes
Date of adoption	1 January 2019
Impact	The systemically identified positions are analysed based on facts, circumstances, existing tax rules, court praxis, expert statements and tax authority policy statements. Based on the analysis Fortum does not expect that the interpretation will have any material effect on Fortum's financial statements.

Other new standards effective from 1 January 2019

Other new standards issued by the balance sheet date and effective from 1 January 2019 or later do not have a material impact on Fortum's financial statements.

2 Critical accounting estimates and judgements

The preparation of IFRS consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities existing at the balance sheet date as well as the reported amounts of revenues and expenses during the reporting period.

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results and timing may differ from these estimates.

The table below is listing the areas where management's accounting estimates and judgements are most critical to reported results and financial position. The table is also showing where to find more information about above-mentioned estimates and judgements.

Critical accounting estimates and judgements	Note
Assigned values and useful lives determined for intangible assets and property, plant and equipment acquired in a business combination	17 Intangible assets
Assumptions related to impairment testing of property, plant and equipment and intangible assets as well as associated companies and joint ventures	17 Intangible assets
Judgement used when assessing the nature of Fortum's interest in its investees and when considering the classification of Fortum's joint arrangements as well as commitments arising from these arrangements	19 Participations in associated companies and joint ventures
Assumptions and estimates regarding future tax consequences	28 Income taxes in balance sheet
Assumptions made to determine long-term cash flow forecasts of estimated costs for provision related to nuclear production	29 Nuclear related assets and liabilities
Assumptions made when estimating provisions	30 Other provisions
Assumptions used to determine future pension obligations	31 Pension obligations

3 Acquisitions and disposals

3.1 Acquisitions

EUR million	2018	2017
Gross investments in shares in subsidiary companies	36	982
Gross investments in shares in associated companies and joint ventures	4,041	135
Gross investments in available for sale financial assets	11	8
Gross investments in shares	4,088	1,125

Uniper investment

In September 2017, Fortum signed a transaction agreement with E.ON under which E.ON had the right to decide to tender its 46.65% shareholding in Uniper SE into Fortum's public takeover offer. In November 2017, Fortum launched a voluntary public takeover offer ("offer") to all Uniper shareholders. On 8 January 2018, E.ON decided to tender its shares to Fortum's offer. In February 2018, Fortum announced that shareholders representing 47.12% of the shares in Uniper had accepted the offer. The completion of Fortum's offer was subject to several competition and regulatory approvals. The final regulatory decisions were received 15 June 2018. In line with the Russian regulatory approvals, Fortum is allowed to purchase additional shares up to the 50% of shares and voting rights in Uniper. The final settlement of the offer took place on 26 June 2018.

The shareholders who tendered their shares to Fortum's offer were paid EUR 21.31 per share. The shareholders also benefitted from Uniper's dividend that was paid following the Annual General Meeting in early June. Fortum paid a total consideration of EUR 3.7 billion for all shares tendered. The total consideration was financed with existing cash resources of EUR 1.95 billion and bridge loan financing from committed credit facilities of EUR 1.75 billion. On 26 June 2018, Fortum closed the Uniper offer and became the company's largest shareholder with 47.35% of the shares. Since then Fortum has acquired additional shares in Uniper and holds 49.99% of the shares as of 31 December 2018.

Uniper is an international energy company with activities in Europe, Russia and other markets worldwide. Uniper's businesses are well aligned with Fortum's core competencies. The company operates power plants in Europe and Russia, with a total installed generation capacity of around 36 gigawatts, and it runs extensive energy trading operations as well as maintains gas storage facilities in Germany, Austria and the UK.

In 2017, Uniper's sales totalled EUR 72.2 billion and adjusted EBITDA was EUR 1.7 billion. Uniper employs around 12,000 people and had total assets of EUR 43 billion at the end of 2017. Uniper is listed on the Frankfurt stock exchange.

Fortum consolidates Uniper as an associated company from 30 June 2018. The total acquisition cost including direct costs relating to the acquisition, approximately EUR 4.0 billion as of 31 December 2018, is reported in the 'Participations in associated companies and joint ventures'.

Fortum uses Uniper's balance sheet as of 30 June 2018 (published 7 August 2018) as the starting point for the purchase price allocation. Purchase price allocation is still on-going and Fortum is evaluating potential fair value adjustments for the acquired assets and liabilities and identifying potential differences in order to align the accounting principles. The purchase price allocation will take time due to the size of transaction and will be completed within the one-year window from the acquisition date according to IFRS.

As Uniper publishes its interim reports later than Fortum, Fortum's share of Uniper's results will be accounted for with a time-lag of one quarter with potential adjustments. The share of profits of associates in Fortum's financial statements 2018 includes Fortum's share of Uniper's third quarter results amounting to EUR -2 million.

3.1.1 Acquisitions of subsidiary companies 2018

In August 2018 Fortum acquired all shares of three independent Latvian heat producers SIA BK Enerģija, SIA Energy & Communication and SIA Sprino as well as the shares of SIA Lake Development. The acquired production companies will continue to deliver heat to Daugavpils's municipal district heating company PAS Daugavpils Siltumtikli.

In October 2018 Fortum acquired the metal recycling business in Fincumet Group. In the transaction Fortum acquired shares in three companies: Fincumet Oy, Niemen Romukauppa Oy and NJS-Patentti Oy.

There were no other material acquisitions during 2018.

3.1.2 Acquisitions of subsidiary companies 2017

In January 2017 Fortum completed the acquisition of 100% of the shares in three wind power companies from the Norwegian company Nordkraft. The transaction consists of the Nygårdstjernet wind farm, which is already operational, as well as the fully-permitted Ånstadblåheia and Sørfjord projects. The Ånstadblåheia wind farm was commissioned during the fourth quarter of 2018 and the Sørfjord wind farm is expected to be commissioned in 2019. The total installed capacity of the three wind farms will be approximately 180 MW.

Fortum started a redemption process for the remaining shares of Ekokem Corporation (renamed as Fortum Waste Solution Oy) in October 2016. The process was finalised in March 2017 after which Fortum owns 100% of the shares in the company.

On 4 August Fortum concluded the restructuring of the ownership in Hafslund together with City of Oslo. Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo. Fortum acquired 100% of Hafslund Markets AS, 50% of Hafslund Varme AS including the City of Oslo's waste-to-energy company Klemetsrudanlegget AS (KEA), currently Fortum Oslo Varme AS, and 10% of Hafslund Produksjon Holding AS. The total debt-free price of the acquisition was approximately EUR 940 million.

The combined net cash investment of the transactions, including the dividend received in May 2017, was approximately EUR 230 million.

Hafslund Markets and Fortum Oslo Varme are consolidated into Fortum Group from 1 August 2017. Hafslund Markets is consolidated as a part of the Consumer Solutions segment. Fortum has operational responsibility of

Fortum Oslo Varme, which is consolidated as a subsidiary with 50% non-controlling interest into the results of City Solutions segment. Hafslund Produksjon Holding was treated as an associated company and reported in the Generation segment until the divestment in June 2018, see further information in 3.2 below.

The initial purchase price allocation as of 31 July 2017 was finalised during Q3 2018. No material changes were made compared to the information disclosed in the consolidated financial statements for 2017.

In December 2017 Fortum acquired three solar power companies from Hevel Group. The Pleshanovskaya (10 MW) and Grachevskaya (10 MW) solar power plants are located in the Orenburg region and the Bugulchanskaya (15 MW) solar power plant in the Republic of Bashkortostan. All three power plants are operational and will receive capacity Supply Agreement (CSA) payments for approximately 15 years after commissioning at an average CSA price corresponding to approximately EUR 400/MWh. The plants were commissioned in 2016 and 2017.

EUR million	Hafslund Markets AS	Fortum Oslo Varme AS	Other	Fortum total
Consideration paid in cash	589	152	70	811
Unpaid consideration	0	0	9	9
Total consideration	589	152	79	820
Fair value of the acquired net assets	374	84	77	535
Translation difference	1	0	2	2
Goodwill	215	69	1	286

EUR million	Hafslund Markets AS			Fortum Oslo Varme AS			Fortum total ¹⁾		
	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value
Cash and cash equivalents	158		158	37		37	201		201
Intangible assets	12	284	296	0		0	17	334	352
Property, plant and equipment	5		5	526	207	733	604	208	811
Other assets	179		179	21		21	206		206
Deferred tax liabilities	-19	-68	-88	-21	-50	-71	-46	-129	-175
Other non-interest bearing liabilities	-176		-176	-39		-39	-217		-217
Interest-bearing liabilities	0		0	-445		-445	-489		-489
Net identifiable assets	158	216	374	79	157	237	275	413	688
Non-controlling interests	0	0	0	51	102	153	51	102	153
Total	158	216	374	29	55	84	225	310	535

1) Including acquired book values and allocated fair values from the acquisition of Norwegian wind park companies, Russian solar power companies as well as other smaller acquisitions.

EUR million	Hafslund Markets AS	Fortum Oslo Varme AS	Other	Fortum total
Gross investment				
Purchase consideration settled in cash	589	152	70	811
Cash and cash equivalents in acquired subsidiaries	158	37	6	201
Translation difference	1	0	2	3
Cash outflow in acquisition	432	116	65	613
Unpaid consideration			9	9
Interest-bearing debt in acquired subsidiaries		445	44	489
of which loans given by Fortum		-213		-213
Transaction adjustments to debt-like items	54	26	0	80
Translation difference	0	1	2	4
Total gross investment in acquired subsidiaries	486	375	121	982

3.1.3 Other share transactions

In April 2017, Fortum and RUSNANO, a Russian state-owned development company, signed a 50/50 investment partnership in order to secure the possibility of a Russian Capacity Supply Agreement (CSA) wind portfolio in Russia. The wind investment fund 50/50 owned by Fortum and RUSNANO was awarded 1,000 MW wind capacity in Russian wind CSA auction in June 2017. The investments decisions will be made on a case-by-case basis within the total mandate of the wind investment fund. Fortum's equity stake in the wind investment fund totals a maximum of RUB 15 billion. The amount is invested over time (within approximately 5 years) as it is subject to positive investment decisions. During 2018 Fortum invested EUR 61 million (2017: 43) in the fund.

In October 2017 Fortum and SUENKO established a joint venture, JSC Ural-Siberian Heat and Power Company (YUSTEK), for the heat supply in Tyumen, Russia. Fortum will continue as CHP owner and selling heat to YUSTEK.

3.2 Disposals

EUR million	2018	2017
Gross divestments of shares in subsidiary companies	147	55
Gross divestments of shares in associated companies and joint ventures	160	687
Gross divestments of shares	306	742

3.2.1 Disposals of subsidiary companies

On 31 August 2018, Fortum sold a 54% share of its solar power company operating four solar power plants in India to UK Climate Investments (40%) and Elite Alfred Berg (14%). In line with Fortum's 'capital recycling' business model, the result from the transaction, EUR 26 million, is recognised in Other operations' Comparable operating profit. The total consideration from the divestment on a debt- and cash-free basis, including the effect

of deconsolidating Fortum's minority part of the net debt, is EUR 147 million. In addition, Elite Alfred Berg has an option to buy up to an additional 16% from Fortum.

In July 2017 Fortum sold 100% of its shares in the Polish gas infrastructure company DUON Dystrybucja S.A. to Infracapital, the infrastructure investment arm of M&G Investments. DUON Dystrybucja S.A. is transporting grid gas and LNG in Poland. The company was acquired as part of the acquisition of the electricity and gas sales company Grupa DUON S.A. (currently Fortum Markets Polska S.A.) in 2016. Fortum booked in 2017 a one-time pre-tax sales gain in Consumer Solution segment totalling EUR 2 million.

In November 2017 Fortum sold its 51% stake in the Norwegian electricity sales company Røyken Kraft AS to the minority shareholder Røyken Energiverk AS. The company was acquired as part of the Hafslund Markets AS group in the restructuring of the ownership in Hafslund.

Divestments of shares in subsidiaries – Impact on financial position

EUR million	2018	2017
Gross divestments of shares in subsidiary companies	147	55
Intangible assets and property, plant and equipment	138	58
Other non-current and current assets	7	6
Liquid funds	12	5
Interest-bearing loans	-108	-3
Other liabilities and provisions	-4	-7
Net assets divested	45	59
Reclassified to participations in associates and joint ventures	20	-
Result from transaction	26	2

3.2.2 Other disposals

In June 2018 Fortum sold its 10% ownership in Hafslund Produksjon Holding AS to Svartisen Holding AS, a Norwegian company owned by the Finnish energy companies Vantaan Energia Oy, Oy Turku Energia – Åbo Energi Ab and Oulun Seudun Sähkö. As part of the restructuring of the Hafslund ownership in 2017, Fortum acquired the ownership in Hafslund Produksjon. The sales price for the shares was EUR 160 million and Fortum booked a sales gain of EUR 77 million in the Generation segment 2018 results.

On 3 August 2017 Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo in connection with the restructuring of the ownership in Hafslund. Fortum booked a one-time tax-free sales gain in Other segment in the 2017 results totalling approximately EUR 324 million including transaction costs, corresponding EUR 0.36 earnings per share.

4 Financial risk management

Risk management framework and objectives, organisation and processes as well as description of risks i.e. strategic, sustainability, financial and operational risks are described in the Risk management part in the Operating and financial review (OFR).

4.1 Commodity market and fuel risks

Fortum's business is exposed to fluctuations in prices and volume 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 approved Hedging Guidelines and Mandates.

4.2 Electricity price and volume risk

Electricity price risk is mainly hedged by entering into electricity derivatives contracts on Nasdaq Commodities exchange. The main objective of hedging is to reduce the effect of electricity price volatility on earnings. Hedging strategies cover several years in the short to medium term and are executed within approved mandates. These hedging strategies are continuously evaluated as electricity and other commodity market prices, the hydrological balance and other relevant parameters change. Hedging of the Generation segment's power sales is performed in EUR on a Nordic level covering both Finland and Sweden, and the currency component of these hedges in the Swedish entity is currently not hedged.

In Russia, electricity prices and capacity sales are the main sources of market risk. The electricity price is highly correlated with the gas price. Exposure is partly mitigated through regulated fixed-price bilateral agreements, but the majority of electricity sales is exposed to spot price risk.

Fortum's sensitivity to electricity market price is dependent on the hedge level for a given time period. As per 31 December 2018, approximately 75% of the Generation segment's estimated Nordic power sales volume was hedged for the calendar year 2019 with a price 31 EUR/MWh and approximately 45% for the calendar year 2020 with a price 29 EUR/MWh. Assuming no changes in generation volumes, hedge ratios or cost structure a 1 EUR/MWh change in the market price of electricity would affect Fortum's 2019 comparable operating profit by approximately EUR 11 million and for 2020 by approximately EUR 25 million. The volume used in this sensitivity analysis is 45 TWh which includes the electricity generation sold to the spot market in Sweden and Finland in the Generation segment without minority owner's shares of electricity or other pass-through sales, and excluding the volume of Fortum's coal-condensing generation. This volume is heavily dependent on price level, the hydrological situation, the length of annual maintenance periods and availability of power plants. Sensitivity is calculated only for electricity market price movements. Hydrological conditions, temperature, wind, CO₂ allowance prices, fuel

prices, economic development, transmission capacity and the import/export situation all affect the electricity price on short-term basis and effects of individual factors cannot be separated.

4.2.1 Sensitivity arising from financial instruments according to IFRS 7

Sensitivity analysis shows the sensitivity arising from financial electricity derivatives as defined in IFRS 7. These derivatives are used for hedging purposes within Fortum. Sensitivities are calculated based on 31 December 2018 (31 December 2017) position. Positions are actively managed in the day-to-day business operations and therefore the sensitivities vary from time to time. Sensitivity analysis includes only the market risks arising from derivatives i.e. the underlying physical electricity sales and purchases are not included. Sensitivity is calculated with the assumption that electricity forward quotations in Nasdaq Commodities and in EEX would change 1 EUR/MWh for the period Fortum has derivatives.

Sensitivity according to IFRS 7

+/- 1 EUR/MWh change in electricity forward quotations, EUR million	Effect	2018	2017
Effect on Profit before income tax	-/+	1	22
Effect on Equity	-/+	56	28

4.2.2 Electricity derivatives

The tables below disclose the Group's electricity derivatives used mainly for hedging electricity price risk. The fair values represent the values disclosed in the balance sheet.

See also ▶ **Note 15** Financial assets and liabilities by categories for accounting principles and basis for fair value estimations and ▶ **Note 8** Fair value changes of derivatives and underlying items in income statement.

Electricity derivatives by instrument 2018

	Volume, TWh				Fair value, EUR million		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Electricity derivatives	29	26	0	55	848	1,712	-864
Total					848	1,712	-864
Netting against electricity exchanges ¹⁾					-701	-701	0
Total					147	1,011	-864

Electricity derivatives by instrument 2017

	Volume, TWh				Fair value, EUR million		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Electricity derivatives	26	24	0	50	360	519	-159
Total					360	519	-159
Netting against electricity exchanges ¹⁾					-234	-234	0
Total					126	285	-159

1) Receivables and liabilities against electricity exchanges arising from standard derivative contracts with same delivery period are netted.

Maturity analysis of commodity derivatives

Amounts in the table are fair values.

EUR million	2018				2017			
	Under 1 year	1–5 years	Over 5 years	Total	Under 1 year	1–5 years	Over 5 years	Total
Electricity derivatives, liabilities	706	305	0	1,011	162	123	0	285
Electricity derivatives, assets	94	53	0	147	90	35	0	126
Other commodity derivatives, liabilities	77	13	0	90	13	3	0	16
Other commodity derivatives, assets	116	24	0	140	36	6	0	43

4.3 Fuel price risks

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. The remaining exposure to fuel price risk is mitigated through fixed-price physical delivery contracts or derivative contracts, such as coal and gas derivatives included in the table above as part of "Other commodity derivatives".

4.4 Emission allowance price and volume risk

Part of Fortum's power and heat generation is subject to requirements of emission trading schemes. Fortum hedges its exposure to these prices and volumes through the use of CO₂ futures. Most of these CO₂ futures are own use contracts valued at cost and some are treated as derivatives in the accounts included in the table above as part of "Other commodity derivatives".

4.5 Liquidity and refinancing risk

Fortum's business is capital intensive and the Group has a diversified loan portfolio mainly consisting of long-term financing denominated in EUR and SEK. Long-term financing is primarily raised by issuing bonds under Fortum's Euro Medium Term Note programme as well as through bilateral and syndicated loan facilities from a variety of different financial institutions.

Financing is primarily raised on parent company level and distributed internally through various internal financing arrangements. For example Fortum's Russian operations are mainly financed via intra group internal long-term RUB denominated loans. The internal RUB loan receivables are hedged via external forward contracts offsetting the currency exposure for the internal lender. On 31 December 2018, 95% (2017: 90%) of the Group's total external financing was raised by the parent company Fortum Corporation.

On 31 December 2018, the total interest-bearing debt was EUR 6,093 million (2017: 4,885) and the interest-bearing net debt was EUR 5,509 million (2017: 988).

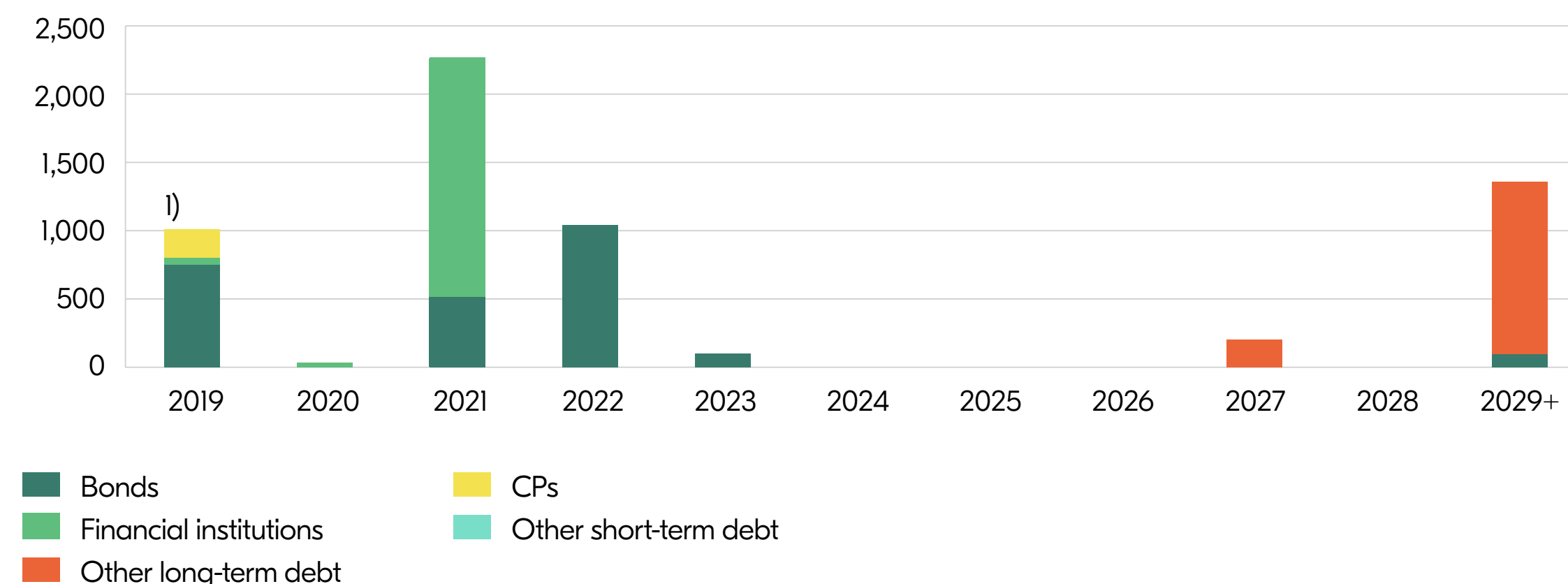
Fortum manages liquidity and refinancing risks through a combination of cash positions and committed credit facility agreements with its core banks. The Group shall at all times have access to cash, marketable securities and unused committed credit facilities including overdrafts, to cover all loans maturing within the next twelve-month period. However, cash/marketable securities and unused committed credit facilities shall always amount to at least EUR 500 million.

On 31 December 2018, loan maturities for the coming twelve-month period amounted to EUR 1,086 million (2017: 766). Liquid funds amounted to EUR 584 million (2017: 3,897) and the total amount of committed and undrawn credit facilities amounted to EUR 1,800 million (2017: 1,800).

Maturity of interest-bearing liabilities

EUR million	2018
2019	1,086
2020	33
2021	2,267
2022	1,042
2023	100
2024 and later	1,565
Total	6,093

Loan maturities per loan type, EUR million as of 31 December 2018



1) In addition Fortum has received EUR 75 million based on Credit Support Annex agreements with several counterparties. This amount has been booked as a short-term liability.

Liquid funds, major credit lines and debt programmes 2018

EUR million	Total facility	Drawn amount	Available amount
Liquid funds			
Cash and cash equivalents			556
Deposits and securities over 3 months			29
Total			584
of which in Russia (PAO Fortum)			317
Committed credit lines			
EUR 1,750 million syndicated credit facility	1,750	-	1,750
Bilateral overdraft facilities	50	-	50
Total	1,800	0	1,800
Debt programmes (uncommitted)			
Fortum Corporation, CP programme EUR 1,000 million	1,000	180	820
Fortum Corporation, CP programme SEK 10,000 million	975	27	948
Fortum Corporation, EMTN programme EUR 8,000 million	8,000	2,448	5,552
Total	9,975	2,655	7,320

Liquid funds, major credit lines and debt programmes 2017

EUR million	Total facility	Drawn amount	Available amount
Liquid funds			
Cash and cash equivalents			3,182
Deposits and securities over 3 months			715
Total			3,897
of which in Russia (PAO Fortum)			246
Committed credit lines			
EUR 1,750 million syndicated credit facility	1,750	-	1,750
Bilateral overdraft facilities	50	-	50
Total ¹⁾	1,800	0	1,800
Debt programmes (uncommitted)			
Fortum Corporation, CP programme EUR 500 million	500	-	500
Fortum Corporation, CP programme SEK 5,000 million	508	-	508
Fortum Corporation, EMTN programme EUR 8,000 million	8,000	2,943	5,057
Total	9,008	2,943	6,065

1) Excluding committed credit facilities for Fortum's offer for Uniper shares

Liquid funds amounted to EUR 584 million (2017: 3,897), including PAO Fortum's bank deposits amounting to EUR 316 million (2017: 231). See also [▶ Note 24](#) Liquid funds.

Maturity analysis of interest-bearing liabilities and derivatives

Amounts disclosed below are non-discounted expected cash flows (future interest payments and amortisations) of interest-bearing liabilities and interest rate and currency derivatives.

EUR million	2018				2017			
	Under 1 year	1–5 years	Over 5 years	Total	Under 1 year	1–5 years	Over 5 years	Total
Interest-bearing liabilities	1,212	3,616	1,792	6,620	895	2,723	1,869	5,487
Interest rate and currency derivatives liabilities	3,665	682	16	4,363	3,210	1,005	4	4,219
Interest rate and currency derivatives receivables	-3,736	-726	-20	-4,482	-3,319	-1,092	-1	-4,413
Total	1,141	3,572	1,788	6,501	785	2,636	1,871	5,293

On the balance sheet date the average rate of outstanding currency and interest rate derivatives done in SEK and RUB was 9.90 and 74.86 respectively.

For further information regarding loans from the State Nuclear Waste Management Fund and Teollisuuden Voima Oyj, see [▶ Note 29](#) Nuclear related assets and liabilities.

4.6 Interest rate risk and currency risk

4.6.1 Interest rate risk

Fortum risk mandates state that the average duration of the net debt portfolio shall always be kept within a range of 12 and 36 months and that the flow risk i.e. changes in interest rates shall not affect the net interest payments of the Group by more than EUR 50 million for the next rolling 12-month period. Within these mandates, strategies are evaluated and developed in order to find an optimal balance between risk and financing cost.

On 31 December 2018, the average duration of the net debt portfolio (including derivatives) was 1.6 years (2017: gross debt 1.5). Approximately 79% (2017: 65%) of the debt portfolio was on a floating rate basis or fixed rate loans maturing within the next 12-month period. The flow risk, measured as the difference between the base case net interest cost estimate and the worst-case scenario estimate for Fortum's net debt portfolio for the coming 12 months, was EUR 13 million (2017: gross debt 4).

The average interest rate for the portfolio consisting mainly of EUR and SEK loans was 1.7% at the balance sheet date (2017: 2.4%). Part of the external loans EUR 686 million (2017: 773) have been swapped to RUB and the average interest cost for these loans, including cost for hedging the RUB, was 8.3% at the balance sheet date (2017: 9.5%). The average interest rate on loans and derivatives on balance sheet date, 31 December 2018, was 2.4% (2017: 3.6%). Average cumulative interest rate on loans and derivatives for 2018 was 3.0% (2017: 3.6%).

The average interest rate on deposits and securities excluding Russian deposits on 31 December 2018 was -0.11% (2017: -0.27%). Liquid funds held by PAO Fortum amounted to EUR 317 million (2017: 246) and the average interest rate for this portfolio was 6.9% at the balance sheet date.

4.6.2 Currency risk

Fortum's policy is to hedge major transaction exposures on a local level in the reporting currency of each legal entity in order to avoid exchange differences in the profit and loss statement. These exposures are mainly hedged with forward contracts. An exception is the Generation segment's hedging of power sales in Sweden where the currency component is currently not hedged.

Translation exposures in the Fortum Group are generally not hedged as the majority of these assets are considered to be long-term strategic holdings. In Fortum this means largely entities operating in Sweden, Russia, Norway and Poland, whose base currency is not euro.

The currency risk relating to transaction exposures is measured using absolute EUR equivalent amounts from each currency. The mandate for the open transaction exposure is EUR 50 million. On 31 December 2018 the open transaction exposure, excluding Generation segment's EUR/SEK exposure, was EUR 6 million (2017: 13). Translation exposure on 31 December 2018 was EUR 7,723 million (2017: 8,212). Had EUR been 5% weaker/stronger on closing date, then the impact from transaction exposure to profit and loss statement would have been EUR +0.3/-0.3 million (2017: +0.7/-0.7 million) and impact from translation exposure to group's equity EUR +386/-386 million (2017: +411/-411 million).

Group Treasury's transaction exposure

EUR million	2018			2017		
	Net Position	Hedge	Open	Net Position	Hedge	Open
RUB	541	-541	0	589	-589	0
SEK	969	-969	0	277	-264	13
PLN	366	-365	0	310	-310	0
NOK	296	-290	6	451	-451	0
INR	93	-93	0	117	-117	0
USD	-117	116	0	-118	118	0
Other	-16	16	0	-41	41	0
Total	2,132	-2,126	6	1,585	-1,572	13

Transaction exposure is defined as already contracted or forecasted foreign exchange dependent items and cash flows. Transaction exposure is divided into balance sheet exposure and cash flow exposure. Balance sheet exposure reflects currency denominated assets and liabilities for example loans, deposits and accounts receivable/payable in currencies other than the company's base currency. Cash flow exposure reflects future forecasted

or contracted currency flows in foreign currency deriving from business activities such as sales, purchases or investments. Net foreign exchange differences from transaction exposure are entered under financial income or expense when related to financial items or when related to accounts receivable/payable entered under items included in operating profit. Conversion differences related to qualifying cash flow hedges are deferred to equity.

Fortum's policy is to hedge balance sheet exposures in order to avoid exchange rate differences in the income statement. The Group's balance sheet exposure mainly relates to financing of non-euro subsidiaries and the fact that the Group's main external financing currency is EUR. For derivatives hedging this balance exposure Fortum does not apply hedge accounting, because they have a natural hedge in the income statement.

Contracted cash flow exposures shall be hedged to reduce volatility in future cash flows. These hedges normally consist of currency derivative contracts, which are matched against the underlying future cash flow according to maturity. Fortum has currency cash flow hedges both with and without hedge accounting treatment under IFRS. Those currency cash flow hedges, which do not qualify for hedge accounting are mainly hedging electricity derivatives. Unrealised hedges create volatility in the operating profit.

Group translation exposure

EUR million	2018			2017		
	Net Investment	Hedge	Open	Net Investment	Hedge	Open
RUB	2,364	-144	2,220	2,673	-173	2,500
SEK	3,704	-244	3,460	4,769	-1,087	3,682
NOK	1,625	-	1,625	1,600	-	1,600
PLN	291	-	291	294	-	294
Other	128	-	128	136	-	136
Total	8,111	-388	7,723	9,472	-1,260	8,212

Translation exposure position includes net investments in foreign subsidiaries and associated companies. Exchange differences arising from the translation of the net investment in foreign entities are taken to equity. The net effect of exchange differences on equity attributable to equity holders mainly from RUB and SEK was EUR -518 million in 2018 (2017: -369). Part of this translation exposure has been hedged and the foreign currency hedge result amounted to EUR 24 million in 2018 (2017: 28).

Interest rate and currency derivatives by instrument 2018

EUR million	2018 Notional amount Remaining lifetimes				2018 Fair value		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Forward foreign exchange contracts	3,240	310	-	3,550	43	20	23
Interest rate swaps	1,515	2,242	225	3,982	159	70	88
Interest rate and currency swaps	383	265	-	648	66	-	66
Total	5,137	2,817	225	8,179	268	90	178
Of which long-term					152	44	108
Short-term					116	46	70

Interest rate and currency derivatives by instrument 2017

EUR million	2017 Notional amount Remaining lifetimes				2017 Fair value		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Forward foreign exchange contracts	2,864	266	-	3,130	56	19	37
Interest rate swaps	305	3,421	102	3,827	205	90	115
Interest rate and currency swaps	311	580	-	892	92	3	89
Total	3,480	4,267	102	7,849	353	112	241
Of which long-term					238	88	151
Short-term					114	24	90

4.7 Credit risk

Fortum is exposed to counterparty risk whenever there is a contractual arrangement with an external counterparty.

Credit risk exposures relating to financial derivative instruments are often volatile. The majority of commodity derivatives are exchange-traded and cleared through clearing houses such as Nasdaq Clearing AB or through clearing banks. Derivatives contracts are also entered into directly with external counterparties and such contracts are limited to high-credit-quality counterparties active on the financial or commodity markets. Currency and interest rate derivative counterparties are limited to investment grade banks and financial institutions. ISDA Master agreements, which include netting clauses and in some cases Credit Support Annex agreements, are in place with most of these counterparties. Commodity derivative counterparties are limited to

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those considered to be creditworthy. Master agreements, such as ISDA, FEMA and EFET, which include netting clauses, are in place with the majority of the counterparties.

Due to the financing needs and management of liquidity, Fortum has counterparty credit exposure toward a number of banks and financial institutions. The majority of the exposure is toward Fortum's key relationship banks, which are highly creditworthy institutions, but also 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. The creditworthiness of banks and financial institutions are monitored so that mitigating actions can be taken as ratings or the financial situation changes. The development of economic sanctions against Russia is followed as part of the monitoring process.

Credit risk 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.

4.7.1 Credit quality of major financial assets

Fortum recognises the loss allowance for expected credit losses on financial assets classified to amortised cost category at each reporting date. Impairment requirements are based on an expected credit loss ("ECL") model which replaces the incurred loss model of IAS 39. The new impairment model is applied to financial assets such as trade receivables, loan receivables and restricted cash given as collateral for commodity exchanges. Expected credit loss is calculated on individual contract basis for deposits, commercial papers and loan receivables. No impairment loss is recognised on cash in bank accounts. The expected credit losses according to this model are based on assessment of the individual counterparty's risk of default. The risk of default is evaluated at each reporting date based on credit ratings to determine if credit risk has increased significantly. A change of credit rating from investment to non-investment grade constitutes a significant increase in credit risk. If the credit risk on the financial asset has not increased significantly since the initial recognition, loss allowance equals to 12 month ECL. If the credit risk on the financial asset has increased significantly since initial recognition, loss allowance equals to the lifetime expected credit losses. There have been no significant increases in credit risk during 2018. The loss allowance for deposits, commercial papers and loan receivables totalled EUR 1 million on December 31, 2018. Amounts for interest-bearing receivables including bank deposits and derivative financial instruments recognised as assets are presented by counterparties.

Credit quality of major financial assets

EUR million	2018		2017	
	Carrying amount	of which past due	Carrying amount	of which past due
Investment grade receivables				
Deposits, commercial papers and cash in bank accounts	168	-	3,348	-
Fair values of interest rate and currency derivatives	268	-	353	-
Fair values of electricity and other commodity derivatives	58	-	56	-
Total investment grade receivables	494	-	3,757	-
Energy exchange receivables				
Fair value of derivatives on Nasdaq Commodities	76	-	37	-
Fair value of derivatives on European Energy Exchange AG	4	-	2	-
Fair value of derivatives on the Polish Power Exchange	75	-	13	-
Total energy exchange receivables	155	-	52	-
Associated companies and joint venture receivables				
Loan receivables	641	-	864	-
Finance lease receivable	0	-	41	-
Fair values of electricity and other commodity derivatives	22	-	9	-
Total associated companies and joint venture receivables	663	-	914	-
Other receivables				
Investments in commercial papers	46	-	249	-
Russian deposits with non-investment grade banks	260	-	141	-
Restricted cash mainly given as collateral for commodity exchanges	379	-	363	-
Receivable from SIBUR related to divested shares of OOO Tobolsk CHP	70	-	102	-
Loan and other interest-bearing receivables	2	-	35	-
Fair values of electricity and other commodity derivatives	53	-	51	-
Total other receivables	810	-	941	-
Total	2,122	-	5,664	-

Deposits and securities

The following tables present bank deposits, commercial papers and fair values of derivatives by rating classes.

EUR million	2018	2017
Counterparties with external credit rating from Standard & Poor's, Fitch and/or Moody's Investment grade ratings		
AAA	-	-
AA+/AA/AA-	62	324
A+/A/A-	30	2,835
BBB+/BBB/BBB-	76	189
Total investment grade ratings	168	3,348
BB+/BB/BB-	260	141
B+/B/B-	-	-
Below B-	-	-
Non-investment grade ratings	260	141
Counterparties without external credit rating from Standard & Poor's, Fitch or Moody's		
Government or municipality	-	-
Fortum Rating 5 - Lowest risk	46	249
Fortum Rating 4 - Low risk	-	-
Fortum Rating 3 - Normal risk	-	-
Fortum Rating 2 - High risk	-	-
Fortum Rating 1 - Highest risk	-	-
No rating	-	-
Total non-rated counterparties	46	249
Total	474	3,738

In addition, cash in other bank accounts totalled EUR 110 million on 31 December 2018 (2017: 159).

See [Note 24](#) Liquid funds.

Interest rate and currency derivatives

EUR million	2018		2017	
	Receivables	Netted amount ¹⁾	Receivables	Netted amount ¹⁾
Counterparties with external credit rating from Standard & Poor's, Fitch and/or Moody's Investment grade ratings				
AAA	-	-	-	-
AA+/AA/AA-	46	26	51	30
A+/A/A-	180	59	292	100
BBB+/BBB/BBB-	42	24	10	9
Total investment grade ratings	268	109	353	140
Total associated companies and joint ventures	-	-	0	0
Counterparties without external credit rating from Standard & Poor's, Fitch or Moody's				
	-	-	-	-
Total	268	109	353	140

1) The netted amount includes the cash received in accordance with Credit Support Annex agreements EUR 75 million (2017: 113).

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Electricity, coal, gas and oil derivatives and CO₂ emission allowances treated as derivatives

EUR million	2018		2017	
	Receivables	Netted amount	Receivables	Netted amount
Counterparties with external credit rating from Standard & Poor's, Fitch and/or Moody's Investment grade ratings				
AAA	-	-	-	-
AA+/AA/AA-	-	-	1	1
A+/A/A-	56	60	53	53
BBB+/BBB/BBB-	2	2	2	1
Total investment grade ratings	58	62	56	55
Non-investment grade ratings				
BB+/BB/BB-	0	0	1	0
B+/B/B-	-	-	0	0
Below B-	-	-	-	-
Total non-investment grade ratings	0	0	1	0
Total associated companies and joint ventures	22	0	9	0
Counterparties without external credit rating from Standard & Poor's, Fitch or Moody's				
Government or municipality	12	0	0	0
Fortum Rating 5 - Lowest risk	12	1	15	10
Fortum Rating 4 - Low risk	13	5	19	12
Fortum Rating 3 - Normal risk	3	1	16	12
Fortum Rating 2 - High risk	3	3	0	0
Fortum Rating 1 - Highest risk	-	-	-	-
No rating	10	3	1	1
Total non-rated counterparties	53	13	51	35
Total	133	75	117	90

For derivatives, the receivable is the sum of the positive fair values, i.e. the gross amount. Netted amount includes negative fair values where a valid netting agreement is in place with the counterparty. When the netted amount is less than zero, it is not included. In cases where a parent company guarantee is in place, the exposure is shown on the issuer of the guarantee.

All counterparties for currency and interest rate derivatives and the majority of counterparties for bank deposits have an external rating from Standard & Poor's, Fitch and/or Moody's credit agencies. The above rating

scale is for Standard & Poor's and Fitch rating categories. For those counterparties only rated by Moody's, the rating has been translated to the equivalent Standard and Poor's and Fitch rating category. For counterparties rated by more than one rating agency, the lowest of the ratings is used.

In the commodity derivatives and commercial paper market, there are a number of counterparties not rated by Standard & Poor's, Fitch or Moody's. For these counterparties, Fortum assigns an internal rating. The internal rating is based on external credit ratings from other credit agencies. The rating from Bisnode is used for Nordic counterparties and for other counterparties the rating from Dun & Bradstreet is used. Governments and municipal companies are typically not rated, and are shown separately. This rating category does not include companies owned by governments or municipalities. Counterparties that have not been assigned a rating by the above listed credit agencies are in the "No rating" category.

5 Capital risk management

Fortum updated its strategy and reconfirmed the dividend policy and long-term financial targets in November 2018. The update was a continuation of the strategy execution towards Fortum's vision "For a cleaner world". The strategy aims at strengthening Fortum's competitiveness and ensuring a benchmark portfolio for the 2020's.

Fortum has undergone a remarkable transformation in recent years, starting with the exit from the regulated power distribution business. This has enabled stronger focus on power and heat generation, through the strategic investment in Uniper, and growth in sustainable bio and waste-based combined heat and power generation. Furthermore, Fortum has created a solid base in solar and wind power, expanded in the consumer sector, and into the recycling and waste business.

Pursuing operational excellence and increased flexibility as well as ensuring value creation from investments and portfolio optimization are the key priorities. Benchmark performance is essential for long-term competitiveness. For the next 2–3 years, Fortum prioritises profit creation from the current business portfolio. This will be achieved through operational excellence and increased flexibility. All sources of flexibility, both flexible generation assets and the demand response of large customers and consumers, will be needed to balance the high degree of volatile renewable generation. Operational excellence and increased flexibility will contribute to improving Fortum's financial performance and cash flows to create additional financial headroom. In addition, Fortum will continue to prioritise and scrutinize capital expenditure. Through these measures, the target is to steer leverage from current net debt to EBITDA ratio towards the long-term target ratio of around 2.5 times. Having a solid investment grade rating is a key priority for Fortum.

Over the recent years Fortum has made several sizeable investments and aims to further improve its financial performance by ensuring value creation from them. The investment in Uniper, currently accounted for as an associated company, will contribute to Fortum's financial performance both through Fortum's share of

Uniper's result and its dividend. As Uniper's largest shareholder, Fortum's ambition is to increase value for both companies and their stakeholders.

In addition, Fortum continues to review its business portfolio in line with its strategic priorities emphasising CO₂-free assets, flexibility, and low operating cost to fit the changing business environment. Fortum will also drive focused growth in the power value chain and seek to build options for significant new businesses for the future.

Financial targets give guidance on Fortum's view of the company's long-term value creation potential, its growth strategy and business activities. The long-term over-the-cycle financial targets are Return on capital employed, ROCE at least 10% and Comparable net debt to EBITDA around 2.5 times. These measures are considered as Alternative Performance Measures.

The dividend policy ensures that shareholders receive a fair remuneration for their entrusted capital, supported by the company's long-term strategy that aims at increasing earnings per share and thereby the dividend. When proposing the dividend, the Board of Directors looks at a range of factors, including the macro environment, balance sheet strength as well as future investment plans. Fortum Corporation's target is to pay a stable, sustainable and over time increasing dividend, in the range of 50–80% of earnings per share, excluding one-off items.

In January 2018, Standard & Poor's downgraded Fortum's long-term credit rating from BBB+ to BBB with Negative Outlook. The short-term rating was affirmed at level A-2. In June 2018, Fitch Ratings downgraded Fortum's long-term credit rating from BBB+ to BBB with Stable Outlook. The short-term rating was downgraded to level F3.

Comparable net debt/EBITDA ratio

EUR million	Note	2018	2017
Interest-bearing liabilities	27	6,093	4,885
BS Less: Liquid funds	24	584	3,897
Net debt		5,509	988
Operating profit		1,138	1,158
Add: Depreciation and amortisation		536	464
EBITDA		1,674	1,623
Less: Items affecting comparability		151	347
Comparable EBITDA		1,523	1,275
Comparable net debt/EBITDA		3.6	0.8

Return on capital employed, %

EUR million	Note	2018	2017
Profit before income tax		1,040	1,111
Interest expenses		148	164
Other financial expenses ¹⁾		26	25
+Interest and other financial expenses		174	189
Profit before taxes + interest and other financial expenses		1,214	1,300
1) Other financial expenses, see also ▶ Note 12 Finance costs-net			
Capital employed			
Total assets		22,409	21,753
Total liabilities		10,332	8,466
- Interest-bearing liabilities		6,093	4,885
- Total interest-free liabilities		4,239	3,581
Capital employed		18,170	18,172
Capital employed at the end of previous period		18,172	18,649
Average capital employed		18,171	18,411
Return on capital employed, %		6.7%	7.1%

See ▶ [Definitions of key figures](#).

6 Segment reporting

ACCOUNTING POLICIES

REVENUE RECOGNITION

Fortum's operations comprise electricity, heating, cooling and waste management services. The revenue streams can be divided into four groups: power sales to wholesale markets, power sales to retail customers, heating sales and waste treatment sales.

Fortum has adopted the new IFRS 15 Revenue from Contracts with Customers standard from 1 January 2018 onwards by applying the modified retrospective approach, which means that comparative information from 2017 is not restated. IFRS 15 transition does not have a significant impact on Fortum's financial statements and accounting policies. See additional information on the transition impacts in [► Note 1 Accounting policies](#).

Revenue is recognized when goods are transferred or services are performed, i.e. when (or as) a performance obligation is satisfied and control of the good or service underlying the particular performance obligations is transferred to the customer. Revenue is shown at the price that Fortum expects to be entitled to and is presented net of rebates, discounts, value-added tax and selective taxes such as electricity tax.

The accounting policies for the different revenue streams are described below.

POWER SALES TO WHOLESALE MARKETS

Physical electricity trades to Nord Pool or to other wholesale markets are made either during the same day or day before the delivery and the duration of the contract is thus very short. The transaction price is the spot price and there are no variable elements. Electricity sales are recognized upon delivery at the price defined in Nordpool or in other wholesale market. When Fortum is acting as an agent in the power trades by granting access to the Nord Pool power trading system, Fortum presents the bilateral trades between Fortum and the customer on a net basis, and only the fee from the service is recorded as revenue.

POWER SALES TO RETAIL CUSTOMERS

Fortum's contracts with the consumer and business customers cover the electricity sales, while the distribution service is delivered by the transmission company operating the local network. There is only one performance obligation, which is to stand-ready to supply electricity to the customer. The transaction price generally includes both a fixed monthly fee and a variable fee that depends on the volume of electricity supplied. As Fortum's promise is to stand ready to deliver electricity, the fixed and variable components are recognised based on the fees chargeable from the customer. If automated meter reading is not available, the electricity consumption between the last meter reading and end of the month is estimated.

HEATING SALES

In many areas the district heating service covers both the distribution and sale of heat. Even if heat is produced by a third party, Fortum is usually responsible for delivering the whole service and is acting as a principal for the heat sales

as well. Fortum has concluded that the distribution and sale of heat are not separate performance obligations and are both covered by the promise to stand-ready to supply heat to the customer. The fees charged from the customer generally comprise a fixed monthly charge and a variable component that is determined based on the volume of heat supplied. In accordance with the IFRS 15 principles, the fixed charge and the variable heat volume charge are allocated and recognised in line with the fees chargeable from the customer. In Russia, Baltics and Poland there are also areas, where Fortum operates only the heat production facilities while some third party is responsible for the distribution of heat. In these areas the performance obligation is to supply heat and revenue is recognised based on the volume of heat that Fortum is entitled to charge from the customer.

WASTE TREATMENT SALES

A majority of the revenues from waste management services arises from the fees charged for receiving the waste from customers (i.e. gate fees). The fee is usually determined based on the volume of waste received and there are no variable elements in the pricing. Fortum is required to treat the waste and this performance obligation is satisfied when the treatment is performed. Transportation of the waste forms another performance obligation. The fees for waste treatment and transportation services are separately agreed in the contract and correspond to the price that would be charged for these services separately. Revenue for transportation service is recognised when service is provided.

Waste treatment business sales includes also various types of soil and landfill site projects which mostly take place at the customer site. The fees charged from the customers are invoiced based on payment schedules agreed with the customer. The customer obtains the benefits of the construction work simultaneously when the construction work proceeds and therefore the projects are recognised over time. The progress of the construction is best measured through the costs incurred or the completed area of the construction site.

COSTS FOR OBTAINING CUSTOMERS

Incremental costs for obtaining new customers as well as renewing existing customer contracts in Consumer Solutions division are capitalised as intangible assets and amortised over the expected contract duration. The sales commission costs were mostly expensed until end of 2017, but are capitalised from 1 January 2018 onwards due to adoption of IFRS 15 Revenue from contracts with customers. See additional information on impact of transition to IFRS 15 in [► Note 1 Accounting policies](#).

NETTING AND INTER-SEGMENT TRANSACTIONS

Generation segment sells its production to Nord Pool and Consumer Solutions buys its electricity from Nord Pool. Eliminations of sales include eliminations of sales and purchases with Nord Pool that are netted on group level on an hourly basis and posted either as revenue or cost depending on if Fortum is a net seller or net buyer during any particular hour. Inter-segment sales, expenses and results for the different business segments are affected by intragroup deliveries, which are eliminated on consolidation. Inter-segment transactions are based on commercial terms.

6.1 Fortum's business structure

Fortum's business divisions are Generation, City Solutions, Consumer Solutions, Russia and Other Operations, which includes M&A and Solar & Wind Development, Technology and New Ventures as well as corporate functions. Fortum's participation in Uniper SE is also reported as part of Other Operations.

In November 2018, Fortum announced that the solar and wind businesses were reorganised and the wind operations became a business area within the Generation division and the solar operations within the City Solutions division. The Russian wind and solar operations continue as a part of the Russia division. The management and segment reporting will be changed from 2019 onwards and 2018 figures will be restated accordingly.

Below is the description of the reportable segments:

		Group			
		Generation	City Solutions	Consumer Solutions	Russia
Divisions					
		Generation	City Solutions	Consumer Solutions	Russia
Reporting segments		The Generation segment comprises power production in the Nordics, including nuclear, hydro, and thermal power production, power portfolio optimisation, trading, industrial intelligence, as well as nuclear services globally.	City Solutions develops sustainable solutions for urban areas into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, operation and maintenance services, biomass, and other circular economy solutions. The business operations are located in the Nordics, the Baltic countries, and Poland. The segment also includes Fortum's 50% holding in Stockholm Exergi (formerly Fortum Värme), which is a joint venture and is accounted for using the equity method.	Consumer Solutions comprises electricity and gas retail businesses in the Nordics and Poland, including the customer service, invoicing and debt collection business. Fortum is the largest electricity retailer in the Nordics, with approximately 2.5 million customers across different brands in Finland, Sweden, Norway and Poland. The business provides electricity and related value-added products as well as new digital customer solutions.	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.
		Generation	City Solutions	Consumer Solutions	Russia

6.2 Segment structure in Fortum

Fortum discloses segment information in a manner consistent with internal reporting to Fortum's Board of Directors and to Fortum Executive Management led by the President and CEO. Fortum has segments based on type of business operations, combined with one segment based on geographical area. Fortum's reportable segments under IFRS are the business divisions Generation, City Solutions, Consumer Solutions and Russia.

6.3 Definitions for segment information

Fortum's segment information discloses the financial measurements used in financial target setting and forecasting, management's follow up of financial performance and allocation of resources in the group's performance management process. These measurements that are considered as Alternative Performance Measures, such as Comparable operating profit and Comparable return on net assets, have been used consistently since 2005.

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Items affecting comparability are disclosed separately in Fortum's income statement to support the understanding of business performance when comparing results between periods. Items classified as Items affecting comparability include accounting effects from valuation according to IFRS that are not arising from the performance of the business operations. Such items include fair valuation of financial derivatives hedging future cash-flows where hedge accounting is not applied according to IFRS 9 and effects from the accounting of Fortum's part of the Finnish Nuclear Waste Fund where the asset in the balance sheet cannot exceed the related provisions according to IFRIC interpretation 5.

The business performance of the operations cannot be compared from one period to another without adjusting for one-time items relating to capital gains, major impairment related items and transaction costs arising from acquisitions. Therefore such items have also been treated as Items affecting comparability. Transaction costs arising from acquisitions of subsidiary shares are included in capital gains and other within items affecting comparability. According to IFRS 3 transaction costs related to the acquisitions of subsidiary shares are recognised in the income statement.

Segment reporting is based on the same accounting principles as the Fortum Group.
See ▶ [Definition of key figures](#).

6.4 Segment information

Income statement

EUR million	Note	Generation ¹⁾		City Solutions ¹⁾		Consumer Solutions		Russia		Other Operations		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Power sales ³⁾		1,767	1,649	119	121	1,547	862	872	837	26	15	4,331	3,483
Heat sales		0	0	604	523	0	0	193	258	0	0	797	782
Waste treatment sales		0	0	211	195	0	0	0	0	0	0	211	195
Other sales		70	28	161	175	212	235	4	6	102	87	549	531
IS Sales		1,837	1,677	1,094	1,015	1,759	1,097	1,069	1,101	129	102	5,888	4,991
Internal eliminations		-2	-15	-37	-19	-11	-3	0	0	-80	-67	-130	-103
Netting of Nord Pool transactions ²⁾												-516	-367
External sales		1,835	1,662	1,057	996	1,748	1,094	1,069	1,101	49	35	5,242	4,520
Comparable EBITDA		762	603	284	262	110	57	417	438	-50	-83	1,523	1,275
IS Depreciation and amortisation		-131	-125	-171	-163	-57	-16	-147	-142	-30	-18	-536	-464
IS Comparable operating profit		631	478	113	98	53	41	271	296	-79	-102	987	811
Impairment charges	7	-4	6	0	0	0	0	0	0	0	0	-4	6
Capital gains and other	7	77	1	0	1	0	2	2	0	23	322	102	326
Changes in fair values of derivatives hedging future cash-flow	7, 8	79	15	-4	3	22	-4	0	0	0	0	98	14
Nuclear fund adjustment	7, 29	-45	1	0	0	0	0	0	0	0	0	-45	1
IS Items affecting comparability	7	108	23	-4	4	22	-2	2	0	23	322	151	347
IS Operating profit		738	501	109	102	75	39	273	295	-57	221	1,138	1,158
IS Share of profit of associated companies and joint ventures	19, 29	-72	-1	74	80	0	0	36	31	0	38	38	148
IS Finance costs - net												-136	-195
IS Income taxes												-181	-229
IS Profit for the year												858	882

1) Sales, both internal and external, include effects from realised hedging contracts. Effect on sales can be negative or positive depending on the average contract price and realised spot price.

2) Netting and eliminations include eliminations of internal sales and netting of Nord Pool transactions. Sales and purchases with Nord Pool, EUR -516 million, are netted on Group level on an hourly basis and posted either as revenue or cost depending on if Fortum is a net seller or net buyer during any particular hour.

3) Power sales contains realised result from commodity derivatives, EUR +70 million, which have not had hedge accounting status under IFRS 9, but have been considered operatively as hedges.

Segment assets and liabilities

EUR million	Note	Generation		City Solutions		Consumer Solutions		Russia		Other Operations		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Non-interest-bearing assets		6,669	6,097	3,555	3,517	1,044	923	2,408	2,812	395	452	14,072	13,801
BS Participations in associated companies and joint ventures	19, 29	846	785	613	611	0	0	495	472	4,024	32	5,978	1,900
Eliminations												-117	-19
Total segment assets		7,515	6,882	4,168	4,128	1,044	923	2,903	3,284	4,419	483	19,933	15,682
Interest-bearing receivables	21											1,092	1,406
BS Deferred tax assets	28											70	73
Other assets												731	696
BS Liquid funds												584	3,897
Total assets												22,409	21,753
Segment liabilities		1,220	1,210	425	400	396	285	114	124	155	207	2,311	2,227
Eliminations												-117	-19
Total segment liabilities												2,194	2,208
BS Deferred tax liabilities	28											720	819
Other liabilities												1,325	554
Total liabilities included in capital employed												4,239	3,581
Interest-bearing liabilities	27											6,093	4,885
BS Total equity												12,077	13,287
Total equity and liabilities												22,409	21,753

Gross investments / divestments

EUR million	Note	Generation		City Solutions		Consumer Solutions		Russia		Other Operations		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Gross investments in shares	19, 3	8	90	32	386	0	486	63	125	3,985	39	4,088	1,125
Capital expenditure	17, 18	186	174	190	170	47	7	54	152	108	187	584	690
of which capitalised borrowing costs		3	3	4	2	0	0	0	7	3	4	10	16
Gross divestments of shares	3	160	0	0	0	0	55	0	0	147	687	306	742

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Comparable operating profit including share of profits from associates and joint ventures and Comparable return on net assets

EUR million	Note	Generation		City Solutions		Consumer Solutions		Russia		Other Operations	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Comparable operating profit		631	478	113	98	53	41	271	296	-79	-102
Share of profit of associated companies and joint ventures	11	-72	-1	74	80	0	0	36	31	0	38
Adjustment for Share of profit of associated companies and joint ventures		94	0	0	0	0	0	0	0	-38	0
Comparable operating profit including share of profits from associates and joint ventures		653	482	186	178	53	41	307	327	-117	-63
Segment assets at the end of the period		7,515	6,882	4,168	4,128	1,044	923	2,903	3,284	4,419	483
Segment liabilities at the end of the period		1,220	1,210	425	400	396	285	114	124	155	207
Comparable net assets		6,295	5,672	3,743	3,728	648	638	2,789	3,161	4,264	276
Comparable net assets average ¹⁾		5,868	5,753	3,700	3,218	671	348	2,976	3,248	2,619	475
Comparable return on net assets, %		11.1	8.4	5.0	5.5	7.8	11.7	10.3	10.1	-4.5	-13.3

1) Average net assets are calculated using the opening balance and end of each quarter values.

Employees

	Generation		City Solutions		Consumer Solutions		Russia		Other Operations		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Number of employees 31 Dec	1,075	1,035	1,956	1,907	1,399	1,543	2,941	3,495	915	805	8,286	8,785
Average number of employees	1,087	1,036	1,940	1,807	1,473	1,180	3,378	3,710	888	774	8,767	8,507

6.5 Group-wide disclosures

The Group's operating segments operate mainly in the Nordic countries, Russia, Poland and other parts of the Baltic Rim area. Generation operates mainly in Finland and Sweden, Consumer Solutions operates mainly in Nordic countries and Poland, whereas City Solutions operates in all of these geographical areas except Russia. Other countries are mainly Estonia, Latvia, Lithuania and India. The home country is Finland.

The information below is disclosing sales by the country in which the customer is located. Assets, capital expenditure and personnel are reported where the assets and personnel are located. Participations in associates and joint ventures are not divided by location since the companies concerned can have business in several geographical areas. Sales by product area is presented in Income statement by segment. Due to the large number of customers and the variety of its business activities, there is no individual customer whose business volume is material compared with Fortum's total business volume.

Sales by market area based on customer location

EUR million	2018	2017
Nordic	3,619	2,827
Russia	1,069	1,102
Poland	331	452
Other countries	223	139
IS Total	5,242	4,520

The Nordic power production is not split by countries since Nordic power production is mainly sold through Nord Pool.

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Capital expenditure by location

EUR million	2018	2017
Finland	215	179
Sweden	89	104
Norway	97	46
Russia	54	152
Poland	86	92
Other countries	43	115
Total	584	690

Segment assets by location

EUR million	2018	2017
Finland	4,589	3,882
Sweden	4,202	4,304
Norway	1,622	1,533
Russia	2,408	2,812
Poland	645	559
Other countries and eliminations	488	692
Non-interest bearing assets	13,955	13,781
BS Participations in associates and joint ventures	5,978	1,900
Total	19,933	15,682

Segment assets in Finland include EUR 590 million (2017: 85) settlements paid for futures.

Number of employees on 31 December by location

	2018	2017
Finland	2,238	2,165
Sweden	981	968
Norway	667	654
Russia	2,941	3,494
Poland	754	827
Other countries	705	677
Total	8,286	8,785

7 Items affecting comparability

EUR million	2018	2017
Impairment charges	-4	6
Capital gains and other	102	326
Changes in fair values of derivatives hedging future cash flow	98	14
Nuclear fund adjustments	-45	1
IS Total	151	347

Fortum uses Alternative performance measures (APMs) in the financial target setting and forecasting, management's follow up of financial performance of segments and the group as well as allocation of resources in the group's performance management process. The business performance of the operations cannot be compared from one period to another without adjusting for items affecting comparability and therefore they are excluded from Comparable operating profit and Comparable EBITDA. The main business performance measurements have been used consistently since 2005.

Definitions are presented in the section [Definitions of key figures](#).

Impairment charges and capital gains

EUR million	Segment	2018	2017
Impairment charges			
Change in dismantling provision for the Finnish coal-fired power plant Inkoo	Generation	-3	6
Other impairment charges	Generation	-1	
Total		-4	6
Capital gains and other			
Hafslund Produksjon Holding AS, associated company	Other Operations	77	
Espoo head office	Other Operations	26	
Hafslund ASA, associated company	Other Operations		324
Transaction costs	Other Operations	-4	-4
Other non-recurring items		2	6
Total		101	326

Fair value changes on derivatives

Changes in the fair values of financial derivative instruments hedging future cash flows that do not qualify for hedge accounting are recognised in items affecting comparability. This is done to improve the understanding of the financial performance when comparing results from one period to another.

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Nuclear waste management fund adjustment

Nuclear fund adjustment includes effects from the accounting principle of Fortum's part of the State Nuclear Waste Management Fund where the assets in the balance sheet cannot exceed the nuclear related provisions according to IFRIC 5. As long as the Fund is overfunded from an IFRS perspective, the effects to the operating profit from this adjustment will be positive if the provisions increase more than the Fund and negative if actual value of the fund increases more than the provisions. In addition adjustments are made for accounting effects from valuation according to IFRS.

Fortum has reassessed assumptions used for all nuclear related assets and liabilities as of 31 December 2018. The increase of the nuclear provision for the Loviisa nuclear power plant in Finland leads to recognition of an additional share of the Finnish nuclear fund. The increase of the provision due to the reassessment and the additional share in the fund are both included in Items affecting comparability. The net profit impact from all these nuclear related adjustments is close to zero. For additional information see [Note 29](#) Nuclear related assets and liabilities

For more information regarding disposals of shares, see [Note 3](#) Acquisitions and disposals. For more information regarding fair value changes of derivatives, see [Note 8](#) Fair value changes of derivatives and underlying items in income statement. For more information regarding nuclear waste management, see [Note 29](#) Nuclear related assets and liabilities.

8 Fair value changes of derivatives and underlying items in income statement

Fair value changes in operating profit presented below are arising from financial derivatives hedging future cash flows where hedge accounting is not applied according to IFRS 9 and the ineffectiveness from cash flow hedges.

Fair value changes of currency derivatives in net financial expenses are arising mainly from balance sheet hedges without hedge accounting status according to IFRS 9, because they are natural hedges of loans and receivables. Fair value change of interest rate hedges without hedge accounting is EUR -8 million (2017: -7).

EUR million	2018	2017
In operating profit		
Fair value changes from derivatives not getting hedge accounting status		
Electricity derivatives	77	-20
Currency derivatives	3	-1
Other commodity derivatives	17	25
Ineffectiveness from cash flow hedges	0	11
Total effect in operating profit	98	14
In finance costs		
Exchange gains and losses on loans and receivables ¹⁾	-100	-51
Fair value changes of derivatives not getting hedge accounting status		
Cross currency interest rate derivatives ¹⁾	8	6
Foreign currency derivatives ¹⁾	91	47
Rate difference on forward contracts	3	-4
Currency derivatives	102	49
Interest rate derivatives	-8	-7
Fair value change of hedging derivatives in fair value hedge relationship	-24	-31
Fair value change of hedged items in fair value hedge relationship	24	31
Total ²⁾	94	42
Total effect in finance costs	-6	-10
Total effect on profit before income tax	92	4

1) Exchange gains and losses on loans, receivables and derivatives totalling EUR -1 million (2017: 2).

2) Including fair value gains and losses on hedged financial instruments and foreign currency and interest rate derivatives EUR -5 million (2017: -12). See also [Note 12](#) Finance costs - net.

9 Other income and other expenses

ACCOUNTING POLICIES

OTHER INCOME

Revenue from activities outside normal operations is reported in other income. This includes recurring items such as rental income and subsidies and non-recurring items such as insurance compensation. In addition, profits from the capital recycling business model are presented in other income, because the business results are realised through divesting the shareholding, either partially or totally.

RESEARCH AND DEVELOPMENT COSTS

Research and development costs are recognised as expense as incurred and included in other expenses in the income statement. If development costs will generate future income, they are capitalised as intangible assets and depreciated over the period of the income streams.

9.1 Other income

EUR million	2018	2017
Rental income	12	6
Insurance compensation	1	2
Subsidies	47	17
Other items	71	28
IS Total	130	55

Increase in subsidies is due to reclassification from sales to other income according to IFRS 15. Other items include a profit of EUR 26 million from the partial sale of Fortum's solar power company in India according to the 'capital recycling' business model. See also [▶ Note 3 Acquisitions and disposals](#).

9.2 Other expenses

EUR million	2018	2017
Operation and maintenance costs	130	125
Property taxes	109	115
IT and telecommunication costs	77	60
Other items	278	276
IS Total	594	576

The major components recorded in other expenses are the external operation and maintenance costs of power and heat plants. Property taxes include taxes relating to directly owned hydropower production EUR 65 million (2017: 81). Other items include expenses relating to properties and other operative expenses.

Principal auditors' fees

EUR million	2018	2017
Audit fees	1.7	1.4
Audit related assignments	0.2	0.2
Tax assignments	0.0	0.0
Other assignments	1.6	1.0
Total	3.5	2.6

Deloitte Oy is the appointed auditor until the next Annual General Meeting, to be held in 2019. Audit fees include fees for the audit of the consolidated financial statements, review of the interim reports as well as the fees for the audit of Fortum Corporation and its subsidiaries. Audit related assignments include fees for assurance of sustainability reporting and other assurance and associated services related to the audit. Tax assignments include fees for tax advice services. Other assignments consist of advisory services.

10 Materials and services

EUR million	2018	2017
Materials	2,296	1,769
Materials purchased from associated companies and joint ventures	372	431
Transmission costs	41	39
External services	86	63
IS Total	2,795	2,301

Materials consists mainly of coal, gas and nuclear fuels used for producing power and heat.

Materials purchased from associated companies consist of nuclear and hydropower purchased at production cost (including interest costs and production taxes) and purchased steam.

Total materials and services include production taxes EUR 62 million (2017: 109), of which nuclear related capacity and property taxes EUR 4 million (2017: 48) and hydro power related property taxes EUR 13 million (2017: 14). Nuclear capacity tax in Sweden was abolished from 1 January 2018 in accordance with the energy agreement adopted by the Swedish Parliament. Taxes related to nuclear and hydro production are included in taxes paid through purchases from associated companies.

See [Note 19](#) Participations in associated companies and joint ventures.

11 Employee benefits

EUR million	2018	2017
Wages and salaries	345	312
Pensions		
Defined contribution plans	34	32
Defined benefit plans	7	8
Social security costs	48	44
Share-based incentives	3	4
Other employee costs	23	23
IS Total	459	423

The compensation package for Fortum employees consists of salaries, fringe benefits, short-term incentives, profit sharing paid to the Personnel Fund (in Finland) and share-based long-term incentives for selected key individuals.

The remuneration policy is determined by the Board of Directors. The Nomination and Remuneration Committee of the Board of Directors discusses, assesses and makes recommendations and proposals to the Board of Directors on the remuneration policy, remuneration of the President and CEO and the Fortum Executive Management and company-wide incentive arrangements for senior management and key personnel as well as monitors these plans annually. Additionally, the Committee contributes to the Group's nomination issues by proposing to the Board of Directors any nominations regarding the members of Fortum Executive Management.

For further information on pensions see [Note 31](#) Pension obligations

11.1 Short-term incentives (STI)

Fortum's STI programme is designed to support the achievement of the company's financial and other relevant targets on an annual basis. As a main principle, all employees are covered by the programme or alternatively by a business specific or a comparable local variable pay arrangement.

The Board of Directors determines the performance criteria and award levels for the Fortum Executive Management. The awards are based on the achievement of Group financial performance, divisional targets and individual targets. The target incentive opportunity is 20% and the maximum incentive opportunity is 40% of the annual base salary. The Board of Directors assesses the performance of the President and CEO and the members of the Fortum Executive Management on a regular basis.

Awards for other employees are based on a combination of Group, divisional, functional and personal targets. The targets are set in annual performance discussions held at the beginning of the year. Awards under the STI programme are paid solely in cash.

11.2 Share-based long-term incentives (LTI)

The purpose of Fortum's share-based long-term incentive programme is to support the delivery of sustainable long-term performance, align the interests of management with those of shareholders and support in committing and retaining key individuals.

Fortum's LTI programme provides participants with the opportunity to earn company shares. Under the LTI programme and subject to the decision of the Board of Directors, a new LTI plan commences annually. The Board of Directors approves participation of the Fortum Executive Management members in each annually commencing

LTI plan. Subject to a decision by the Board of Directors the President and CEO is authorised to decide on individual participants and potential maximum awards for other participants than the Fortum Executive Management in accordance with the nomination guidelines approved by the Board of Directors. Participation in the LTI plan precludes the individual from being a member in the Fortum Personnel Fund.

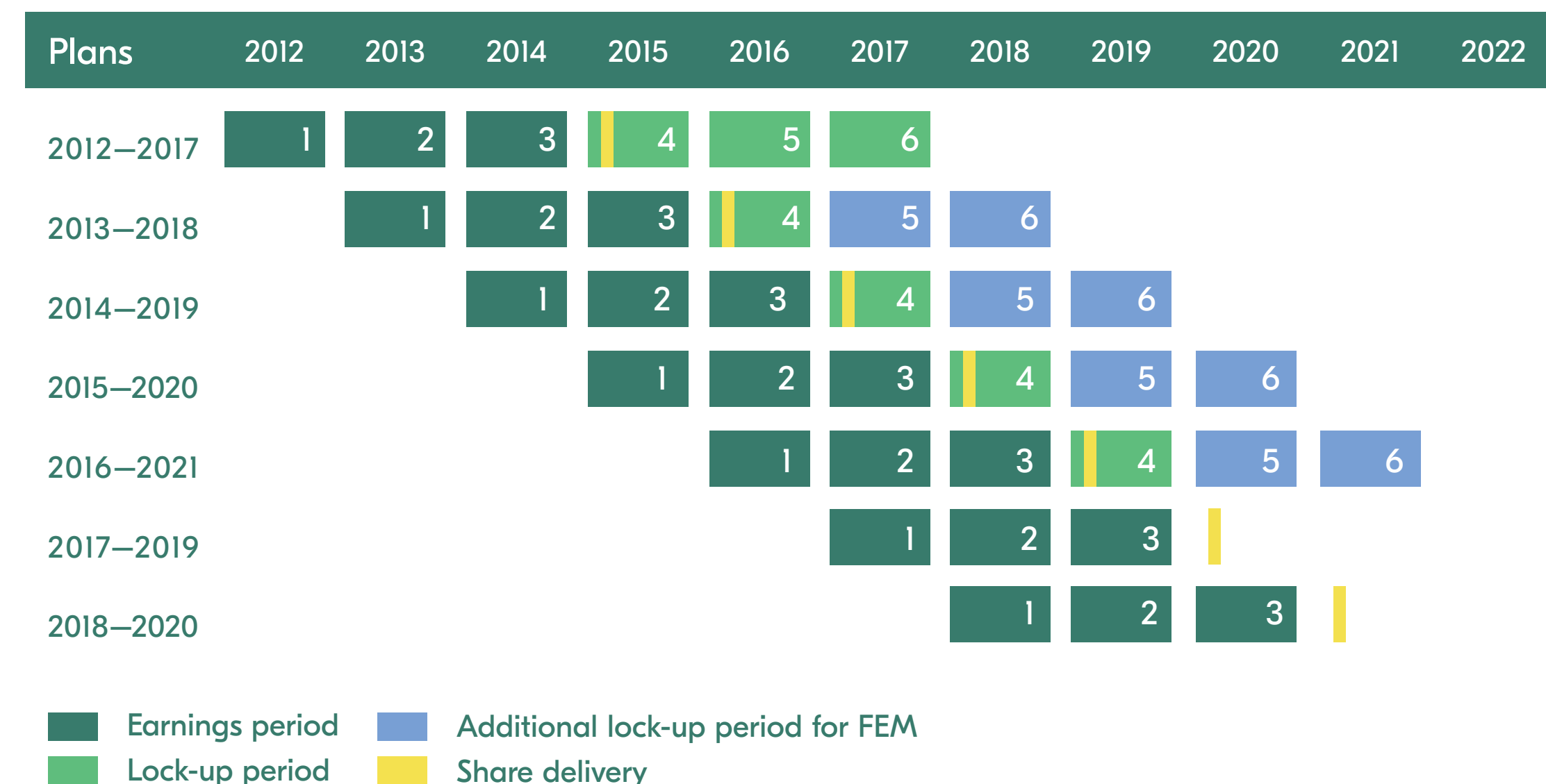
Each LTI plan begins with a three-year earnings period, during which participants may earn share rights if the performance criteria set by the Board of Directors are fulfilled. If the minimum performance criteria are not exceeded, no shares will be awarded. If performance is exceptionally good and the targets approved by the Board of Directors are achieved, the combined gross value of all variable compensation cannot exceed 120% of the person's annual salary in any calendar year. After the earnings period has ended and the relevant taxes and other employment-related expenses have been deducted, participants are paid the net balance in the form of shares.

For LTI plans commencing in 2013 onwards, any shares awarded to Fortum Executive Management members are subject to a three-year lock-up period. Subject to a decision by the Board of Directors, the lock-up period can be reduced to one year for those Fortum Executive Management members whose aggregate ownership of Fortum shares is greater than or equal to their annual salary. For other participants the lock-up period is one year. For LTI plans commencing prior to 2013, the lock-up period is three years for all LTI plan participants. If the value of the shares decreases or increases during the lock-up or retention period, the participant will carry the potential loss or gain. For LTI plans commencing in 2017 and later, the share awards will not be subject to a minimum lock-up period. However, Fortum Executive Management members whose aggregate ownership of Fortum shares does not yet fulfil the shareholding requirement are required to retain at least 50% of the shares received until the required level of shareholding is met.

The Board of Directors has the right to revise the targets set in the incentive plans, deviate from the payment based on achievement of the set earnings criteria, or to discontinue any ongoing incentive plan.

The share plans under the LTI arrangement are accounted for as partly equity- and partly cash-settled arrangements. The earned reward that the participants receive in shares is accounted for as an equity-settled transaction. For participants receiving cash only, the total arrangement is accounted for as cash-settled transaction. The reward is recognised as an expense during the earnings period with a corresponding increase in the liabilities and for the transactions settled in shares in the equity. The social charges related to the arrangement payable by the employer are accrued as a liability. The LTI liability including social charges at the end of the year 2018 was EUR 14 million (2017: 18), including EUR 8 million (2017: 4) recorded in equity.

At year end 2018 approximately 120 key employees are participants in at least one of the six on-going annual LTI plans (plans 2013–2018, 2014–2019, 2015–2020, 2016–2021, 2017–2019 and 2018–2020).



Shares granted

	Plan 2015–2020	Plan 2014–2019	Plan 2013–2018
Grant date	13 Feb 2018	13 Feb 2017	12 Feb 2016
Grant price, EUR	17.04	14.28	12.18
Number of shares granted	73,377	92,321	152,200
Number of shares subsequently forfeited or released from lock-up and other changes	-8,974	-84,807	-150,475
Number of shares under lock-up at the end of the year 2018	64,403	7,514	1,725

In addition to the shares granted above, share rights have been granted to participants that will receive cash payments instead of shares after the lock-up period. The gross amount of share rights outstanding at the end of the year 2018 for plan 2015–2020 was 72,284, for plan 2014–2019 17,793 and for plan 2013–2018 32,066 share rights.

11.3 Fortum Personnel Fund

The Fortum Personnel Fund (for employees in Finland only) has been in operation since year 2000. The Board of Directors determines the criteria for the fund's annual profit-sharing bonus. Persons included in Fortum's long-term incentive schemes are not eligible to be members of this fund. Members of the personnel fund are the permanent and fixed-term employees of the Group. The membership of employees joining the company starts at the beginning of the next month after the employment relationship has been ongoing for five months. An employee is entitled to make withdrawals right from the beginning of the membership. The membership in the fund terminates when the member has received his/her share of the fund in full.

The profit-sharing received by the fund is distributed equally between the members. Each employee's share is divided into a tied amount and an amount available for withdrawal. It is possible to transfer a maximum of 15% of capital from the tied amount to the amount available for withdrawal each year.

The amount available for withdrawal (maximum 15% of the tied amount) is decided each year by the council of the fund and it is paid to members who want to exercise their withdrawal rights.

The fund's latest financial year ended at 30 April 2018 and the fund then had a total of 2,233 members (2017: 2,320). At the end of April 2018 Fortum contributed EUR 2.0 million (2017: 2.8) to the personnel fund as an annual profit-sharing bonus based on the financial results of 2017. The combined amount of members' shares in the fund was EUR 19 million (2017: 21).

The contribution to the personnel fund is expensed as it is earned.

11.4 The President and CEO and the Fortum Executive Management remuneration

The Fortum Executive Management (FEM) consists of ten members, including the President and CEO. The following table presents the total remuneration of the President and CEO and the FEM and takes into account the changes in FEM during the year. The expenses are shown on accrual basis.

Management remuneration

EUR thousand	2018		2017	
	Pekka Lundmark, President and CEO	Other FEM members	Pekka Lundmark, President and CEO	Other FEM members
Salaries and fringe benefits	1,048	3,101	998	3,387
Performance bonuses ¹⁾	228	658	187	589
Share-based incentives ¹⁾	297	1,431	334	1,030
Pensions (statutory)	250	677	231	665
Pensions (voluntary)	252	596	229	712
Social security expenses	36	254	41	257
Total	2,112	6,716	2,019	6,640

1) Based on estimated amounts.

The annual contribution for the President and CEO Pekka Lundmark's pension arrangement is 25% of the annual salary. The annual salary consists of base salary and fringe benefits. The President and CEO's retirement age is 63. In case his assignment is terminated before the retirement age, the President and CEO is entitled to retain the benefits accrued in the arrangement.

For the other members of the FEM the retirement age varies between 62 and 65. According to group policy all new supplementary pension arrangements are defined contribution plans. For the members of the FEM that have defined contribution arrangements, the maximum pension premium percentage can be 25% of the annual salary. Members, who have joined Fortum prior 1 January 2009, are participating in defined benefit pension arrangements, where the benefit is 60–66% of the final pensionable salary with the pension provided by an insurance company or Fortum's Pension Fund.

A pension liability of EUR 624 thousand (2017: 693) related to the defined benefit plans for FEM members has been recognised in the balance sheet. The additional pension arrangement for the President and CEO is a defined contribution pension plan and thus no liability has been recognised in the balance sheet.

In the event that Fortum decides to give notice of termination to the President and CEO, he is entitled to the salary for the notice period (6 months) and a severance pay equal to 12 months' salary. Other FEM members' termination compensation is equal to 6 to 12 months' salary.

Number of shares delivered to the management

The table below shows the number of shares delivered during 2018 and 2017 to the President and CEO and other FEM members under the LTI arrangements. Shares delivered under the plans are subject to a lock-up period under which they cannot be sold or transferred to a third party.

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	2018 ²⁾	2017 ³⁾
FEM members at 31 December 2018		
Pekka Lundmark, CEO	6,453	4,463
Arun Aggarwal (member of FEM from 17 Oct 2018)	-	-
Alexander Chuvaev ¹⁾	15,930	15,480
Per Langer	1,621	2,358
Risto Penttinen	1,767	1,793
Markus Rauramo	2,103	4,185
Arto Rätty	-	-
Mikael Rönöblad (member of FEM from 15 May 2017)	-	-
Sirpa-Helena Sormunen	1,879	1,777
Tiina Tuomela	2,117	2,563
Former FEM members		
Timo Karttinen (member of FEM until 28 February 2017)	N/A	3,626
Kari Kautinen (member of FEM until 30 September 2018)	2,059	2,274
Matti Ruotsala (member of FEM until 31 October 2017)	N/A	4,176
Total	33,929	42,695

1) Estimated number of shares after local tax and tax related deductions. Due to local legislation, share rights will be paid in cash instead of shares after the three-year lock-up period.

2) Share delivery based on share plan 2015–2020.

3) Share delivery based on share plan 2014–2019.

11.5 Board of Directors and management shareholding

On 31 December 2018, the members of the Board of Directors owned a total of 8,540 shares (2017: 9,200), which corresponds to 0.00% (2017: 0.00%) of the company's shares and voting rights.

Number of shares held by members of the Board of Directors

	2018	2017
Board members at 31 December 2018		
Matti Lievonen, Chairman	1,500	1,500
Klaus-Dieter Maubach, Deputy Chairman	-	N/A
Heinz-Werner Binzel	-	-
Eva Hamilton	40	-
Kim Ignatius	4,000	2,400
Essimari Kairisto	-	N/A
Anja McAlister	-	-
Veli-Matti Reinikkala	3,000	3,000
Former Board member		
Sari Baldauf	N/A	2,300
Total	8,540	9,200

The President and CEO and other members of the FEM owned a total of 193,227 shares (2017: 200,667) which corresponds to approximately 0.02% (2017: 0.02%) of the company's shares and voting rights.

Number of shares held by members of the Fortum Executive Management

	2018	2017
FEM members at 31 December 2018		
Pekka Lundmark	67,166	60,713
Arun Aggarwal	-	N/A
Alexander Chuvaev	22,053	14,713
Per Langer	33,191	31,570
Risto Penttinen	12,355	10,588
Markus Rauramo	34,135	32,032
Arto Rätty	-	-
Mikael Rönöblad	-	-
Sirpa-Helena Sormunen	6,656	4,777
Tiina Tuomela	17,671	15,554
Former FEM member		
Kari Kautinen	N/A	30,720
Total	193,227	200,667

11.6 Board remuneration

The Board of Directors comprises five to ten members who are elected at the Annual General Meeting for a one-year term of office, which expires at the end of the first Annual General Meeting following the election. At the end of 2018 the Board of Directors consists of eight members.

The Annual General meeting confirms the yearly compensation for the Board of Directors. Board members are not offered any long-term incentive benefits or participation in other incentive schemes. There are no pension arrangements for the Board members. Social security costs EUR 11 thousand (2017: 14) have been recorded for the fees in accordance with local legislation in respective countries.

Fees for the Board of Directors

EUR thousand	2018	2017
Chairman	75	75
Deputy Chairman	57	57
Chairman of the Audit and Risk Committee ¹⁾	57	57
Members	40	40

1) If not Chairman or Deputy Chairman simultaneously.

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Every member of the Board of Directors receives a fixed yearly fee and additional fees for each meeting attended. A meeting fee of EUR 600 is paid for board and committee meetings. For board members living outside Finland in Europe, the meeting fee is EUR 1,200; for board members living outside Europe, the meeting fee is EUR 1,800. For board and committee meetings held as a telephone conference, the meeting fee is paid as EUR 600 to all members. No fee is paid for decisions made without a separate meeting.

Board members are entitled to travel expense compensation in accordance with the company's travel policy.

Compensation for the Board of Directors

EUR thousand	2018	2017
Board members at 31 December 2018		
Matti Lievonen, Chairman from 28 March 2018	80	49
Klaus-Dieter Maubach, Deputy Chairman from 28 March 2018	54	N/A
Heinz-Werner Binzel	54	57
Eva Hamilton	54	54
Kim Ignatius, Chairman of the Audit and Risk Committee	65	67
Essimari Kairisto (member of the board from 28 March 2018)	42	N/A
Anja McAlister (member of the board from 4 April 2017)	60	47
Veli-Matti Reinikkala	54	58
Former Board members		
Sari Baldauf (Chairman until 28 March 2018)	20	84
Mino Akhtarzand (member of the board until 4 April 2017)	N/A	16
Tapio Kuula (member of the board until 7 November 2017)	N/A	43
Jyrki Talvitie (member of the board until 4 April 2017)	N/A	17
Total	483	492

12 Finance costs - net

EUR million	Note	2018	2017
Interest expense			
Borrowings		-155	-170
Other interest expense		-3	-10
Capitalised borrowing costs	18	10	16
Total		-148	-164
Interest income			
Loan receivables and deposits		31	28
Other interest income		3	3
Total		34	32
Fair value gains and losses on financial instruments	8		
Fair value change of interest rate derivatives not getting hedge accounting status		-8	-7
Fair value change of hedging derivatives in fair value hedge relationship		-24	-31
Fair value change of hedged items in fair value hedge relationship		24	31
Rate difference on forward contracts		3	-4
Fair value gains and losses on other investments		-3	-
Total		-3	-12
Exchange gains and losses			
Loans and receivables	8	-100	-51
Cross currency interest rate derivatives	8	8	6
Foreign currency derivatives	8	91	47
Write down of loan receivables	23	-13	0
Interest income on share of State Nuclear Waste Management Fund	29	7	6
Unwinding of discount on nuclear provisions	29	11	-45
Unwinding of discount on other provisions	30, 31	-3	-3
Other financial income		11	14
Other financial expenses		-26	-25
Total		-15	-50
IS Finance costs - net		-136	-195

Interest expenses include interest expenses on interest-bearing loans, interest on interest rate and currency swaps and forward points on forward foreign exchange contracts hedging loans and receivables. Other interest expenses for 2017 include the interest expense of SEK 69 million (EUR 7 million) relating to the Swedish income tax assessment for 2009–2012. See ▶ **Note 37** Legal actions and official proceedings.

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Interest income includes EUR 12 million (2017: 12) from shareholders' loans to co-owned Finnish and Swedish nuclear companies, and EUR 17 million (2017: 10) from deposits and commercial papers.

Fair value gains and losses on financial instruments include change in clean price of interest rate and cross currency swaps not getting hedge accounting and fair value changes of interest rate derivatives in hedge relationship and hedged items. Accrued interest on these derivatives is entered in interest expenses of borrowings. Fair value gains and losses include also rate difference from forward contracts hedging loans and receivables without hedge accounting.

Exchange gains and losses includes exchange rate differences arising from valuation of foreign currency loans and receivables and exchange rate differences from forward foreign exchange contracts and interest rate and currency swaps.

Fortum has reassessed the assumptions used for all nuclear related assets and liabilities as of 31 December 2018. Unwinding of discount rate on nuclear provisions, EUR 11 million, includes positive effect from changes in assumptions of EUR 49 million. This represents the adjustment to past unwinding of interest. The net profit impact from all the nuclear related adjustments is close to zero. For additional information see [Note 29](#) Nuclear related assets and liabilities.

Other financial income includes EUR 10 million from SIBUR receivable (2017: 14). Other financial expenses includes 20 million replenishment to Nasdaq default fund and 2017 includes EUR 16 million financial cost related to financing commitment for Uniper acquisition.

Fair value changes on interest rate and currency derivatives

EUR million	2018	2017
Interest rate and cross currency swaps		
Interest expenses on borrowings	27	21
Exchange rate difference from derivatives	8	6
Rate difference in fair value gains and losses on financial instruments ¹⁾	-32	-38
Total fair value change of interest rate derivatives in finance costs - net	3	-11
Forward foreign exchange contracts		
Interest expenses on borrowings	-52	-68
Exchange rate difference from derivatives	91	47
Rate difference in fair value gains and losses on financial instruments	3	-4
Total fair value change of currency derivatives in finance costs - net	42	-25
Total fair value change of interest and currency derivatives in finance costs - net	45	-36

1) Fair value gains and losses on financial instruments include fair value changes from interest rate swaps not getting hedge accounting amounting to EUR -8 million (2017: -7) and fair value change of hedging derivatives in fair value hedge relationship EUR -24 million (2017: -31), totalling EUR -32 million (2017: -38).

13 Income tax expense

13.1 Profit before tax

EUR million	2018	2017
Finnish companies	113	76
Swedish companies	396	240
Russian companies	261	269
Other companies	270	526
IS Total	1,040	1,111

Profit before tax split by country represents the respective countries' part of the profit before tax for Fortum Group according to International Financial Reporting Standards (IFRS), i.e. based on the same accounting principles as for the Consolidated Financial Statements. This means that the respective country profits include such items as for example share of profits from associates and effects of accounting for nuclear provisions, which are not included in taxable profits in the local subsidiaries.

13.2 Major components of income tax expense by major countries

EUR million	2018	2017
Current taxes		
Finnish companies	-7	-15
Swedish companies	-3	2
Russian companies	-38	-11
Other companies	-46	-34
Total	-94	-58
Deferred taxes		
Finnish companies	-18	11
Swedish companies	-73	-34
Russian companies	-11	-43
Other companies	15	24
Total	-87	-42
Adjustments recognised for current tax of prior periods		
Finnish companies	-1	-13
Swedish companies ¹⁾	0	-115
Russian companies	0	0
Other companies	0	-1
Total	-1	-129
IS Income tax expense	-181	-229

1) Income tax expense 2017 from the unfavourable decisions in the Administrative Court of Appeal in Sweden relating to the income tax assessments for 2009–2012.

13.3 Income tax rate

The table below explains the difference between the theoretical enacted tax rate in Finland compared to the tax rate in the consolidated income statement.

EUR million	2018	%	2017	%
Profit before tax	1,040		1,111	
Tax calculated at nominal Finnish tax rate	-208	20.0	-222	20.0
Tax rate changes	17	-1.6	6	-0.6
Differences in tax rates and regulations	6	-0.6	5	-0.4
Income not subject to tax	1	-0.1	0	0.0
Tax exempt capital gains	15	-1.5	77	-6.9
Expenses not deductible for tax purposes	-13	1.3	-3	0.3
Share of profit of associated companies and joint ventures	7	-0.7	33	-2.9
Taxes related to dividend distributions	-14	1.4	-10	0.9
Changes in tax valuation allowance related to not recognised tax losses	11	-1.0	-2	0.2
Other items	-3	0.3	3	-0.3
Adjustments recognised for taxes of prior periods	0	0.0	-117	10.5
IS Income tax expense	-181	17.5	-229	20.6

Key tax indicators:

- The weighted average applicable income tax rate for 2018 is 19.4% (2017: 21.7%)
- The effective income tax rate in the income statement for 2018 is 17.5% (2017: 20.6%)
- The comparable effective income tax rate (excluding the share of profits from associates, joint ventures as well as tax exempt capital gains, tax rate changes and other major one-time income tax effects) for 2018 is 22.0% (2017: 18.8%).

See [Definitions of key figures](#).

The major items affecting the effective income tax rate are as follows:

The one-time tax-free capital gain (EUR 100 million) in Ireland and Netherlands 2018 from the sale of Hafslund Produksjon Holding AS and Fortum Sun BV reduced the effective income tax rate with 1.5%. Tax rate changes mainly in Sweden and Norway during 2018 reduced the effective income tax rate with 1.6%.

Effective income tax rate impacted by gains or losses on sale of shares. In many countries like in Finland, Sweden, Netherlands and Norway income on capital gains and losses is treated as tax exempt. The purpose of this is to tax the operative income of the company and avoid taxing the same income twice in case of the sale of the shares. Taxation of capital gains or losses is in line with the taxation of dividend income.

Fortum has had tax audits ongoing during 2018. Based on earlier audits Fortum has received income tax assessments in Belgium for the years 2008–2012. In previous years, Fortum has appealed all assessments received. Based on legal analysis, no provision has been accounted for in the financial statements related to Belgium 2008–2012 tax audits.

For further information regarding the ongoing tax appeals see [Note 37](#) Legal actions and official proceedings.

During 2018 entities primarily in Sweden and Russia used a portion of the deferred tax asset relating to tax loss carry forwards.

Fortum has a material deferred tax liability owing to its investments in non-current assets. These assets are depreciated more rapidly for tax than for accounting purposes resulting in lower current tax payments at the start of an asset's lifetime and higher tax payments at the end of its lifetime. This difference results in a deferred tax liability.

See also [Note 28](#) Income taxes in the balance sheet.

14 Earnings and dividend per share

ACCOUNTING POLICIES

EARNINGS PER SHARE

Basic earnings per share is calculated by dividing the net profit attributable to the owners of the parent company by the weighted average number of ordinary shares in issue during the year, excluding ordinary shares purchased by the Group and held as treasury shares.

DIVIDENDS

Dividends proposed by the Board of Directors are not recognised in the financial statements until they have been approved by the Company's shareholders at the Annual General Meeting.

14.1 Earnings per share

Earnings per share, basic

	2018	2017
IS Profit attributable to owners of the parent (EUR million)	843	866
Weighted average number of shares (thousand)	888,312	888,367
Basic earnings per share (EUR)	0.95	0.98

In the merger of Länsivoima Oyj (former Lounais-Suomen Sähkö Oy) to Fortum Corporation in 2000, those shareholders of Länsivoima Oyj that did not produce their share certificates and did not request their rights to be registered in the book-entry system, received their respective shares of Fortum Corporation as merger consideration to a joint book-entry account opened on their behalf (the "Joint Account"). The Annual General Meeting 2018 of Fortum Corporation decided, that the rights to all such shares entered in the Joint Account and to the rights attached to such shares that had not been requested to be registered in the book-entry system prior to the decision by the Annual General Meeting 2018, were forfeited. In addition to the shares, the rights attached to such shares, such as undrawn dividend, were forfeited. The provisions applicable to treasury shares held by the company were applied to the forfeited shares. On 17 December 2018, Board of Directors decided to cancel all these 72,580 Fortum shares owned by the company without decreasing the share capital. The cancellation was entered in the Trade Register on 21 December 2018. In 2018 these shares had minor impact on weighted average number of shares.

As Fortum currently has no dilutive instruments outstanding, diluted earnings per share is the same as basic earnings per share.

14.2 Dividend per share

Dividends proposed by the Board of Directors are not recognised in the financial statements until they have been approved by the Company's shareholders at the Annual General Meeting.

A dividend in respect of 2018 of EUR 1.10 per share, amounting to a total dividend of EUR 977 million based on the amount of shares registered as at 31 January 2019, is to be proposed at the Annual General Meeting on 26 March 2019. These Financial statements do not reflect this dividend.

A dividend for 2017 of EUR 1.10 per share, amounting to a total of EUR 977 million, was decided in the Annual General Meeting on 28 March 2018 and the dividend was paid on 10 April 2018.

A dividend for 2016 of EUR 1.10 per share, amounting to a total of EUR 977 million, was decided in the Annual General Meeting on 4 April 2017. The dividend was paid on 13 April 2017.

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15 Financial assets and liabilities by categories

ACCOUNTING POLICIES

FINANCIAL ASSETS

Fortum classifies its financial assets in the following categories according to IFRS 9: financial assets at amortised cost, financial assets at fair value through profit and loss and financial assets at fair value through other comprehensive income. The classification is made at initial recognition and depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them.

In order for the financial asset to be classified and measured at amortised cost or fair value through other comprehensive income, it needs to give rise to cash flows that are solely payments of the principal and interest on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level. When the SPPI criteria is not met, financial assets are classified to fair value through profit and loss category.

Financial assets are presented as non-current assets unless they are held for trading, expected to be realized within 12 months at the closing date or they have a maturity of under 12 months at closing date. These are classified as current assets.

FINANCIAL ASSETS AT AMORTISED COST

Fortum measures financial assets at amortised cost when the financial asset is included in the held-to-collect business model with fixed or determinable payments that are payments of amount outstanding or interest on it. They arise when the Group provides money, goods or services directly to a debtor. Financial assets at amortised cost include non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.

Financial assets at amortised cost are subject to impairment. Gains and losses from derecognition of the asset are recognised in profit and loss.

FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT AND LOSS

Financial assets at fair value through profit and loss include financial assets held for trading in the short term, financial assets designated upon initial recognition irrevocably as fair value through profit and loss and financial assets mandatorily recognised at fair value through profit and loss according to IFRS 9. Fortum has also elected to classify equity investments (i.e. other investments) irrevocably as financial assets at fair value through profit and loss. These are mainly comprised of shares in unlisted companies. Derivatives are classified as held for trading unless they are designated as effective hedging instruments.

Gains and losses arising from changes in the fair value are included in the income statement in the period in which they arise.

FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

Other investments designated at fair value through other comprehensive income are not subject to impairment assessment and are never recycled to profit and loss. Dividends received are recognised in profit and loss.

Fortum currently does not have material other investments that have been irrevocably classified as financial assets at fair value through other comprehensive income.

DERECOGNITION

Fortum derecognises financial assets when the rights to receive cash flows from the assets have expired or when it has substantially transferred the risks and rewards of the assets outside of the Group.

IMPAIRMENT

Fortum recognizes an allowance for expected credit losses ("ECL") according to IFRS 9 for financial assets measured at amortised cost. See further information on ECL in [▶ Note 4.7.1](#) Credit quality of major financial assets and in [▶ Note 23](#) Trade and other receivables.

Financial assets measured at fair value through profit or loss are not included in ECL assessment as they are already measured at fair value which takes into account expected credit losses. A financial asset is written-off when there is no reasonable expectation of recovering the contractual cash flows.

FINANCIAL LIABILITIES

All financial liabilities are recognised initially at fair value. In the case of loans and borrowings and payables, incurred transaction costs are deducted. In subsequent periods, all non-derivative financial liabilities are stated at amortised cost; any difference between proceeds (net of transaction costs) and the redemption value is recognised as interest cost over the period of the borrowing using the effective interest rate method.

Derivative financial instruments entered into by the Group, that are not designated as hedging instruments are classified as liabilities at fair value through profit and loss. Amortisation of the effective interest rate and gains and losses of liabilities are recognised in the statement of profit and loss.

Group's financial liabilities include trade and other payables, loans and borrowings and derivative financial instruments. Borrowings or portion of borrowings being hedged with a fair value hedge are recognised at fair value through profit and loss. Derecognition of financial liabilities takes place when the Group has fulfilled the contractual obligations.

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ACCOUNTING FOR DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING ACTIVITIES

Within the ordinary course of business the Group routinely enters into sale and purchase transactions for commodities. The majority of these transactions take the form of contracts that were entered into and continue to be held for the purpose of receipt or delivery of the commodity in accordance with the Group's expected sale, purchase or usage requirements. Such contracts are not within the scope of IFRS 9.

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured at their fair value. The method of recognising the resulting gain or loss depends on whether the derivative is designated as a hedging instrument eligible for hedge accounting, and if so, the nature of the item being hedged. The Group designates certain derivatives as either: (1) hedges of highly probable forecast transactions (cash flow hedges); (2) hedges of the fair value of recognised assets or liabilities (fair value hedge); or (3) hedges of net investments in foreign operations.

The Group documents at the inception of the transaction the relationship between hedging instruments and hedged items, whether the hedged item is one or several risk components separately or in aggregation, as well as its risk management objective and strategy for undertaking various hedge transactions. When applying hedge accounting the Group also documents its assessment, of whether the derivatives that are used in hedging transactions are meeting the hedge accounting effectiveness criteria: (1) there is an economic relationship between the hedged item and the hedging instrument, (2) the effect of credit risk does not dominate the value changes that result from that economic relationship; and (3) the hedge ratio of the hedging relationship is the same as applied in the risk management. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective by assessing the prospective capacity of the derivatives in offsetting changes in fair values or cash flows of hedged items. Hedge accounting is discontinued only when the hedging relationship ceases to meet the hedge effectiveness criteria.

CASH FLOW HEDGE

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges are recognised in equity. Gain or loss relating to the ineffective portion is recognised immediately in the income statement. Amounts accumulated in equity are recycled in the income statement in the periods when the hedged item will affect profit and loss (for instance when the forecast sale that is hedged takes place). However, when the forecast transaction that is hedged results in the recognition of a non-financial asset (for example, inventory) or a liability, the gains and losses previously deferred in equity are transferred from equity and included in the initial measurement of the cost of the asset or liability. When a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity is recognised in the income statement when the forecast transaction is ultimately also recognised in the income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately recognised in the income statement.

Fortum hedges its exposure to commodity market risks and applies hedge accounting by risk components. Hedge accounting is applied to Nordic electricity price risk, where the Nordic area priced physical electricity delivery is commonly divided into three risk components: (1) system price risk, (2) electricity price area difference risk (EPAD) and (3) currency risk. For each of these separate risk components there are specific derivative contracts available, which each are being a perfect hedge without any ineffectiveness for the associated risk component.

FAIR VALUE HEDGE

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the income statement, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is amortised to profit and loss for the period to maturity.

NET INVESTMENT HEDGING IN FOREIGN OPERATIONS

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gain or loss on the hedging instrument relating to the effective portion of the hedge is recognised in equity; the gain or loss relating to the ineffective portion is recognised immediately in the income statement. Gains and losses accumulated in equity are included in the income statement when the foreign operation is disposed of.

DERIVATIVES THAT DO NOT QUALIFY FOR HEDGE ACCOUNTING

Certain derivative instruments hedging future cash flows do not qualify for hedge accounting. Fair value changes of commodity derivative instruments are recognised in items affecting comparability in the income statement, whereas fair value changes of interest rate and currency derivative instruments are recognised in finance costs - net.

Financial assets and liabilities in the tables below are split into categories in accordance with IFRS 9. The categories are further divided into classes which are the basis for valuing a respective asset or liability. Further information can be found in the Notes mentioned in the table.

In the comparative period ending 31.12.2017, financial assets and liabilities are split in accordance with IAS 39. See [Note 1.6](#) Implementation of IFRS 9 and IFRS 15 from 1 January 2018 for more information.

Financial assets by categories 2018 according to IFRS 9

EUR million	Note	Amortised cost	Fair value through profit and loss			Fair value through other comprehensive income	Total financial assets
			Hedge accounting, fair value hedges	Non-hedge accounting	Other investments		
Financial instruments in non-current assets							
Other non-current assets	20	90			49		139
Derivative financial instruments	4						
Electricity derivatives				52		1	53
Interest rate and currency derivatives			122	4		26	152
Other commodity future and forward contracts				24			24
Long-term interest-bearing receivables	21	642		41			683
Financial instruments in current assets							
Derivative financial instruments	4						
Electricity derivatives				84		10	94
Interest rate and currency derivatives				97		19	116
Other commodity future and forward contracts				116		0	116
Trade receivables	23	800					800
Other short-term interest-bearing receivables	21	379		30			409
Liquid funds	24	584					584
Total		2,495	122	448	49	56	3,170

Financial assets by categories 2017 according to IAS 39

EUR million	Note	Loans and receivables	Fair value through profit and loss			Fair value through other comprehensive income	Available-for-sale financial assets	Finance lease	Total financial assets
			Amortised cost	Hedge accounting, fair value hedges	Non-hedge accounting				
Financial instruments in non-current assets									
Other non-current assets	20	74				65			140
Derivative financial instruments	4								
Electricity derivatives				35	0				35
Interest rate and currency derivatives			140	85	13				238
Other commodity future and forward contracts				7					7
Long-term interest-bearing receivables	21	969						41	1,010
Financial instruments in current assets									
Derivative financial instruments	4								
Electricity derivatives				69	21				90
Interest rate and currency derivatives				29	85				114
Other commodity future and forward contracts				36	0				36
Trade receivables	23	638							638
Other short-term interest-bearing receivables	21	395							395
Liquid funds	24	1,928				1,968			3,897
Total		4,004	140	261	119	2,033	41		6,600

Financial liabilities by categories 2018 according to IFRS 9

MEUR	Note	Amortised cost	Fair value through profit and loss		Fair value through other comprehensive income	Total financial liabilities
			Hedge accounting, fair value hedges	Non-hedge accounting	Cash flow hedges	
Financial instruments in non-current liabilities						
Interest-bearing liabilities	27	4,077	930 ¹⁾			5,007
Derivative financial instruments	4					
Electricity derivatives				70	235	305
Interest rate and currency derivatives			25	2	16	44
Other commodity future and forward contracts				13		13
Financial instruments in current liabilities						
Interest-bearing liabilities	27	1,086				1,086
Derivative financial instruments	4					
Electricity derivatives				65	641	706
Interest rate and currency derivatives				45	1	46
Other commodity future and forward contracts				77	0	77
Trade payables	33	334				334
Other liabilities	33	212				212
Total		5,709	995	272	893	7,830

1) Fair valued part of bond in fair value hedge relationship.

Financial liabilities by categories 2017 according to IAS 39

MEUR	Note	Fair value through profit and loss		Fair value through other comprehensive income	Other financial liabilities		Total financial liabilities
		Hedge accounting, fair value hedges	Non-hedge accounting	Cash flow hedges	Amortised costs	Fair value	
Financial instruments in non-current liabilities							
Interest-bearing liabilities	27				3,082	1,037	4,119
Derivative financial instruments	4						
Electricity derivatives			100	23			123
Interest rate and currency derivatives		26	43	19			88
Other commodity future and forward contracts			3				3
Financial instruments in current liabilities							
Interest-bearing liabilities	27				766		766
Derivative financial instruments	4						
Electricity derivatives			131	31			162
Interest rate and currency derivatives			12	12			24
Other commodity future and forward contracts			13	0			13
Trade payables	33				318		318
Other liabilities	33				208		208
Total		26	302	85	4,374	1,037	5,824

16 Financial assets and liabilities by fair value hierarchy

ACCOUNTING POLICIES

Fair value measurements are classified using a fair value hierarchy i.e. Level 1, Level 2 and Level 3 that reflects the significance of the inputs used in making the measurements.

FAIR VALUES UNDER LEVEL 1 MEASUREMENT HIERARCHY

The fair value of some commodity derivatives traded in active markets (such as publicly traded electricity options, coal, gas and oil futures) are market quotes at the closing date.

FAIR VALUES UNDER LEVEL 2 MEASUREMENT HIERARCHY

The fair value of financial instruments including electricity derivatives traded in active markets is based on quoted market prices at the closing date. Known calculation techniques, such as estimated discounted cash flows, are used to determine fair value of interest rate and currency financial instruments. The fair value of interest-rate swaps is calculated as the present value of the estimated future cash flows. The fair value of forward foreign exchange contracts is determined using forward exchange market rates at the closing date. Fair values of options are determined by using option valuation models. The fair value of financial liabilities is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the Group for similar financial instruments. In fair valuation, credit spread has not been adjusted, as quoted market prices of the instruments used are believed to be consistent with the objective of a fair value measurement.

The Group bases the calculation on existing market conditions at each closing date. Financial instruments used in Fortum are standardised products that are either cleared via exchanges or widely traded in the market. Commodity derivatives are generally cleared through exchanges such as for example NASDAQ Commodities and financial derivatives done with creditworthy financial institutions with investment grade ratings.

FAIR VALUES UNDER LEVEL 3 MEASUREMENT HIERARCHY

Investments in unlisted shares classified as other investments for which the fair value can't be reliably measured. Fair value gains and losses of other investments are booked through profit and loss.

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Financial assets

EUR million	Note	Level 1		Level 2		Level 3		Netting ²⁾		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
In non-current assets											
Other investments ¹⁾	20	0	0			49	65			49	65
Derivative financial instruments	4										
Electricity derivatives											
Hedge accounting				23	5			-22	-5	1	0
Non-hedge accounting			0	146	66			-94	-30	52	35
Interest rate and currency derivatives											
Hedge accounting				149	153					149	153
Non-hedge accounting				4	85					4	85
Other commodity future and forward contracts											
Non-hedge accounting		29	8					-5	-1	24	7
Interest-bearing receivables						41	76			41	76
In current assets											
Derivative financial instruments	4										
Electricity derivatives											
Hedge accounting				93	28			-83	-7	10	21
Non-hedge accounting		2	8	585	253			-502	-192	84	69
Interest rate and currency derivatives											
Hedge accounting				19	85					19	85
Non-hedge accounting				97	29					97	29
Other commodity future and forward contracts											
Non-hedge accounting		203	186		1			-87	-151	116	36
Interest-bearing receivables						30	32			30	32
Total		234	202	1,116	705	120	173	-793	-386	675	694

1) Other investments, i.e. shares which are not classified as associated companies or joint ventures, consist mainly of shares in unlisted companies of EUR 49 million (Dec 31, 2017: 65). This includes Fortum's indirect shareholding in Fennovoima of EUR 33 million (Dec 31, 2017: 25). Fair value gains and losses of other investments are booked through profit and loss. Other investments at fair value through other comprehensive income are immaterial.

Other investments include listed shares at fair value of EUR 0 million (2017: 0). The cumulative fair value change booked in Fortum's equity was EUR -2 million (2017: -3).

2) Receivables and liabilities against electricity and other commodity exchanges arising from standard derivative contracts with same delivery period are netted.

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Financial liabilities

EUR million	Note	Level 1		Level 2		Level 3		Netting ²⁾		Total	
		2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
In non-current liabilities											
Interest-bearing liabilities	27			930 ¹⁾	1,037 ¹⁾					930	1,037
Derivative financial instruments	4										
Electricity derivatives											
Hedge accounting				257	28			-22	-5	235	23
Non-hedge accounting				163	131			-94	-30	70	100
Interest rate and currency derivatives											
Hedge accounting				42	45					42	45
Non-hedge accounting				2	43					2	43
Other commodity future and forward contracts											
Non-hedge accounting		18	3	0	1			-5	-1	13	3
In current liabilities											
Derivative financial instruments	4										
Electricity derivatives											
Hedge accounting				724	39			-83	-7	641	31
Non-hedge accounting		1	7	566	315			-502	-192	65	131
Interest rate and currency derivatives											
Hedge accounting				1	12					1	12
Non-hedge accounting				45	12					45	12
Other commodity future and forward contracts											
Non-hedge accounting		158	160	7	4			-87	-151	77	13
Total		177	170	2,737	1,667	0	0	-793	-386	2,121	1,451

1) Fair valued part of bonds in fair value hedge relationship.

2) Receivables and liabilities against electricity and other commodity exchanges arising from standard derivative contracts with same delivery period are netted.

Net fair value amount of interest rate and currency derivatives is EUR 178 million, including assets EUR 268 million and liabilities EUR 90 million. Fortum has cash collaterals based on Credit Support Annex agreements with some counterparties. At the end of December 2018 Fortum had received EUR 75 million from Credit Support Annex agreements. The received cash has been booked as short-term interest-bearing liability.

17 Intangible assets

ACCOUNTING POLICIES

Intangible assets, except goodwill, are stated at the historical cost less accumulated amortisation and impairment losses. They are amortised on a straight-line method over their expected useful lives.

GOODWILL

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of net identifiable assets of the acquired subsidiary, associate or joint venture at the date of acquisition. Goodwill on acquisitions of subsidiaries is included in intangible assets and tested yearly for impairment. Goodwill on acquisition of associates and joint ventures is included in investments in associates and joint ventures and is tested for impairment as part of the overall balance. Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on disposal of an entity include the carrying amount of goodwill relating to the entity sold.

COMPUTER SOFTWARE

Acquired computer software licences are capitalised on the basis of the costs incurred when bringing the software into use. Costs associated with developing or maintaining computer software are recognised as an expense as incurred. Costs that are directly associated with the production of identifiable and unique software products controlled by the Group, and that will generate economic benefits exceeding costs beyond one year, are recognised as intangible assets. Direct costs include the software development employee costs and an appropriate portion of relevant overheads. Computer software costs recognised as assets are amortised over their estimated useful lives (three to five years).

TRADEMARKS AND LICENSES

Trademarks and licences are shown at historical cost less accumulated amortisation and impairment losses, as applicable. Amortisation is calculated using the straight-line method to allocate the cost of trademarks and licences over their estimated useful lives (15–20 years).

CONTRACTUAL CUSTOMER RELATIONSHIPS

Contractual customer relationships acquired in a business combination are recognised at fair value on acquisition date. The contractual customer relations have a finite useful life and are carried at costs less accumulated amortisation. Amortisation is calculated using the straight-line method over the expected duration of the customer relationship.

COSTS FOR OBTAINING CUSTOMERS

Incremental costs for obtaining new customers as well as renewing existing customer contracts are capitalised as intangible assets and amortised over the expected contract duration. The sales commission costs were mostly expensed until end of 2017, but are capitalised from 1 January 2018 onwards due to adoption of IFRS 15 Revenue from contracts with customers. See additional information on adoption of IFRS 15 in [▶ Note 1.6 Implementation of IFRS 9 and IFRS 15 from 1 January 2018](#) and [▶ Note 6 Segment reporting](#).

EMISSION ALLOWANCES

The Group accounts for emission allowances based on currently valid IFRS standards where purchased emission allowances are accounted for as intangible assets at cost, whereas emission allowances received free of charge are accounted for at nominal value. For CO2 emissions from power and heat production, a provision is recognised. CO2 emission costs are settled by returning emission allowances. To the extent that the Group already holds allowances to cover emission costs, the provision is measured at the carrying amount of those allowances. Any shortfall of allowances held over the obligation is valued at the current market value of allowances. The emission cost is recognised in the income statement within materials and services. The sales gains and losses of emission allowances not used for covering the obligation from CO2 emissions, are reported in other income.

IMPAIRMENT TESTING OF NON-FINANCIAL ASSETS

The individual assets' carrying values are reviewed continuously to determine whether there is any indication of impairment. An asset's carrying amount is written down immediately to its recoverable amount if it is greater than the estimated recoverable amount.

In addition, impairment needs are assessed and documented once a year in connection with the long-term forecasting process. Indications for impairment are analysed separately by each division as they are different for each business and include risks such as changes in electricity and fuel prices, regulatory/political changes relating to energy taxes and price regulations etc. Impairment testing needs to be performed if any of the impairment indications exists. Assets that have an indefinite useful life and goodwill, are not subject to amortisation and are tested annually for impairment.

Value in use is determined by discounting the future cash flows expected to be derived from an asset. If it's not possible to estimate the cash flows generated by an individual asset, the impairment testing is performed on a cash-generating unit level. Fortum defines the cash-generating unit as the smallest business area where the tested assets

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generate cash flows that are independent of the cash flows generated by other assets in other business areas. Goodwill is allocated to the cash-generating unit or lowest level of groups of cash-generating units that benefit from the synergies of the acquired goodwill. Cash flow projections are based on the most recent long-term forecast that has been approved by management and the Board of Directors. Cash flows arising from future investments such as new plants are excluded unless projects have been started. The cash outflow needed to complete the started projects is included.

Non-financial assets other than goodwill that suffered an impairment charge are reviewed for possible reversal of the impairment at each reporting date.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSIGNED VALUES AND USEFUL LIVES IN ACQUISITIONS

In an acquisition acquired intangible and tangible assets are fair valued and their remaining useful lives are determined. Management believes that the assigned values and useful lives, as well as the underlying assumptions, are reasonable. Different assumptions and assigned lives could have a significant impact on the reported amounts.

The Group has significant carrying values in property, plant and equipment, intangible assets and participations in associated companies and joint ventures which are tested for impairment according to the accounting policy described above.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSUMPTIONS RELATED TO IMPAIRMENT TESTING

The Group has significant carrying values in property, plant and equipment, intangible assets and participations in associated companies and joint ventures which are tested for impairment according to the accounting policy described in the notes. The recoverable amounts of cash-generating units have been determined based on value in use calculations. These calculations are based on estimated future cash flows from most recent approved long-term forecast. Preparation of these estimates requires management to make assumptions relating to future expectations. Assumptions vary depending on the business the tested assets are in. For power and heat generation business the main assumptions relate to the estimated future operating cash flows and the discount rates that are used in calculating the present value.

Estimates are also made in an acquisition when determining the fair values and remaining useful lives of acquired intangible and tangible assets.

EUR million	Goodwill		Other intangible assets		Total	
	2018	2017	2018	2017	2018	2017
Cost 31 December	613	353	764	386	1,377	739
Impact from change in accounting principle (IFRS 15) ¹⁾	0	0	32	0	32	0
Cost 1 January	613	353	796	386	1,409	739
Translation differences and other adjustments	-27	-27	-21	-20	-49	-47
Acquisition of subsidiary companies	0	286	22	381	22	667
Capital expenditure	0	0	53	18	53	18
Changes in emissions rights	0	0	16	0	16	0
Disposals	0	0	-24	-14	-24	-14
Sale of subsidiary companies	0	0	-6	-2	-6	-2
Reclassifications	3	0	35	15	37	15
Cost 31 December	588	613	869	764	1,457	1,377
Accumulated depreciation 31 December	0	0	313	273	313	273
Impact from change in accounting principle (IFRS 15) ¹⁾	0	0	12	0	12	0
Accumulated depreciation 1 January	0	0	325	273	325	273
Translation differences and other adjustments	0	0	-12	-6	-12	-6
Acquisition of subsidiary companies	0	0	0	30	0	30
Disposals	0	0	-24	-14	-24	-14
Sale of subsidiary companies	0	0	0	-1	0	-1
Reclassifications	0	0	0	2	0	2
Depreciation for the period	0	0	81	30	81	30
Accumulated depreciation 31 December	0	0	370	313	370	313
BS Carrying amount 31 December	588	613	499	451	1,087	1,064

1) See additional information in ▶ [Note 1](#) Accounting policies and ▶ [Note 6](#) Segment reporting

Goodwill

Total goodwill in the balance sheet as of 31 December 2018 amounted to EUR 588 million (2017: 613).

In 2018 Fortum finalised the purchase price allocation of Hafslund Markets Group and Fortum Oslo Varme Group acquired in 2017. The acquisitions enable scale benefits and combination of competences that support Fortum's strategic growth and cash flow ambitions in the Nordic retail electricity and district heating markets and will also enhance the development of new and greener technologies and services. Hafslund Markets is

integrated in Consumer Solutions segment and Fortum Oslo Varme in City Solutions segment. The goodwill from the acquisition is allocated to these segments.

See more information on the acquisitions in [► Note 3 Acquisitions and disposals](#).

Goodwill in groups of cash-generating units

EUR million	2018	2017
Consumer Solutions	226	228
City Solutions	207	208
Russia	154	177
Total carrying amount 31 December	588	613

Other intangible assets

Other intangible assets include capitalised sales commissions for customer acquisition with a carrying amount totalling EUR 63 million at the end of 2018. The carrying amount consists of capitalised sales commission costs totalling EUR 111 million and accumulated depreciations totalling EUR 49 million. The sales commissions were mostly expensed until end of 2017, but are capitalised from 1 January 2018 onwards due to adoption of IFRS 15 Revenue from contracts with customers. See additional information on adoption of IFRS 15 in [► Note 1.6 Implementation of IFRS 9 and IFRS 15 from 1 January 2018 and ► Note 6 Segment reporting](#).

Other items in other intangible assets include customer contracts, costs for software products and software licenses, bought emission rights and emission rights received free of charge, which are recognised to the lower of fair value and historical cost.

17.1 Impairment testing

The impairment testing of the allocated goodwill in 2018 is described below.

Key assumptions used in impairment testing are presented below as well as the basis for determining the value of each assumption. Assumptions are based on internal and external data that are consistent with observable market information, when applicable. The assumptions are determined by management as part of the long-term forecasting process for the Fortum Group.

Key assumptions

Power market development, recycling and waste solutions market development
Regulation framework

Utilisation of power plants and treatment facilities

Forecasted maintenance investments

Discount rate

Basis for determining the value for key assumptions

Historical analysis and prospective forecasting

Current market setup and prospective forecasting (e.g. CSA mechanism in Russia)

Past experience, technical assessment and forecasted market development

Past experience, technical assessment and planned maintenance work

Mostly market-based information

The cash flows used in determining the value in use for each cash generating unit are based on the most recent long-term forecasts and are determined in local currency. The period covered by cash flows is related to the useful lives of the assets being reviewed for impairment. The growth rate used to extrapolate the cash flow projections until the end of assets' useful lives is in line with the assumed inflation. In Russia the generation capacity built after 2007 under the Russian Government's Capacity Supply Agreements receives guaranteed capacity payments for a period of 10 years.

The discount rate takes into account the risk profile of the country in which the cash flows are generated. There have not been any major changes in the discount rate components or in the methods used to determine them. The long-term pre-tax discount rate used were: City Solutions 7.3%, Consumer Solutions 6.9% and Russia 11.4%.

The net operating assets of the CGUs and group of CGUs with allocated goodwill are tested yearly for possible impairment. The tested net operating assets include both the goodwill and fair value adjustments arising from the acquisition. As of 31 December 2018, the recoverable values were greater than their carrying values and therefore no impairments were booked.

The Group has considered the sensitivity of key assumptions as part of the impairment testing. When doing this any consequential effect of the change on the other variables has also been considered. The calculations are most sensitive to changes in estimated future EBITDA levels and changes in discount rate.

Management estimates that a reasonably possible change in the discount rate used or in future earnings would not cause the carrying amount to exceed its recoverable amount in any of the tested units.

Based on the sensitivity analysis done, if the estimated future EBITDA were 10% lower than management's estimates or pre-tax discount rate applied was 10% higher than the one used, the Group would not need to recognise impairment losses for tested items.

18 Property, plant and equipment

ACCOUNTING POLICIES

Property, plant and equipment comprise mainly power and heat producing buildings and machinery buildings, waterfall rights, district heating network and buildings and machinery as well as landfill sites and treatment areas used in waste treatment operations. Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses as applicable in the consolidated balance sheet. Historical cost includes expenditure that is directly attributable to the acquisition of an item and capitalised borrowing costs. Cost may also include transfers from equity of any gains or losses on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Acquired assets on the acquisition of a new subsidiary are stated at their fair values at the date of acquisition.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance expenses are charged to the income statement during the financial period in which they are incurred.

Additionally the cost of an item of property, plant and equipment includes the estimated cost of its dismantlement, removal or restoration.

See [▶ Note 30](#) Other provisions for information about asset retirement obligations and [▶ Note 29](#), Nuclear related assets and liabilities, for information about provisions for decommissioning nuclear power plants.

Land, water areas and waterfall rights are not depreciated since they have indefinite useful lives. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

Hydro power plant buildings, structures and machinery	40–50 years
Thermal power plant buildings, structures and machinery	25 years
Nuclear power plant buildings, structures and machinery	25 years
CHP power plant buildings, structures and machinery	15–25 years
Recycling and waste treatment facility buildings, structures and machinery	15–40 years
Solar and Wind power plant structures and machinery	25 years
District heating network	30–40 years
Other buildings and structures	20–40 years
Other tangible assets	20–40 years
Other machinery and equipment	3–20 years
Other non-current investments	5–10 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each closing date. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. See further information on the impairment testing in [▶ Note 17](#) Intangible assets.

GOVERNMENT GRANTS

Grants from the government are recognised at their fair value when there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants relating to costs are deferred and recognised in the income statement over the period necessary to match them with the costs that they are intended to compensate. Government grants relating to the purchase of property, plant and equipment are deducted from the acquisition cost of the asset and are recognised as income by reducing the depreciation charge of the asset they relate to.

BORROWING COSTS

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.

All other borrowing costs are recognised in profit or loss in the period in which they are incurred.

EUR million	Land and waterfall rights		Buildings, plants and structures		Machinery and equipment		Other tangible assets		Advances paid and construction in progress		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Cost 1 January	2,694	2,765	3,805	3,621	8,335	7,147	163	135	626	824	15,623	14,492
Translation differences and other adjustments	-104	-89	-208	-154	-328	-237	-3	-2	-82	-18	-725	-500
Acquisition of subsidiary companies	0	15	3	161	8	900	0	0	1	32	14	1,109
Capital expenditure	1	2	5	15	3	139	0	0	522	516	532	672
Nuclear asset retirement cost	0	0	0	0	16	-6	0	0	0	0	16	-6
Disposals	0	-1	-33	-21	-30	-40	0	-1	0	1	-64	-62
Sale of subsidiary companies	-1	0	-3	-49	-132	-14	0	0	0	-2	-136	-65
Reclassifications	1	3	281	232	107	445	9	31	-436	-726	-37	-15
Cost 31 December	2,591	2,694	3,851	3,805	7,979	8,335	170	163	631	627	15,222	15,623
Accumulated depreciation 1 January	0	0	1,629	1,550	3,349	2,898	133	114	0	0	5,113	4,562
Translation differences and other adjustments	0	0	-86	-38	-177	-72	-2	-2	0	0	-265	-112
Acquisition of subsidiary companies	0	0	0	52	0	244	0	0	0	0	0	297
Disposals	0	0	-33	-17	-29	-36	0	-1	0	0	-62	-54
Sale of subsidiary companies	0	0	0	-9	0	-3	0	0	0	0	0	-12
Depreciation for the period	0	0	113	112	340	317	3	4	0	1	455	434
Reclassifications	0	0	54	-21	-55	1	1	18	0	0	0	-2
Accumulated depreciation 31 December	0	0	1,678	1,629	3,427	3,349	135	133	0	1	5,241	5,113
BS Carrying amount 31 December	2,591	2,694	2,173	2,175	4,552	4,986	35	29	631	626	9,981	10,510

The decrease in property, plant and equipment arises mainly from translation differences and divestment of a 54% share in a solar power company.

See additional information on the divestment in [► Note 3](#)

Acquisitions and disposals.

Property, plant and equipment that are subject to restrictions in the form of real estate mortgages amount to EUR 158 million (2017: 318). See [► Note 36](#) Pledged assets and contingent liabilities.

18.1 Capitalised borrowing costs

EUR million	Buildings, plants and structures		Machinery and equipment		Advances paid and construction in progress		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
1 January	59	55	175	162	12	41	245	258
Translation differences and other adjustments	-6	-3	-20	-11	-1	-1	-26	-16
Increases / disposals	0	0	0	10	10	6	10	16
Sale of subsidiary companies	0	0	-4	0	0	0	-4	0
Reclassification	3	10	6	22	-9	-34	0	-3
Depreciation	0	-2	-11	-8	0	0	-11	-10
31 December	56	59	146	175	12	12	214	245

Borrowing costs of EUR 10 million were capitalised in 2018 (2017: 16). The interest rate used for capitalisation varied between 2%–6% (2017: 2%–13%).

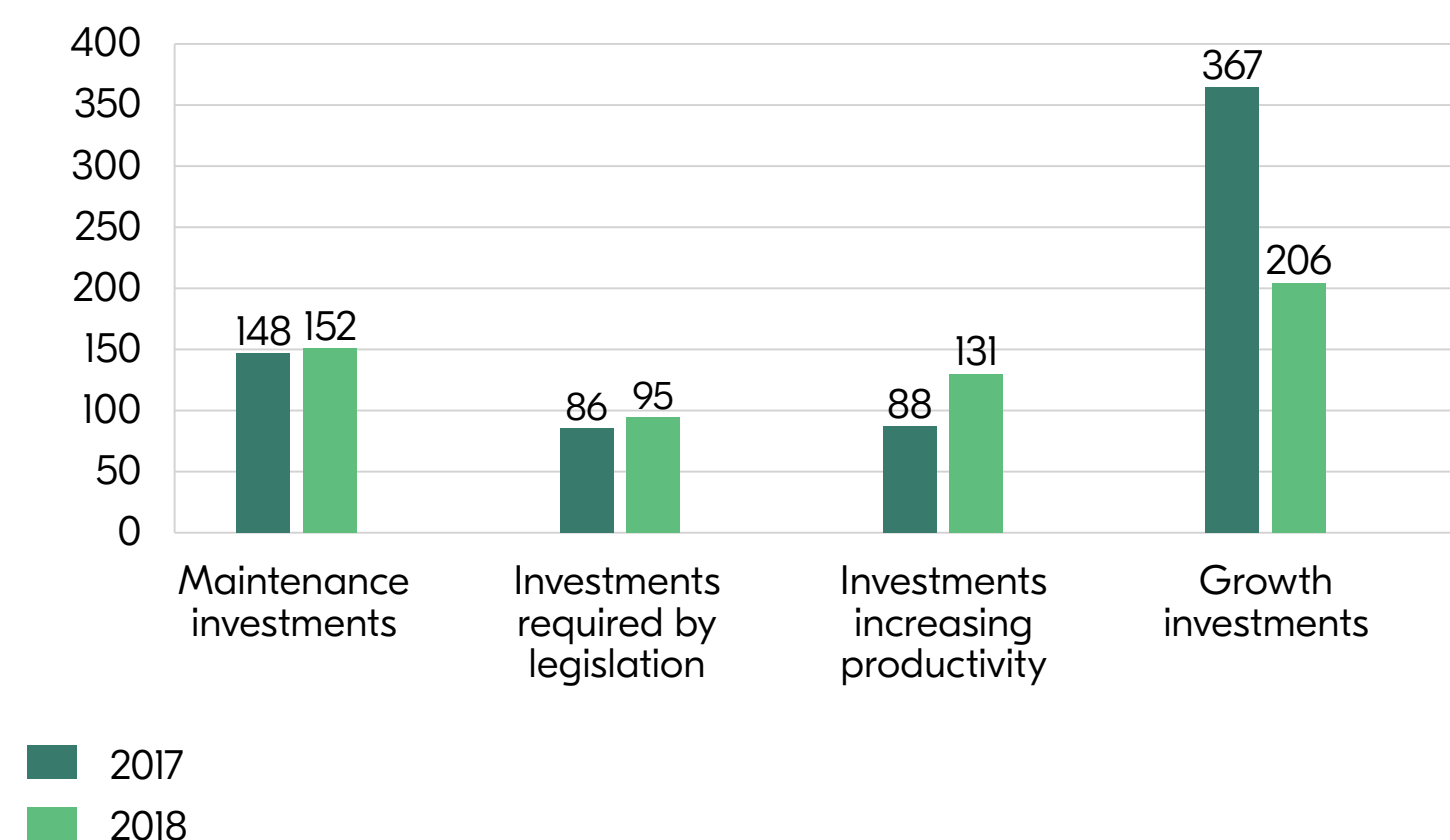
18.2 Capital expenditure ¹⁾

EUR million	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Generation														
Hydropower	20	24	59	62									79	87
Nuclear power	99	84											99	84
Fossil-based electricity														0
Other renewable-based electricity														0
Other	8	3											8	3
Total Generation	126	111	59	62									186	174
City Solutions														
Fossil-based heat	5	2	0				7	3	0		0	0	12	6
Fossil-based electricity								0				0		0
Renewable, of which	34	23	6	1			52	72	9	13	5	4	106	112
waste	20	17	6	1			52	72	9	13	5	3	92	106
biofuels	15	6	0				0		0		0	0	15	7
other	0	0	0				0		0		0	0	0	0
District heat network	14	11	0				18	13	16		11	8	60	32
Other	7	4	1	10			1	1	0		3	3	12	19
Total City Solutions	60	41	6	11			78	90	26	13	19	15	190	170
Consumer Solutions														
Other	9	2	14	2			8	1	16	2			47	7
Total Consumer Solutions	9	2	14	2			8	1	16	2	0	0	47	7
Russia														
Fossil-based electricity					28	81							28	81
Fossil-based heat					22	18							22	18
Renewable-based electricity, wind					5	53							5	53
Total Russia					54	152							54	152
Other														
Renewable-based electricity, wind	2		9	22					51	24			62	45
Renewable-based electricity, solar											19	99	19	99
Other	17	25	1	7			0		4	7	5	3	26	42
Total Other	19	25	9	28			0		55	31	24	102	108	187
Total	215	179	89	104	54	152	86	92	97	46	43	115	584	690
Of which investments in CO₂ free production	135	115	67	84	5	53	0	0	51	24	19	99	278	375

1) Includes capital expenditure to both intangible assets and property, plant and equipment.

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Fortum classifies investments in four main categories, EUR million



18.2.1 Generation

In Finland, Fortum invested EUR 99 million (2017: 84) into the Loviisa nuclear power plant. Fortum invested additionally EUR 79 million (2017: 87) into hydro production, mainly maintenance, legislation and productivity investments. The biggest of these were Åsen refurbishment EUR 10 million in Sweden and Imatra dam safety EUR 10 million in Finland. Investments in CO₂ free production were EUR 178 million (2017: 171).

18.2.2 City Solutions

Growth investments in City Solutions totalled EUR 100 million (2017: 107) in year 2018. The largest investment project in 2018 was the new CHP plant in Zabrze, Poland. Maintenance, legislation and productivity investments totalled EUR 89 million (2017: 62). This amount consists mainly of investments in district heat networks and plants as well as the maintenance of existing CHP plants and measures defined by legal requirements. Investments in CO₂ free production were EUR 15 million (2017: 7)

18.2.3 Consumer Solutions

Investments in Consumer solutions totalled EUR 47 million (2017: 7). The amount consists mainly of sales commissions for customer acquisition that are capitalised starting from the implementation of IFRS 15 in 2018 (see ▶ **Note 1.6** Implementation of IFRS 9 and IFRS 15 from 1 January 2018) and new product development costs.

18.2.4 Russia

Growth investments in Russia totalled EUR 10 million (2017: 96). Additionally, EUR 44 million (2017: 56) was invested in maintenance, legislation and productivity projects. Investments in CO₂ free production were EUR 5 million (2017: 53).

18.2.5 Other

Other Division's investments include solar investments in India EUR 19 million (2017: 99) and investments in wind power production EUR 62 million (2017: 45). Wind investments include Solberg wind park in Sweden, as well as Ånstadblåheia and Sørffjord wind parks in Norway. Other Division invested also in Charge and Drive EUR 9 million (2017: 13), mainly charging poles in Norway. Investments in CO₂ free production were EUR 81 million (2017: 144).

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19 Participations in associated companies and joint ventures

ACCOUNTING POLICIES

The Group's interests in associated companies and jointly controlled entities are accounted for using the equity method of accounting. Assets acquired and liabilities assumed in the investment in associates or joint ventures are measured initially at their fair values at the acquisition date. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill. If the cost of acquisition is less than the fair value of the net assets of the associate or joint venture acquired, the difference is recognised directly in the income statement.

The Group's share of its associates or joint ventures post-acquisition profits or losses after tax and the expenses related to the adjustments to the fair values of the assets and liabilities assumed are recognised in the income statement. The cumulative post-acquisition movements are adjusted against the carrying amount of the investment. The Group's share of post-acquisition adjustments to associates or joint ventures equity that has not been recognised in the associates or joint ventures income statement, is recognised directly in Group's shareholder's equity and against the carrying amount of the investment.

When the Group's share of losses in an associate or a joint venture equals or exceeds its interest in the associate or joint venture, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associate or joint venture.

Unrealised gains on transactions between the Group and its associates or joint ventures are eliminated to the extent of the Group's interest in the associate or joint venture. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates or joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

If more recent information is not available, the share of the profit of certain associated or joint venture companies is included in the consolidated accounts based on the latest available information.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Management is required to make significant judgements when assessing the nature of Fortum's interest in its investees and when considering the classification of Fortum's joint arrangements. In the classification, emphasis has been put on decision-making, legal structure and financing of the arrangements.

Management judgement is required when testing the carrying amounts for participations in associated companies and joint ventures for impairment. See ▶ **Note 17** Intangible assets for more information.

19.1 Principal associated companies and joint ventures

	OKG AB	Forsmarks Kraftgrupp AB	Kemijoki Oy	Uniper SE	TGC-I	TVO Oyj	Stockholm Exergi AB
Nature of the relationship	Co-owned nuclear company	Co-owned nuclear company	Co-owned hydro company	International energy company (listed)	Energy company (listed)	Co-owned nuclear company	Power and heat company
Classification	Associated company	Associated company	Associated company	Associated company	Associated company	Joint venture	Joint venture
Segment	Generation	Generation	Generation	Other	Russia	Generation	City Solutions
Domicile	Sweden	Sweden	Finland	Germany	Russia	Finland	Sweden
Ownership interest, % ¹⁾	46	26	58	49.99	29	25	50
Votes, %	46	26	27	49.99	29	25	50

1) Kemijoki and TVO have different series of shares. The ownership interest varies due to the changes in equity assigned to the different share series. The ownership interests for 2017 for Kemijoki Oy and TVO were 59% and 26% respectively.

Shareholdings in power production companies

Power plants are often built jointly with other power producers. Under the consortium agreements, each owner is entitled to electricity in proportion to its share of ownership or other agreements and each owner is liable for an equivalent portion of costs. The production companies are not profit making, since the owners purchase electricity at production cost including interest cost and production taxes. The share of profit of these companies is mainly IFRS adjustments (e.g. accounting for nuclear related assets and liabilities) and depreciations on fair value adjustments from historical acquisitions since the companies are not profit making under local accounting principles.

Fortum has material shareholdings in such power production companies (mainly nuclear and hydro) that are consolidated using equity method either as associated companies (OKG AB, Forsmarks Kraftgrupp AB and Kemijoki Oy) or in some cases as joint ventures (Teollisuuden Voima Oyj (TVO)).

In Sweden nuclear production company shareholdings are 45.5% ownership of the shares in OKG AB and 25.5% ownership of the shares in Forsmarks Kraftgrupp AB. Excluding non-controlling interests in the subsidiaries, Fortum's participation in the companies are 43.4% and 22.2% respectively, which reflects the share of electricity produced that Fortum can sell further to the market. The minority part of the electricity purchased is invoiced further to each minority owner according to their respective shareholding and treated as pass-through.

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In Finland Fortum has an ownership in power production company TVO that has three series of shares which entitle the shareholders to electricity produced in the different power plants owned by TVO.

Shares in series A entitle to electricity produced in nuclear power plants Olkiluoto 1 and 2 and Fortum owns 26.6% of these shares. Series B entitles to electricity in the nuclear power plant presently being built, Olkiluoto 3, and Fortum's ownership in this share series is 25%. Series C entitles to electricity produced in TVO's share of the coal condensing power plant Meri-Pori, and Fortum's ownership in this share series is 26.6%. The Meri-Pori power plant is accounted for as a joint operation in Fortum. Fortum increased its ownership in Series C of TVO to 100% on 1 January 2019, see [▶ Note 39](#) Events after the balance sheet date.

See also Associated companies in [▶ Note 37](#) Legal actions and official proceedings and Joint operations in the accounting principles in [▶ Note 18](#) Property, plant and equipment.

The most significant hydro production company shareholding is 63.8% of the hydro shares and 28.27% of the monetary shares in Kemijoki Oy. Each owner of hydro shares is entitled to the hydropower production in proportion to its hydro shareholding.

Shareholdings in other principal associated companies and joint ventures

During 2018 Fortum has acquired 49.99% of the shares in Uniper, see [▶ Note 3](#) Acquisitions and disposals. As Uniper is a listed company and publishes its interim reports later than Fortum, Fortum's share of Uniper's results will be accounted for with a time-lag of one quarter with potential adjustments. Fortum's financial statements 2018 includes Fortum's share of Uniper's third quarter results.

Fortum has also other shareholdings in listed companies such as Territorial Generating Company 1 (TGC-1). The shareholding in TGC-1 is accounted for as an associated company as Fortum has representatives in the Board of Directors of the company. The share of profit of TGC-1 is accounted for based on previous quarter information since updated interim information is not normally available.

In Sweden Fortum has a 50% ownership in Stockholm Exergi AB (publ) (previously AB Fortum Värme Holding samägt med Stockholms stad) that is co-owned with the City of Stockholm through Stockholms Stadshus AB. Stockholm Exergi produces district heating, district cooling and electricity and supplies heat and cooling to customers in the Stockholm area.

In August 2017 Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo in connection with the restructuring of the ownership in Hafslund. Hafslund ASA was accounted for as an associated company and the share of profits was accounted for according to the latest quarter information available.

Summarised financial information of the principal associated companies and joint ventures

Impact of different accounting principles presented in the tables below on the line Fair values on acquisitions and different accounting principles include mainly IFRS adjustments for Nuclear liabilities and assets and capitalised borrowing costs in Swedish associates. Fortum records its share of nuclear related assets and liabilities in its nuclear associated companies according to equity method. The basis for recognition is similar as for Loviisa power plant, see accounting principles in [▶ Note 29](#) Nuclear related assets and liabilities.

The purchase price allocation for Uniper acquisition is still on-going and Fortum is evaluating potential fair value adjustments and identifying potential differences in order to align the accounting principles. The purchase price allocation will take time due to the size of transaction and will be completed within the one-year window from the acquisition date according to IFRS. Difference between the acquisition price and Fortum's share of Uniper's net book value acquired is presented below on line 'Difference compared to acquisition price'.

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Summarised financial information of the principal associated companies in 2018

EUR million	Forsmarks		Kemijoki Oy	Uniper SE	
	OKG AB	Kraftgrupp AB		group	TGC-1 group
	31 Dec 2017	31 Dec 2017	31 Dec 2017	30 Sept 2018	30 Sept 2018
Balance sheet					
Non-current assets	581	2,336	472	33,213	1,730
Current assets	273	412	8	27,311	258
Non-current liabilities	760	2,603	352	21,070	309
Current liabilities	82	112	71	27,819	138
Equity	13	34	57	11,635	1,540
Attributable to the owners of the parent	13	34	57	11,027	1,429
Attributable to NCI	0	0	0	608	112
	1 Jan 2017–	1 Jan 2017–	1 Jan 2017–	1 July 2018–	1 Oct 2017–
	31 Dec 2017	31 Dec 2017	31 Dec 2017	30 Sept 2018	30 Sept 2018
Statement of comprehensive income					
Sales	426	637	42	17,091	1,229
Profit or loss	1	-1	-11	1	132
Attributable to the owners of the parent	1	-1	-11	-4	127
Attributable to NCI	0	0	0	5	5
Total comprehensive income	1	-1	-11	-10	130
Attributable to the owners of the parent	1	-1	-11	1	125
Attributable to NCI	0	0	0	-11	5
Reconciliation to carrying amount in the Fortum group					
Group's interest in the equity of the associate at 1 January 2018	6	9	41	-	454
Change in share of profit and OCI items	0	0	-7	0	40
Dividends received	0	0	0	0	-7
Acquired net assets	0	0	0	5,512	0
Translation differences and other adjustments	0	0	0	0	-66
Group's interest in the equity of the associate at 31 December 2018	6	9	33	5,512	421
Fair values on acquisitions and different accounting principles	-6	82	155	-	-18
Difference compared to acquisition price	-	-	-	-1,544	-
Carrying amount at 31 December 2018	0	90	188	3,968	403
Market value for listed shares ¹⁾				4,135	114

1) The market quotation for the TGC-1 share is affected by the low liquidity of the TGC-1 shares in the Russian stock exchanges. During 2018 trading volumes of TGC-1 shares in relation to the number of shares of the company were approximately 11% (2017: 10%).

Summarised financial information of the principal associated companies in 2017

EUR million	Forsmarks		Hafslund ASA		TGC-1 group
	OKG AB	Kraftgrupp AB	Kemijoki Oy	group 1)	
	31 Dec 2016	31 Dec 2016	31 Dec 2016	30 June 2017	30 Sept 2017
Balance sheet					
Non-current assets	628	2,367	465	2,329	1,938
Current assets	428	466	12	325	312
Non-current liabilities	961	2,599	264	1,091	420
Current liabilities	82	198	144	585	168
Equity	13	36	69	978	1,663
Attributable to the owners of the parent	13	36	69	978	1,540
Attributable to NCI	0	0	0	0	123
	1 Jan 2016–	1 Jan 2016–	1 Jan 2016–	1 Oct 2016–	1 Oct 2016–
	31 Dec 2016	31 Dec 2016	31 Dec 2016	30 June 2017	30 Sept 2017
Statement of comprehensive income					
Revenue	430	756	55	1,240	1,289
Profit or loss from continuing operations	1	0	-10	118	81
Other comprehensive income	0	0	0	-12	1
Total comprehensive income	1	0	-10	105	82
Attributable to the owners of the parent	1	0	-10	105	83
Attributable to NCI	0	0	0	0	-1
Reconciliation to carrying amount in the Fortum group					
Group's interest in the equity of the associate at 1 January 2017	6	10	48	349	471
Change in share of profit and OCI items	0	0	-6	36	32
Dividends received	0	0	0	-23	-5
Divestments	0	0	0	-363	0
Translation differences and other adjustments	0	-1	0	1	-44
Group's interest in the equity of the associate at 31 December 2017	6	9	41	0	454
Fair values on acquisitions and different accounting principles	16	92	157	0	-25
Carrying amount at 31 December 2017	22	101	197	0	429
Market value for listed shares ¹⁾					196

1) Divested in August 2017, see also ▶ Note 3 Acquisition and disposals.

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Summarised financial information of the principal joint ventures in 2018 and 2017

EUR million	2018		2017	
	TVO Oyj group 30 Sept 2018	Stockholm Exergi AB group 31 Dec 2018	TVO Oyj group 30 Sept 2017	Stockholm Exergi AB group 31 Dec 2017
Balance sheet				
Non-current assets	7,231	2,581	6,900	2,642
Current assets	420	313	606	266
of which cash and cash equivalents	115	15	192	15
Non-current liabilities	5,108	1,271	5,159	1,461
of which non-current interest-bearing liabilities	4,033	903	4,186	1,071
Current liabilities	776	418	673	230
of which current financial liabilities	603	246	484	112
Equity	1,767	1,205	1,674	1,216
Attributable to the shareholders of the company	1,767	1,205	1,674	1,216
Attributable to NCI	0	0	0	0
Statement of comprehensive income	1 Oct 2017–30 Sept 2018	1 Jan 2018–31 Dec 2018	1 Oct 2016–30 Sept 2017	1 Jan 2017–31 Dec 2017
Revenue	338	683	343	689
Depreciation and amortisation	-55	-138	-56	-139
Interest income	12	0	14	0
Interest expense	-44	-17	-46	-17
Income tax expense or income	0	-5	0	-35
Profit or loss from continuing operations	-10	113	-4	125
Other comprehensive income	7	2	9	-7
Total comprehensive income	-2	116	5	118
Attributable to the shareholders of the company	-2	116	5	117
Attributable to NCI	0	0	0	0
Reconciliation to carrying amount in the Fortum group				
Group's interest in the equity of the joint venture at 31 December	280	608	279	588
Impact from change in accounting principle (IFRS 9) ¹⁾	145	0	-	-
Group's interest in the equity of the joint venture at 1 January	425	608	279	588
Change in share of profit and from OCI items	-1	58	0	59
Dividends received	0	-39	0	-21
Investments	25	0	-	-
Divestments and capital returns	-2	0	0	0
Translation differences and other adjustments	0	-25	0	-18
Group's interest in the equity of the joint venture at 31 December	448	602	280	608
Fair values on acquisitions and different accounting principles ²⁾	-9	-68	-11	-75
Carrying amount at 31 December	439	535	269	533

 1) See additional information in ▶ [Note 1.6](#) Implementation of IFRS 9 and IFRS 15 from 1 January 2018.

 2) Impact of different accounting principles include mainly IFRS adjustments for Nuclear liabilities and assets and capitalised borrowing costs. Fortum records its share of nuclear related assets and liabilities in its nuclear associated companies according to equity method. The basis for recognition is similar as for Loviisa power plant, see accounting principles in ▶ [Note 29](#) Nuclear related assets and liabilities.

19.2 Participations and shares of profits in associated companies and joint ventures

Participations in associated companies and joint ventures in the balance sheet

EUR million	2018	2017
Principal associates	4,649	749
Principal joint ventures	973	802
Other associates	60	121
Other joint ventures	295	229
BS Carrying amount 31 December	5,978	1,900

Changes in participation during the year

EUR million	2018		2017	
	Associated companies	Joint ventures	Associated companies	Joint ventures
Historical cost				
Historical cost 31 December	680	598	864	636
Impact from change in accounting principle (IFRS 9) ¹⁾	20	145		
Historical cost 1 January	699	743	864	636
Translation differences and other adjustments	-33	-17	-30	-8
Investments	3,969	97	83	52
Reclassifications ²⁾	-3	20	-1	-81
Divestments and capital returns	-83	-12	-236	0
Historical cost 31 December	4,549	831	680	598
Equity adjustments				
Equity adjustments 1 January	190	432	289	324
Translation differences and other adjustments	-29	-19	-18	-13
Share of profits of associates and joint ventures	-32	71	73	75
Reclassifications ²⁾	41	0	1	81
Divestments	0	0	-128	0
Dividends received	-10	-51	-29	-29
OCI items associated companies and joint ventures	1	5	2	-5
Equity adjustments 31 December	160	437	190	432
Carrying amount at 31 December	4,709	1,269	870	1,031

1) See additional information in ▶ [Note 1.6 Implementation of IFRS 9 and IFRS 15 from 1 January 2018](#).

2) On 31 August 2018, Fortum sold a 54% share of its solar power company and as a consequence the subsidiary was reclassified as a joint venture.

During 2018 Fortum received EUR 61 million (2017: 58) in dividends from associates and joint ventures of which EUR 39 million (2017: 21) was received from Stockholm Exergi. Dividends received during 2017 include EUR 23 million from Hafslund ASA.

For information about investments and divestments of shares in associated companies, see ▶ [Note 3 Acquisitions and disposals](#).

Share of profit of associates and joint ventures

EUR million	2018	2017
Principal associates		
OKG AB	-58	8
Forsmarks Kraftgrupp AB	-7	2
Kemijoki Oy	-9	-9
Uniper SE	-2	0
TGC-1	40	32
Hafslund ASA (divested in August 2017)	-	39
Principal associates, total	-35	73
Principal joint ventures		
Stockholm Exergi AB	61	66
TVO Oyj	1	-4
Principal joint ventures, total	62	63
Other associates	3	0
Other joint ventures	9	12
IS Total	38	148

There are no unrecognised share of losses of associated companies and joint ventures.

Fortum has reassessed assumptions used for all nuclear related assets and liabilities as of 31 December 2018. Assumptions have been changed for the respective balances of the co-owned nuclear companies in Finland and Sweden, i.e. Teollisuuden Voima Oyj (TVO), Oskarshamn Kraft Grupp AB (OKG), and Forsmarks Kraftgrupp AB. The total impact of the change to share of profit from these associated companies and joint ventures was EUR -37 million, net of tax, and including additional nuclear waste liability related to legacy waste obligations for Swedish nuclear. The net profit impact from all these nuclear related adjustments is close to zero. For additional information see ▶ [Note 29 Nuclear related assets and liabilities](#).

19.3 Transactions and balances

Associated company transactions

EUR million	2018	2017
Sales to associated companies	0	1
Interest income on loan receivables to associated companies	12	12
Purchases from associated companies	256	319

Purchases from associated companies include mainly purchases of nuclear and hydro power at production cost including interest costs and production taxes.

Associated company balances

EUR million	2018	2017
Receivables from associated companies		
Long-term interest-bearing loan receivables	581	656
Trade receivables	1	1
Other receivables	0	1
Liabilities to associated companies		
Long-term loan payables	0	2
Trade payables	2	0

For more info about receivables from associated companies, see [Note 21](#) Interest-bearing receivables.

Joint venture transactions

EUR million	2018	2017
Sales to joint ventures	39	109
Interest income on joint venture loan receivables	0	1
Purchases from joint ventures	124	153

Purchases from joint ventures include mainly purchases of nuclear and hydro power at production cost including interest costs and production taxes.

Joint venture balances

EUR million	2018	2017
Receivables from joint ventures		
Long-term interest-bearing loan receivables	60	208
Finance lease receivables from joint ventures	0	41
Trade receivables	53	23
Other receivables	18	17
Liabilities to joint ventures		
Long-term loan payables	293	285
Trade payables	31	19
Other payables	14	7

Change in long-term interest-bearing loan receivables, see [Note 1.6](#) Implementation of IFRS 9 and IFRS 15 from 1 January 2018.

For more info about interest-bearing receivables from joint ventures, see [Note 21](#) Interest-bearing receivables.

20 Other non-current assets

EUR million	2018	2017
Other investments	49	65
Interest-free receivables	90	74
BS Total	139	140

Other investments, i.e. shares which are not classified as associated companies or joint ventures, consist mainly of shares in unlisted companies of EUR 49 million (2017: 65). This includes Fortum's indirect shareholding in Fennovoima of EUR 33 million (Dec, 31 2017: 25). Fair value gains and losses of Other investments are booked through profit and loss. Other investments at fair value through other comprehensive income are immaterial.

21 Interest-bearing receivables

EUR million	2018		2017	
	Carrying amount	Fair value	Carrying amount	Fair value
Long-term loan receivables from associated companies	581	601	656	689
Long-term loan receivables from joint ventures	60	68	208	229
Finance lease receivables from joint ventures	0	0	41	41
Other long-term interest-bearing receivables	43	43	106	111
BS Total long-term interest-bearing receivables	683	712	1,010	1,071
Other short-term interest-bearing receivables	409	409	395	395
Total short-term interest-bearing receivables	409	409	395	395
Total	1,092	1,121	1,406	1,466

Long-term interest-bearing receivables include receivables from associated companies and joint ventures EUR 641 million (Dec 31, 2017: 905). These receivables include EUR 575 million (Dec 31, 2017: 638) from Swedish nuclear companies, OKG AB and Forsmarks Kraftgrupp AB, which are mainly funded with shareholder loans, pro rata each shareholder's ownership.

Finance lease relating to heat pipelines in Tyumen area, which are leased to joint venture YUSTEK, has been reassessed and classified as operating lease.

Interest-bearing receivables includes also EUR 70 million (2017: 102) from SIBUR, a Russian gas processing and petrochemicals company regarding divested shares of OOO Tobolsk CHP.

Short-term interest-bearing receivables include EUR 379 million (2017: 363) restricted cash mainly given as collateral for commodity exchanges. The new European Market Infrastructure Regulation (EMIR) came into force in 2016 requiring fully-backed guarantees.

For further information regarding credit risk management, see ▶ [Note 4.7](#) Credit risk.

Interest-bearing receivables

EUR million	Effective interest rate, %	Carrying amount 2018	Repricing			Fair value 2018	Carrying amount 2017	Fair value 2017
			Under 1 year	1–5 years	Over 5 years			
Long-term loan receivables	2.5	683	633	4	45	712	1,010	1,071
Short-term receivables	0.4	409	409	-	-	409	395	395
Total interest-bearing receivables	1.7	1,092	1,042	4	45	1,121	1,406	1,466

22 Inventories

ACCOUNTING POLICIES

Inventories mainly consist of fuels consumed in the production process or in the rendering of services. Inventories are stated at the lower of cost and net realisable value being the estimated selling price for the end product, less applicable variable selling expenses and other production costs. Cost is determined using the first-in, first-out (FIFO) method.

Inventories which are acquired primarily for the purpose of trading are stated at fair value less selling expenses.

EUR million	2018	2017
Nuclear fuel	72	83
Coal	52	45
Oil	7	7
Biofuels	4	3
Materials and spare parts	56	54
Other inventories	43	25
BS Total	233	216

Write-downs in inventories amounted to EUR 6 million (2017: 0).

23 Trade and other receivables

ACCOUNTING POLICIES

Trade receivables include revenue based on an estimate of electricity, heat and cooling already delivered but not yet measured and not yet invoiced.

Impairment losses for trade receivables are calculated according to the expected credit loss (“ECL”) model. For large trade receivables, ECL is calculated for the individual customer based on the probability of default and expected recovery rate. These estimates are based on the customer’s rating and adjusted if there are indications of decreased creditworthiness, e.g. based on payment behaviour. ECL for trade receivables from small customers are calculated on portfolio basis by country and business segment. The impairment reservations are based on historical analysis of losses when possible, or on average default rates for customers based on externally available information. These rates be adjusted if there are any forward-looking indicators showing changes in expected credit losses. Trade receivables overdue more than 180 days are generally considered to be credit-impaired and reservations are made for the full amount, adjusted for expected recovery rates.

EUR million	2018	2017
Trade receivables	800	743
Accrued interest income	1	1
Accrued income and prepaid expenses	59	29
Cash settlements for futures	592	85
Other receivables	168	139
BS Total	1,620	997

Cash settlements for futures has increased mainly due to higher electricity prices for the hedging period. Futures are cash settled daily on Nasdaq Commodities exchange.

23.1 Trade receivables

Ageing analysis of trade receivables

EUR million	2018			2017	
	Gross	Expected credit loss allowance	Expected credit loss rate, %	Gross	Impaired
Not past due	712	2	0	632	2
Past due 1–30 days	63	2	3	54	2
Past due 31–90 days	17	4	24	36	3
Past due 91–180 days	15	11	73	19	3
Past due more than 181 days	77	66	86	68	57
Total	885	85	10	809	66

Changes in expected credit loss allowance

EUR million	2018
Closing balance 31 December 2017 under IAS 39	66
Impact from change in accounting principle	-1
Opening balance 1 January 2018 under IFRS 9	64
Expected credit loss allowance recognised during the period	27
Write-offs	-9
Recovery of previously recognised expected credit loss allowance	-5
Translation differences and other changes	7
Closing balance 31 December 2018 under IFRS 9	85

On 31 December 2018, EUR 61 million of the expected credit loss allowance refers to the Russia segment.

Trade receivables by currency (Gross)

EUR million	2018	2017
EUR	234	206
SEK	137	137
RUB	197	207
NOK	217	177
PLN	84	69
Other	16	13
Total	885	809

Trade receivables are arising from a large number of customers mainly in EUR, SEK, RUB and NOK mitigating the concentration of risk.

For further information regarding credit risk management and credit risks, see ▶ **Counterparty risks** in the Operating and financial review and ▶ **Note 4.7** Credit risk.

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24 Liquid funds

ACCOUNTING POLICIES

Cash and cash equivalents in Liquid funds include cash in hand, deposits held at call with banks and other short-term, highly liquid investments with maturities of three months or less. Deposits and securities with maturity more than 3 months include fixed term deposits and commercial papers with maturity more than three months but less than twelve months. Deposits and securities are measured at amortised cost.

Bank overdrafts are shown within borrowings in current liabilities in the balance sheet. Cash collateral or otherwise restricted cash are treated as short-term interest-bearing receivables.

EUR million	2018	2017
Cash at bank and in hand	203	1,928
Deposits and securities with maturity under 3 months	353	1,253
Cash and cash equivalents	556	3,182
Deposits and securities with maturity more than 3 months	29	715
BS Total	584	3,897

Liquid funds consist of deposits and cash in bank accounts amounting to EUR 518 million and commercial papers EUR 66 million. The average interest rate on deposits and securities excl. Russian deposits on 31 December 2018 was -0.11% (2017: -0.27%). Liquid funds held by PAO Fortum amounted to EUR 317 million (2017: 246), of which EUR 316 million (2017: 231) was held as bank deposits. The average interest rate for this portfolio was 6.9% at the balance sheet date.

Liquid funds totalling EUR 168 million (2017: 3,348) are placed with counterparties that have an investment grade rating. In addition, EUR 416 million (2017: 549) have been placed with counterparties separately reviewed and approved by the Group's credit control department.

The committed and undrawn credit facilities amounted to EUR 1,800 million (2017: 1,800).

For further information regarding credit risk management and credit risks, see [Note 4.7](#) Credit risk.

25 Share capital

EUR million	2018		2017	
	Number of shares	Share capital	Number of shares	Share capital
Registered shares at 1 January	888,367,045	3,046	888,367,045	3,046
Cancellation of Treasury shares	72,580	-	-	-
Registered shares at 31 December	888,294,465	3,046	888,367,045	3,046

Fortum Corporation has one class of shares. By the end of 2018, a total of 888,294,465 shares had been issued. Each share entitles the holder to one vote at the Annual General Meeting. All shares entitle holders to an equal dividend. At the end of 2018 Fortum Corporation's share capital, paid in its entirety and entered in the trade register, was EUR 3,046,185,953.00.

In the merger of Länsivoima Oyj (former Lounais-Suomen Sähkö Oy) to Fortum Corporation in 2000, those shareholders of Länsivoima Oyj that did not produce their share certificates and did not request their rights to be registered in the book-entry system, received their respective shares of Fortum Corporation as merger consideration to a joint book-entry account opened on their behalf (the "Joint Account"). The Annual General Meeting 2018 of Fortum Corporation decided, that the rights to all such shares entered in the Joint Account and to the rights attached to such shares that had not been requested to be registered in the book-entry system prior to the decision by the Annual General Meeting 2018, were forfeited. In addition to the shares, the rights attached to such shares, such as undrawn dividend, were forfeited. The provisions applicable to treasury shares held by the company were applied to the forfeited shares. On 17 December 2018, Board of Directors decided to cancel all these 72,580 Fortum shares owned by the company without decreasing the share capital. The cancellation was entered in the Trade Register on 21 December 2018.

Fortum Corporation's shares are listed on Nasdaq Helsinki. The trading code is FORTUM (FUM1V before 25 January 2017). Fortum Corporation's shares are in the Finnish book entry system maintained by Euroclear Finland Ltd.

Details on the President and CEO and other members of the Fortum Executive Management Team's shareholdings and interest in the equity incentive schemes is presented in [Note 11](#) Employee benefits.

25.1 Authorisations from the Annual General Meeting 2018

On 28 March 2018, the Annual General Meeting decided to authorise the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum of 20,000,000 shares, which corresponds to approximately 2.25% of all the shares in the company. It was also decided that own shares could be repurchased or disposed of in connection with acquisitions, investments or other business transactions, or be retained or cancelled. The repurchases or disposals could not be made for the purposes of the company's incentive and remuneration schemes. The authorisation cancelled the authorisation resolved by the Annual General Meeting of 2017. The authorisation is effective until the next Annual General Meeting and, in any event, for a period no longer than 18 months. The authorisation had not been used by the end of 2018.

25.2 Convertible bond loans and bonds with warrants

Fortum Corporation has not issued any convertible bonds or bonds with attached warrants, which would entitle the bearer to subscribe for Fortum shares. The Board of Directors of Fortum Corporation has no unused authorisations from the General Meeting of shareholders to issue convertible bond loans or bonds with warrants or increase the company's share capital.

26 Non-controlling interests

Principal non-controlling interests

EUR million		2018	2017
PAO Fortum Group	Russia	33	37
AS Fortum Tartu Group	Estonia	37	34
Fortum Oslo Varme AS Group	Norway	152	150
Other		14	18
BS Total		236	239

27 Interest-bearing liabilities

Net debt

EUR million	2018	2017
Interest-bearing liabilities	6,093	4,885
Liquid funds	584	3,897
Net debt	5,509	988

Net debt is calculated as interest-bearing liabilities less liquid funds without deducting interest-bearing receivables amounting to EUR 1,092 million (Dec 31, 2017: 1,406). Interest-bearing receivables mainly consist of shareholder loans to partly owned nuclear companies regarded as long-term financing. For more information see [Note 21](#) Interest-bearing receivables.

Interest-bearing debt

EUR million	2018	2017
Bonds	1,746	2,521
Loans from financial institutions	1,799	155
Reborrowing from the Finnish State Nuclear Waste Management Fund	1,158	1,129
Other long-term interest-bearing debt	303	314
BS Total long-term interest-bearing debt	5,007	4,119
Current portion of long-term bonds	750	422
Current portion of loans from financial institutions	48	129
Current portion of other long-term interest-bearing debt	5	10
Commercial paper debt	207	0
Other short-term interest-bearing debt	76	206
BS Total short-term interest-bearing debt	1,086	766
Total interest-bearing debt	6,093	4,885

Interest-bearing debt

EUR million	Effective interest rate, %	Carrying amount 2018	Repricing			Fair value 2018	Carrying amount 2017	Fair value 2016
			Under 1 year	1–5 years	Over 5 years			
Bonds	3.7	2,496	847	1,552	97	2,629	2,943	3,143
Loans from financial institutions	0.9	1,847	1,847	-	-	1,901	283	303
Reborrowing from the Finnish State Nuclear Waste Management Fund	0.5	1,158	1,158	-	-	1,218	1,129	1,192
Other long-term interest-bearing debt ¹⁾	3.6	309	208	-	101	351	324	373
Total long-term interest-bearing debt ²⁾	2.2	5,810	4,060	1,552	198	6,099	4,679	5,011
Commercial paper debt	0.1	207	207	-	-	207	-	-
Other short-term interest-bearing debt	-0.3	76	76	-	-	76	206	207
Total short-term interest-bearing debt	0.0	283	283	-	-	283	206	207
Total interest-bearing debt ³⁾	2.1	6,093	4,343	1,552	198	6,382	4,885	5,218

1) Includes loans from Finnish pension institutions EUR 38 million (2017: 48) and other loans EUR 270 million (2017: 276).

2) Including current portion of long-term debt EUR 803 million (Dec 31, 2017: 560).

3) The average interest rate on loans and derivatives on 31 December 2018 was 2.4% (2017: 3.6%).

The interest-bearing debt increased in 2018 by EUR 1,208 million to EUR 6,093 million (2017: 4,885). The amount of short-term financing increased with EUR 77 million, and at the end of the year the amount of short-term financing EUR 283 million (2017: 206) included 75 million (2017: 113) from Credit Support Annex agreements.

During the first quarter of 2018 Fortum increased the amount of reborrowing from the Finnish State Nuclear Waste Management Fund and TVO by EUR 29 million to EUR 1,158 million. In March Fortum repaid two SEK bonds equivalent to EUR 413 million (SEK 4.15 billion). In June Fortum Oyj made a bridge loan drawdown of EUR 1.75 billion from existing committed credit facilities for Fortum's offer for Uniper shares. No major financing transactions during last quarters.

The average interest rate for the portfolio consisting mainly of EUR and SEK loans was 1.7% at the balance sheet date (2017: 2.4%). Part of the external loans EUR 686 million (2017: 773) have been swapped to RUB and the average interest cost for these loans including cost for hedging the RUB was 8.3% at the balance sheet date (2017: 9.5%). The average interest rate on total loans and derivatives at the balance sheet date was 2.4% (2017: 3.6%).

For more information please see [▶ Note 4](#) Financial risk management and [▶ Note 36](#) Pledged assets and contingent liabilities.

Reconciliation of interest-bearing liabilities

EUR million	31 Dec 2017	Cash flow from financing activities ¹⁾	Non-cash changes			31 Dec 2018
			Divestments	Exchange rate differences	Fair value changes and amortised cost	
Bonds	2,943	-413		-13	-21	2,496
Loans from financial institutions	283	1,571		-10	4	1,848
Reborrowing from the Finnish State Nuclear Waste Management Fund	1,129	29				1,158
Other interest-bearing debt	530	126	-58	-6		592
Total interest-bearing debt	4,885	1,313	-58	-29	-17	6,093

1) Repayments and borrowings.

EUR million	31 Dec 2016	Cash flow from financing activities ¹⁾	Non-cash changes			31 Dec 2017
			Acquisitions	Exchange rate differences	Fair value changes and amortised cost	
Bonds	3,329	-343		-16	-27	2,943
Loans from financial institutions	393	-144	42	-8		283
Reborrowing from the Finnish State Nuclear Waste Management Fund	1,094	35				1,129
Other interest-bearing debt	291	13	233	-8		530
Total interest bearing debt	5,107	-439	275	-31	-27	4,885

1) Repayments and borrowings.

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27.1 Bond issues

Issued/Maturity	Interest basis	Interest rate, %	Effective interest, %	Currency	Nominal value million	Carrying amount EUR million
Fortum Corporation EUR 8,000 million EMTN Programme ¹⁾						
2009/2019	Fixed	6.000	6.095	EUR	750	750
2011/2021	Fixed	4.000	4.123	EUR	500	513
2012/2022	Fixed	2.250	2.344	EUR	1,000	1,039
2013/2023	Floating	Stibor 3M+1.13		SEK	1,000	98
2013/2043	Fixed	3.500	3.719	EUR	100	97
Total outstanding carrying amount 31 December 2018						2,496

1) EMTN = Euro Medium Term Note

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28 Income taxes in balance sheet

ACCOUNTING POLICIES

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated income statement, because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax is provided in full, using the balance sheet approach on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, if the deferred tax arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss, it is not accounted for. Deferred tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the closing date and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised. Deferred tax assets are set off against deferred tax liabilities if they relate to income taxes levied by the same taxation authority.

Deferred tax is provided on temporary differences arising from investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference is controlled by the Group, and it is probable that the temporary difference will not be reversed in the foreseeable future.

The Group recognises liabilities for anticipated tax dispute issues based on estimates of whether additional taxes will be due. No provision will be recognised in the financial statements if Fortum considers the claims unjustifiable. Therefore, if taxes regarding ongoing tax disputes have to be paid before final court decisions, they will be booked as a receivable. Where the final outcome of these matters is different from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSUMPTIONS AND ESTIMATES REGARDING FUTURE TAX CONSEQUENCES

Fortum has deferred tax assets and liabilities which are expected to be realised through the income statement over the extended periods of time in the future. In calculating the deferred tax items, Fortum is required to make certain assumptions and estimates regarding the future tax consequences attributable to differences between the carrying amounts of assets and liabilities as recorded in the financial statements and their tax basis.

Assumptions made include the expectation that future operating performance for subsidiaries will be consistent with historical levels of operating results, recoverability periods for tax loss carry-forwards will not change, and that existing tax laws and rates will remain unchanged into foreseeable future. Fortum believes that it has prudent assumptions in developing its deferred tax balances

Assumptions and estimates regarding uncertain tax positions are supported by external legal counsel or expert opinion.

If the actual final outcome (regarding tax disputes) would differ negatively from management's estimates with 10%, the Group would need to increase the income tax liability by EUR 11 million as of 31 December 2018. For additional information regarding tax disputes, see [▶ Note 37](#) Legal actions and official proceedings.

28.1 Deferred income taxes in the balance sheet

EUR million	2018			2017		
	1 Jan	Change	31 Dec	1 Jan	Change	31 Dec
BS Deferred tax assets	73	-3	70	66	7	73
BS Deferred tax liabilities ¹⁾	-822	100	-720	-616	-203	-819
Net deferred taxes	-749	97	-651	-550	-197	-747

1) 1 January 2018 opening balance includes EUR -3 million of impact from change in accounting principle, IFRS 15. See additional information in [▶ Note 1](#) Accounting policies and [▶ Note 6](#) Segment reporting.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes relate to the same fiscal authority.

Movement in deferred tax assets and liabilities 2018

EUR million	Intangible assets	Property, plant and equipment	Pension obligations	Provisions	Derivative financial instruments	Tax losses and tax credits carry-forward	Other	Net deferred taxes
Closing balance 31 Dec	-101	-806	21	7	35	116	-20	-747
Impact from change in accounting principle (IFRS 15) ¹⁾	-3							-3
1 Jan 2018	-104	-806	21	7	35	116	-20	-749
Charged to income statement	0	-24	0	-23	-7	-42	10	-87
Charged to other comprehensive income	0	0	-2	0	159	0	5	162
Exchange rate differences, reclassifications and other changes	3	41	-1	1	-18	-3	4	28
Acquisitions and disposals	-5	1	0	0	0	0	0	-5
31 Dec 2018	-106	-788	20	-15	169	70	-1	-651

1) See additional information in [▶ Note 1 Accounting policies](#) and [▶ Note 6 Segment reporting](#).

Retained earnings when distributed as dividends are subject to withholding tax (e.g. Russia) or distribution tax (e.g. Estonia). Provision has been made for these taxes only to extent that it is expected that these earnings will be remitted in the foreseeable future. At the end of the year deferred income tax liabilities of EUR 32 million (2017: 28) have been recognised for the withholding tax and other taxes that would be payable on the distributions.

Change in deferred taxes 2018 are mainly related to change in derivative financial instruments through other comprehensive income.

Movement in deferred tax assets and liabilities 2017

EUR million	Intangible assets	Property, plant and equipment	Pension obligations	Provisions	Derivative financial instruments	Tax losses and tax credits carry-forward	Other	Net deferred taxes
1 Jan 2017	-12	-717	14	20	36	100	8	-550
Charged to income statement	7	-38	1	-10	16	8	-26	-42
Charged to other comprehensive income	0	0	3	0	-18	0	0	-15
Exchange rate differences, reclassifications and other changes	2	29	1	-2	1	-2	-6	22
Acquisitions and disposals	-98	-79	2	0	0	10	4	-161
31 Dec 2017	-101	-806	21	7	35	116	-20	-747

Deferred tax assets and liabilities from acquisitions and disposals in 2017 are mainly related to restructuring of the ownership in Hafslund together with the City of Oslo, acquisition of Solar power plants in Russia and wind power companies in Norway. In addition, the deferred tax asset relating to tax loss carry forwards increased net in 2017 mainly because of the additional taxable losses in the Netherlands partly offset by the usage of losses carry forwards in Russia.

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Deferred income tax assets recognised for tax loss carry-forwards

Deferred income tax assets are recognised for tax loss carry-forward to the extent that realisation of the related tax benefit through future profits is probable. The recognised tax assets relate to losses carry-forward with no expiration date and partly with expiry date as described below.

EUR million	2018		2017	
	Tax losses	Deferred tax asset	Tax losses	Deferred tax asset
Losses without expiration date	197	43	413	90
Losses with expiration date	110	28	103	26
Total	307	70	516	116

Deferred tax assets of EUR 10 million (2017: 20) have not been recognised in the consolidated financial statements, because the realisation is not probable. The major part of the unrecognised tax asset relates to loss carry-forwards that are unlikely to be used in the foreseeable future.

Tax loss carry-forwards decreased in 2018 mainly because of use of losses carry forwards in Russia and Sweden.

28.2 Income tax receivables

EUR million	2018	2017
Sweden	41	28
Belgium	114	114
Other	17	30
Total income tax receivables	172	172

Income tax receivables reflect payments of corporate income tax done in relation to the year 2018 as well as payments according to received tax audit assessments in relation to previous years.

In October 2018 the Administrative Court of Appeal in Sweden announced its decision relating to the income tax assessment for the year 2013. The decision was favorable to Fortum. The additional taxes claimed 2013 have been paid during prior year, in total EUR 26 million and based on supporting legal opinion booked as an income tax receivable. Due to the favorable decision the amount was refunded to Fortum in 2018. The income tax receivable in Sweden 2018 of EUR 41 million relate to overpayment of preliminary income tax.

In Belgium, Fortum has in previous years received income tax assessments for the years 2008–2012. The additional taxes have been paid during prior years, in total EUR 114 million and based on supporting legal opinions booked as an income tax receivable.

See ▶ [Note 37](#) Legal actions and official proceedings.

29 Nuclear related assets and liabilities

ACCOUNTING POLICIES

Fortum owns Loviisa nuclear power plant in Finland. In Fortum's consolidated balance sheet, Share in the State Nuclear Waste Management Fund and the Nuclear provisions relate to Loviisa nuclear power plant. Fortum's nuclear related provisions and the related part of the State Nuclear Waste Management Fund are both presented separately in the balance sheet. Fortum's share in the State Nuclear Waste Management Fund is accounted for according to IFRIC 5, Rights to interests arising from decommissioning, restoration and environmental rehabilitation funds which states that the fund assets are measured at the lower of fair value or the value of the related liabilities since Fortum does not have control or joint control over the State Nuclear Waste Management Fund. The Nuclear Waste Management Fund is managed by governmental authorities. The related provisions are the provision for decommissioning and the provision for disposal of spent fuel.

The fair values of the provisions are calculated according to IAS 37 by discounting the separate future cash flows, which are based on estimated future costs and actions already taken. The initial net present value of the provision for decommissioning (at the time of commissioning the nuclear power plant) has been included in the investment cost and is depreciated over the estimated operating time of the nuclear power plant. Changes in the technical plans etc., which have an impact on the future cash flow of the estimated costs for decommissioning, are accounted for by discounting the additional costs to the current point in time. The increased asset retirement cost due to the increased provision is added to property, plant and equipment and depreciated over the remaining estimated operating time of the nuclear power plant. For power plant units taken from use the increase is taken to income statement.

The provision for spent fuel covers the future disposal costs for fuel used until the end of the accounting period. Costs for disposal of spent fuel are expensed during the operating time based on fuel usage. The impact of the possible changes in the estimated future cash flow for related costs is recognised immediately in the income statement based on the accumulated amount of fuel used until the end of the accounting period. The related interest costs due to unwinding of the provision is recognised in the corresponding period.

The timing factor is taken into account by recognising the interest expense related to discounting the nuclear provisions. The interest on the State Nuclear Waste Management Fund assets is presented as financial income.

Fortum's actual share of the State Nuclear Waste Management Fund, related to Loviisa nuclear power plant, is higher than the carrying value of the Fund in the balance sheet. The legal nuclear liability should, according to the Finnish Nuclear Energy Act, be fully covered by payments and guarantees to the State Nuclear Waste Management Fund. The legal liability is not discounted while the provisions are, and since the future cash flow is spread over a very long time horizon, the difference between the legal liability and the provisions are material.

The annual fee to the Fund is based on changes in the legal liability, the interest income generated in the State Nuclear Waste Management Fund and incurred costs of taken actions.

Fortum also has minority interests in nuclear power companies, i.e. Teollisuuden Voima Oyj (TVO) in Finland and OKG Aktiebolag (OKG) and Forsmarks Kraftgrupp AB (Forsmark) in Sweden. The minority shareholdings are classified as associated companies and joint ventures and are consolidated with equity method. Both the Finnish and the Swedish companies are non-profit making, i.e. electricity production is invoiced to the owners at cost including depreciations, interest costs and production taxes accounted for according to local GAAP. Accounting policies of the associates regarding nuclear assets and liabilities have been changed where necessary to ensure consistency with the policies adopted by the Group.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSUMPTIONS MADE WHEN ESTIMATING PROVISIONS RELATED TO NUCLEAR PRODUCTION

The provision for future obligations for nuclear waste management including decommissioning of Fortum's nuclear power plant and related spent fuel is based on long-term cash flow forecasts of estimated future costs. The main assumptions are technical plans, timing, cost estimates and discount rate. The technical plans, timing and cost estimates are approved by governmental authorities.

Any changes in the assumed discount rate would affect the provision. If the discount rate used would be lowered, the provision would increase. Fortum has contributed cash to the State Nuclear Waste Management Fund based on a non-discounted legal liability, which leads to that the increase in provision would be offset by an increase in the recorded share of Fortum's part of the State Nuclear Waste Management Fund in the balance sheet. The total effect on the income statement would be positive since the decommissioning part of the provision is treated as an asset retirement obligation. This situation will prevail as long as the legal obligation to contribute cash to the State Nuclear Waste Management Fund is based on a non-discounted liability and IFRS is limiting the carrying value of the assets to the amount of the provision since Fortum does not have control or joint control over the fund.

Based on the Nuclear Energy Act in Finland, Fortum has a legal obligation to fully fund the legal liability decided by the governmental authorities, for decommissioning of the power plant and disposal of spent fuel through the State Nuclear Waste Management Fund.

Both in Finland and in Sweden nuclear operators are legally obligated for the decommissioning of the plants and the disposal of spent fuel (nuclear waste management). In both countries the nuclear operators are obligated to secure the funding of nuclear waste management by paying to government operated nuclear waste funds. The nuclear operators also have to give securities to guarantee that sufficient funds exist to cover future expenses of decommissioning of the power plant and disposal of spent fuel.

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Fortum has reassessed the assumptions used for all nuclear related assets and liabilities as of 31 December 2018. The increase in the nuclear provision for the Loviisa nuclear power plant in Finland leads to recognition of an additional share of the Finnish nuclear fund. As of 31 December 2018, Fortum still has EUR 254 million in unrecognised nuclear waste fund assets for Loviisa. The increase in the provision and the additional share in the fund are both included in Items affecting comparability. The changes in assumptions also had a positive impact on interests presented in other financial expenses. The assumptions have also been changed for the respective balances of the co-owned nuclear companies in Finland and Sweden, i.e. TVO, OKG and Forsmark. The total impact of the change to share of profit from these associated companies and joint ventures was EUR -37 million, net of tax, and including additional nuclear waste liability related to legacy waste obligations for Swedish nuclear. The net profit impact from all these nuclear-related adjustments is close to zero.

29.1 Nuclear related assets and liabilities for 100% owned nuclear power plant, Loviisa

EUR million	2018	2017
Carrying values in the balance sheet		
BS Nuclear provisions	899	858
BS Fortum's share of the State Nuclear Waste Management Fund	899	858
Legal liability and actual share of the State Nuclear Waste Management Fund		
Liability for nuclear waste management according to the Nuclear Energy Act	1,180	1,161
Funding obligation target	1,180	1,153
Fortum's share of the State Nuclear Waste Management Fund	1,153	1,125
Share of the fund not recognised in the balance sheet	254	267

Legal liability for Loviisa nuclear power plant

The legal liability on 31 December 2018, decided by the Ministry of Economic Affairs and Employment in November 2018, was EUR 1,180 million.

The legal liability is based on a cost estimate, which is done every year, and a technical plan, which is made every third year. The current technical plan was updated in 2016. The legal liability is determined by assuming that the decommissioning would start at the beginning of the year following the assessment year.

Fortum's share in the State Nuclear Waste Management Fund

According to Nuclear Energy Act, Fortum is obligated to contribute funds in full to the State Nuclear Waste Management Fund to cover the legal liability. Fortum contributes funds to the Finnish State Nuclear Waste Management Fund based on the yearly funding obligation target decided by the governmental authorities in connection with the decision of size of the legal liability. The current funding obligation target decided in November 2018 is EUR 1,180 million.

Nuclear provisions

EUR million	2018	2017
BS 1 January	858	830
Additional provisions	29	4
Provision used	-26	-21
Unwinding of discount	38	45
BS 31 December	899	858
Fortum's share in the State Nuclear Waste Management Fund	899	858

Nuclear provision and fund accounted according to IFRS

Nuclear provisions include the provision for decommissioning and the provision for disposal of spent fuel. The carrying value of the nuclear provisions, calculated according to IAS 37, increased by EUR 41 million compared to 31 December 2017, totalling EUR 899 million on 31 December 2018. The provisions are based on the same cash flows for future costs as the legal liability, but the legal liability is not discounted to net present value. The increase is mainly arising from the change in the assumptions used for the provisions.

The carrying value of the Fund in the balance sheet cannot exceed the carrying value of the nuclear provisions according to IFRIC Interpretation 5. The Fund is from an IFRS perspective overfunded with EUR 254 million, since Fortum's share of the Fund on 31 December 2018 was EUR 1,153 million and the carrying value in the balance sheet was EUR 899 million.

Fortum's share of the Finnish Nuclear Waste Management Fund in Fortum's balance sheet can in maximum be equal to the amount of the provisions according to IFRS. As long as the Fund is overfunded from an IFRS perspective, the effects to operating profit from this adjustment will be positive if the provisions increase more than the Fund and negative if actual value of the fund increases more than the provisions. This accounting effect is not included in Comparable operating profit in Fortum financial reporting. For more information see [▶ Note 7](#) Items affecting comparability.

Borrowing from the State Nuclear Waste Management Fund

Participants in the Finnish State Nuclear Waste Management Fund are allowed to borrow from the fund according to certain rules. Fortum uses the right to borrow back and has pledged shares in Kemijoki Oy as security for the loans. The loans are renewed yearly. See [▶ Note 27](#) Interest-bearing liabilities and [▶ Note 36](#) Pledged assets and contingent liabilities.

29.2 Nuclear power plants in associated companies and joint ventures

OKG, Forsmark and TVO are non-profit making companies, i.e. electricity production is invoiced to the owners at cost including depreciations, interest costs and production taxes. Invoiced cost is accounted for according to local GAAP. In addition to the invoiced electricity production cost, Fortum makes IFRS adjustments to comply with Fortum's accounting principles. These adjustments include also Fortum's share of the companies' nuclear waste funds and nuclear provisions.

The tables below present the 100% figures relating to nuclear funds and provisions for the companies as well as Fortum's net share.

TVO's total nuclear related assets and liabilities (100%)

EUR million	2018	2017
Carrying values in TVO's balance sheet		
Nuclear provisions	1,016	953
Share of the State Nuclear Waste Management Fund	1,016	953
of which Fortum's net share consolidated with equity method	0	0
TVO's legal liability and actual share of the State Nuclear Waste Management Fund		
Liability for nuclear waste management according to the Nuclear Energy Act	1,506	1,482
Share of the State Nuclear Waste Management Fund	1,471	1,437
Share of the fund not recognised in the balance sheet	455	484

TVO's legal liability, provision and share of the fund are based on the same principles as described above for Loviisa nuclear power plant and includes in 2018 the impact from adjustments following the reassessment.

TVO's share of the Finnish State Nuclear Waste Management Fund is from an IFRS perspective overfunded with EUR 455 million (of which Fortum's share EUR 121 million), since TVO's share of the Fund on 31 December 2018 was EUR 1,471 million and the carrying value in the balance sheet was EUR 1,016 million.

Participants in the Finnish State Nuclear Waste Management Fund are allowed to borrow from the fund according to certain rules. Fortum is using the right to reborrow funds through TVO based on its ownership. See more information in [▶ Note 27](#) Interest-bearing liabilities.

OKG's and Forsmark's total nuclear related assets and liabilities (100%)

EUR million	2018	2017
OKG's and Forsmark's nuclear related assets and liabilities ¹⁾		
Nuclear provisions	3,930	3,398
Share in the State Nuclear Waste Management Fund	3,230	3,105
Net amount	-701	-293
of which Fortum's net share consolidated with equity method	-242	-114

1) Accounted for according to Fortum's accounting principles. Companies' statutory financial statements are not prepared according to IFRS.

In Sweden Svensk Kärnbränslehantering AB (SKB), a company owned by the nuclear operators, takes care of all nuclear waste management related activities on behalf of nuclear operators. SKB receives its funding from the Swedish State Nuclear Waste Management Fund, which in turn is financed by the nuclear operators.

Nuclear waste fees and guarantees are updated every third year by governmental decision after a proposal from Swedish Radiation Safety Authority (SSM). The proposal is based on cost estimates done by SKB. A new technical plan for nuclear waste management was decided by SKB during 2016. In 2017 SKB submitted the cost estimates based on the revised technical plan to SSM. In December 2017 the Swedish government decided the waste fees and guarantees for years 2018–2020. Nuclear waste fees are currently based on future costs with the assumed lifetime of 50 years (40 years in previous decision) for each unit of a nuclear power plant.

In addition to nuclear waste fees nuclear power companies provide guarantees for any uncovered liability and unexpected events.

For more information regarding Fortum's guarantees given on behalf of nuclear associated companies, see [▶ Note 36](#) Pledged assets and contingent liabilities.

30 Other provisions

ACCOUNTING POLICIES

Provisions for environmental obligations, asset retirement obligations, restructuring costs and legal claims are recognised when the Group has a present legal or constructive obligation as a result of past events to a third party, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognised as interest expense.

ENVIRONMENTAL PROVISIONS

Environmental provisions are recognised, based on current interpretation of environmental laws and regulations, when it is probable that a present obligation has arisen and the amount of such liability can be reliably estimated. Environmental expenditures resulting from the remediation of an existing condition caused by past operations, and which do contribute to current or future revenues, are expensed as incurred.

Environmental provisions include provisions for obligations to cover landfills and clean-up obligations for contaminated land areas. Provisions are determined based on the surface area of the landfill site, remaining land area to be landscaped or otherwise cleaned-up, and the unit cost of conducting the coverage and clean-up activities in the future.

Environmental provisions are also booked for aftercare and monitoring obligations arising from landfill permit holder's requirement to take into account potential danger to health or the environment posed by a landfill site for a period of at least 30 (up to 60) years after the coverage. The aftercare and monitoring provision is determined on the basis of estimated costs and estimated number of years of filling the landfill.

ASSET RETIREMENT OBLIGATIONS

Asset retirement obligation is recognised either when there is a contractual obligation towards a third party or a legal obligation and the obligation amount can be estimated reliably. Obligating event is e.g. when a plant is built on a leased land with an obligation to dismantle and remove the asset in the future or when a legal obligation towards Fortum changes. The asset retirement obligation is recognised as part of the cost of an item of property, plant and equipment when the asset is put in service. The costs will be depreciated over the remainder of the asset's useful life.

RESTRUCTURING PROVISIONS

A restructuring provision is recognised when the Group has developed a detailed formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement the plan

or announcing its main features to those affected by it. The measurement of a restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity. Restructuring provisions comprise mainly employee termination payments and lease termination costs.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSUMPTIONS MADE WHEN ESTIMATING PROVISIONS

Provisions for present obligations require management to assess the best estimate of the expenditure needed to settle the present obligation at the end of the reporting period. The actual amount and timing of the expenditure might differ from estimates made.

EUR million	2018			2017		
	Environ-mental	Other	Total	Environ-mental	Other	Total
1 January	43	79	122	47	82	129
Acquisitions	0	0	0	0	7	7
Provisions for the period	0	25	25	0	31	31
Provisions used	0	-33	-33	0	-35	-35
Provisions reversed	0	-4	-4	0	-10	-10
Exchange rate differences and other changes	-1	-3	-4	-4	4	0
31 December	41	65	106	43	79	122
Of which current provisions ¹⁾	0	14	14	0	22	22
BS Of which non-current provisions	41	50	91	43	57	100

1) Included in trade and other payables in the balance sheet, see ▶ **Note 33** Trade and other payables.

Environmental provisions include mainly provisions for obligations to cover and monitor landfills as well as to clean contaminated land areas. Main part of the provisions are estimated to be used within 10–15 years.

Dismantling provisions for the Finnish coal fired power plants are included in Other provisions.

Regarding provisions for decommissioning and provision for disposal of spent fuel for nuclear production, see ▶ **Note 29** Nuclear related assets and liabilities.

31 Pension obligations

ACCOUNTING POLICIES

The Group companies have various pension schemes in accordance with the local conditions and practises in the countries in which they operate. The schemes are generally funded through payments to insurance companies or the Group's pension funds as determined by periodic actuarial calculations. The Group has both defined benefit and defined contribution plans.

The Group's contributions to defined contribution plans are charged to the income statement in the period to which the contributions relate.

For defined benefit plans, pension costs are assessed using the projected unit credit method. The cost of providing pensions is charged to the income statement as to spread the service cost over the service lives of employees. The net interest is presented in financial items and the rest of the income statement effect as pension cost.

The defined benefit obligation is calculated annually on the balance sheet date and is measured as the present value of the estimated future cash flows using interest rates of high-quality corporate bonds that have terms to maturity approximating to the terms of the related pension liability. In countries where there is no deep market in such bonds, market yields on government bonds are used instead. The plan assets for pensions are valued at market value. The liability recognised in the balance sheet is the defined benefit obligation at the closing date less the fair value of plan assets. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss related to a curtailment is recognised immediately in profit or loss. Gains or losses on settlements of defined benefits plans are recognised when the settlement occurs.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS: ASSUMPTIONS USED TO DETERMINE FUTURE PENSION OBLIGATIONS

The present value of the pension obligations is based on actuarial calculations that use several assumptions.

Any changes in these assumptions will impact the carrying amount of pension obligations.

In addition the Group has additional old-age and survivors pension benefits arranged with the Fortum Pension Fund. The Fortum Pension Fund is a closed fund managed by a Board, consisting of both employers' and employees' representatives. The Fund is operating under regulation from Financial Supervisory Authority (FSA). The liability has to be fully covered according to the regulations. The national benefit obligation related to the defined benefit plans is calculated so that the promised benefit is fully funded until retirement. After retirement the benefits payable are indexed yearly with TyEL-index. The promised benefit is defined in the rules of the Fund, mostly 66% at a maximum of the salary basis. The salary basis is an average of the ten last years' salaries, which are indexed with a common salary index to the accounting year.

Sweden

In Sweden the Group operates several defined benefit and defined contribution plans like the general ITP-pension plan and the PA-KL and PA-KFS plans that are eligible for employees within companies formerly owned by municipalities. The defined benefit plans are fully funded and have partly been financed through Fortum's own pension fund and partly through insurance premiums. The pension arrangements comprise normal retirement pension, complementary retirement pensions, survivors' pension and disability pension. The most significant pension plan is the ITP-plan for white-collar employees in permanent employment (or temporary employees after a certain waiting period), who fulfil the age conditions. To qualify for a full pension the employee must have a projected period of pensionable service, from the date of entry until retirement age, of at least 30 years.

The Swedish pension fund is managed by a Board, consisting of both employers' and employees' representatives. The fund is operating under regulation from Swedish Financial Supervisory Authority and the County Administrative Board and governed by Swedish law (no. 1967:531). The fund constitutes a security for the employers' defined benefit pension plan liability and the fund has no obligations in relation to pension payments. The employer must have a credit insurance from PRI Pensionsgaranti Mutual Insurance Company for the liability. The liability does not have to be fully covered by the fund according to the regulations.

The part of the ITP multiemployer pension plan that is secured by paying pension premiums to Alecta, in Fortum's case the collective family pension, is accounted for as a defined contribution plan due to that there is no consistent and reliable basis to allocate assets or liabilities to the participating entities within the ITP insurance. The reason for this is that it is not possible to determine from the terms of the plan to which extent a surplus or a deficit will affect future contributions.

Norway

Group companies operate both defined contribution and defined benefit plans. Some defined benefit schemes offer benefits common for municipalities in Norway and some are private pension schemes. Benefits include old

Fortum's pension arrangements

Finland

In Finland statutory pension benefits (as determined in Employee's Pension Act /TyEL) provide the employees pension coverage for old age, disability and death of a family provider. The benefits are insured with an insurance company and determined to be defined contribution plans.

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age pensions, disability pension and survivor's pension, including pension benefits from the National Insurance Scheme (Folketrygden). The schemes are fully funded within the rules set out in the Norwegian insurance legislation.

The majority of the defined benefit plans are closed, either private plans or public plans, that are operated by the Fortum Pension Fund. The Fortum Pension Fund was established in 2018 and the participants were transferred there from the Hafslund and Infratek's Pension Fund. The Group has also a closed public defined benefit plan operated by Oslo Pensjonsforsikring AS. In addition, the Group has defined benefit plans with various insurance companies.

Pension arrangements in other countries

Pension arrangements in Russia include payments made to the state pension fund. These arrangements are treated as defined contribution plans. The Russian (in addition to the defined contribution plans) and Polish companies participate in certain defined benefit plans, defined by collective agreements, which are unfunded and where the company meets the benefit payment obligation as it falls due. The benefits provided under these arrangements include, in addition to pension payments, one-time benefits paid in case of employee mortality or disability as well as lump sum payments for anniversary and financial support to honoured workers and pensioners.

In other countries the pension arrangements are done in accordance with the local legislation and practice, mostly being defined contribution plans.

Main risks relating to defined benefit plans – Finland and Sweden

Overall risks

Finland – If the return of the fund's assets is not enough to cover the raise in liability and benefit payments over the financial year then the employer funds the deficit with contributions unless the fund has sufficient equity.

Sweden – As the pension fund is separated from the funding companies Fortum is not obliged to make additional contributions to the pension fund in any case of deficit. However if the assets decrease to a level lower than the liability according to Swedish GAAP, Fortum's credit insurance cost from PRI will increase.

Change in discount rate

Finland – The discount rate which is used to calculate the defined benefit obligation (according to IFRS) depends on the value of corporate bond yields as at reporting date. A decrease in yields increases the benefit obligation that is offset by increase in the value of fixed income holdings.

Investment and volatility risk

Finland – The pension fund's board accepts yearly an Investment Plan, which is based on an external asset-liability analysis. The assets are allocated to stocks and stock funds, fixed income instruments and real estate. The investments are diversified into different asset classes and to different asset managers taking into account the regulation of the Financial Supervisory Authority.

Sweden – The pension fund operation is regulated by law and supervised by central administrative authorities (Finansinspektionen and the County Administrative Board). The pension fund board decides yearly on a policy for asset allocation and a risk management model that stipulates a maximum acceptable market value decrease of the assets. The major assets are fixed income instruments, stock index funds and cash.

Risks relating to assumptions used

Actuarial calculations use assumptions for future inflation and salary levels and longevity. Should the actual outcome differ from these assumptions, this might lead to higher liability.

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Movement in the net defined benefit liability

EUR million	Defined benefit obligation		Fair value of plan assets		Net defined benefit asset(-)/liability(+)	
	2018	2017	2018	2017	2018	2017
Balance at 1 January	501	452	-401	-378	101	74
Included in profit or loss						
Current service cost	8	6			9	7
Past service cost	-1	0			-1	0
Settlements	-4	-3	2	5	-1	2
Net interest ¹⁾	9	9	-7	-7	2	2
	13	12	-4	-2	9	10
Included in OCI						
Remeasurement gains(-)/losses(+)	-8	10	2	7	-6	17
Actuarial gains/losses arising from changes in financial assumptions	-12	16			-12	16
Actuarial gains/losses arising from experience adjustments	4	-6			4	-6
Return on plan assets (excluding amounts included in net interest expense)			2	7	2	7
Exchange rate differences	-7	-5	5	4	-2	-1
	-15	5	7	11	-8	16
Other						
Contributions paid by the employer			-1	-3	-1	-3
Benefits paid	-17	-18	13	14	-4	-3
Acquisitions of subsidiary companies	0	50	0	-43	0	7
Balance at 31 December	483	501	-386	-401	97	101
Present value of funded defined obligation					480	497
Fair value of plan assets					-386	-401
Funded status					94	96
Present value of unfunded obligation ²⁾					3	4
Net liability arising from defined benefit obligation					97	101
Pension assets included in other non-current assets in the balance sheet					1	2
BS Pension obligations in the balance sheet					98	102

1) Net interest is presented among financial items in income statement, the rest of costs related to defined benefit plans are included in staff costs (row defined benefits plans in the staff cost specification in ▶ Note 11 Employee benefits).

2) The unfunded obligation relates to arrangements in Russia and Poland.

At the end of 2018 a total of 833 (2017: 985) Fortum employees are included in defined benefit plans providing pension benefits. During 2018 pensions or related benefits were paid to a total of 3,375 (2017: 3,160) persons.

Contributions expected to be paid during year 2019 are EUR 3 million.

Fair value of plan assets

EUR million	2018	2017
Equity instruments	129	126
Debt instruments	173	156
Cash and cash equivalents	51	48
Real estate, of which EUR 1 million (2017: 42) occupied by the Group	12	47
Investment funds	1	1
Company's own ordinary shares	5	5
Other assets	16	18
Total	386	401

When the pension plan has been financed through an insurance company, a specification of the plan assets has not been available. In these cases the fair value of plan assets has been included in other assets.

The actual return on plan assets in Finland, Sweden and Norway totalled EUR 5 million (2017: 0).

Amounts recognised in the balance sheet by country 2018

EUR million	Finland	Sweden	Norway	Other countries	Total
Present value of funded obligations	269	147	64	0	480
Fair value of plan assets	-233	-102	-52	0	-386
Deficit(+)/surplus(-)	37	45	12	0	94
Present value of unfunded obligations				3	3
Net asset(-)/liability(+) in the balance sheet	37	45	12	3	97
Pension asset included in non-current assets	0	0	1	0	1
BS Pension obligations in the balance sheet	37	45	13	3	98

Amounts recognised in the balance sheet by country 2017

EUR million	Finland	Sweden	Norway	Other countries	Total
Present value of funded obligations	295	141	61	0	497
Fair value of plan assets	-245	-105	-51	0	-401
Deficit(+)/surplus(-)	50	36	10	0	96
Present value of unfunded obligations				4	4
Net asset(-)/liability(+) in the balance sheet	50	36	10	4	101
Pension asset included in non-current assets	0	1	1	0	2
BS Pension obligations in the balance sheet	50	37	11	4	102

The principal actuarial assumptions used

%	2018			2017		
	Finland	Sweden	Norway	Finland	Sweden	Norway
Discount rate	1.60	2.30	2.60	1.50	2.40	2.30
Future salary increases ¹⁾	1.70	2.90	2.75	1.90	2.80	2.50
Future pension increases ²⁾	1.80	1.90	1.33	2.00	1.80	1.34
Rate of inflation	1.50	1.90	1.50	1.70	1.80	1.50

1) The percentage in Finland for 2017 has been corrected to 1.90% from 2.90%.

2) The percentage in Sweden for 2017 has been corrected to 1.80% from 2.80%.

The discount rate in Finland is based on high quality European corporate bonds with maturity that best reflects the estimated term of the defined benefit pension plans. The discount rate in Sweden is based on yields on Swedish covered bonds with maturity that best reflects the estimated term of the defined benefit pension plans. The covered bonds in Sweden are considered high quality bonds as they are secured with assets.

The life expectancy is the expected number of years of life remaining at a given age

Longevity at age 65	Finland	Sweden	Norway
45 - male	22	23	23
45 - female	27	25	27
65 - male	21	22	22
65 - female	25	24	25

The discount, inflation and salary growth rates used are the key assumptions used when calculating defined benefit obligations. Effects of 0.5 percentage point change in the rates to the defined benefit obligation on 31 December 2018, holding all other assumptions stable, are presented in the table below.

Sensitivity of defined benefit obligation to changes in assumptions

Change in the assumption	Impact to the pension obligation increase(+)/decrease(-)		
	Finland	Sweden	Norway
0.5% increase in discount rate	-7%	-11%	-10%
0.5% decrease in discount rate	7%	11%	11%
0.5% increase in benefit	6%	10%	7%
0.5% decrease in benefit	-6%	-9%	-7%
0.5% increase in salary growth rate	1%	2%	4%
0.5% decrease in salary growth rate	-1%	-3%	-3%

The methods used in preparing the sensitivity analysis did not change compared to the previous period. Change in mortality basis so that life expectancy increases by one year would increase the net liability in Finland, Sweden and Norway with EUR 17 million (19%).

Maturity profile of the undiscounted defined benefit obligation for Finland, Sweden and Norway as of 31 December 2018

EUR million	Future benefit payments
Maturity under 1 year	17
Maturity between 1 and 5 years	72
Maturity between 5 and 10 years	89
Maturity between 10 and 20 years	172
Maturity between 20 and 30 years	135
Maturity over 30 years	107

The weighted average duration of defined benefit obligation in Finland, Sweden and Norway at the end of year 2018 is 14 years.

32 Other non-current liabilities

EUR million	2018	2017
Connection fees	109	109
Other liabilities	73	66
BS Total	182	175

Fees paid by the customer when connected to district heating network in Finland were refundable until 2013. These connection fees have not been recognised in the income statement and are included in other liabilities in the balance sheet.

33 Trade and other payables

EUR million	2018	2017
Trade payables	334	318
Accrued expenses and deferred income		
Accrued personnel expenses	103	97
Accrued interest expenses	98	113
Contract liabilities	40	-
Other accrued expenses and deferred income	80	174
Other liabilities		
VAT-liability	34	43
Current tax liability	30	25
Energy taxes	2	15
Advances received	110	98
Current provisions ¹⁾	14	22
Other liabilities	212	209
BS Total	1,058	1,112

1) See also ▶ [Note 30](#) Other provisions.

Based on IFRS 15 a contract liability is presented for an obligation to transfer goods or services to a customer when payment has already been received. Contract liabilities on 31 December 2018 are comprised mainly of project and waste management services that are invoiced but not delivered at the reporting date. Fortum has adopted the new IFRS 15 “Revenue from Contracts with Customers” standard from 1 January 2018 onwards and comparative information 2017 has not been restated. See additional information on adoption of IFRS 15 in ▶ [Note 1](#) Accounting policies and ▶ [Note 6](#) Segment reporting.

The management considers that the amount of trade and other payables approximates fair value.

34 Lease commitments

ACCOUNTING POLICIES

OPERATING LEASES

Leases of property, plant and equipment, where the Group does not have substantially all of the risks and rewards of ownership are classified as operating leases. Payments made under operating leases are recognised in the income statement as costs on a straight-line basis over the lease term.

Payments received under operating leases where the Group leases out fixed assets are recognised as other income in the income statement.

FINANCE LEASES

Leases of property, plant and equipment, where the Group has substantially all the risks and rewards of ownership, are classified as finance leases. Finance leases are capitalised at the commencement of the lease term at the lower of the fair value of the leased property and the present value of the minimum lease payments determined at the inception of the lease.

34.1 Leases as a lessor

Operating leases

The operating rental income recognised in income statement was EUR 12 million (2017: 6).

Finance leases

Fortum does not have material finance lease arrangements where the Group is acting as a lessor.

34.2 Leases as lessee

Operating leases

Fortum leases mainly land and office buildings under various non-cancellable operating leases, some of which contain renewal options. The future costs for non-cancellable operating lease contracts are stated below. Lease rental expenses amounting to EUR 32 million (2017: 33) are included in the income statement in other expenses.

Future minimum lease payments on operating leases

EUR million	2018	2017
Not later than 1 year	30	23
Later than 1 year and not later than 5 years	88	72
Later than 5 years	98	65
Total	216	160

Finance leases

Fortum does not have material finance lease arrangements where the Group is acting as a lessee.

35 Capital commitments

EUR million	2018	2017
Property, plant and equipment	322	362

Capital commitments are capital expenditures contracted for at the balance sheet date but not recognised in the financial statements. The decrease in capital commitments compared to previous year comes mainly from progressing of the automation investment in Loviisa nuclear power plant and Zabrze CHP investments, partly offset by the new Kivenlahti Bio-HOB investment.

For more information regarding capital expenditure, see [Note 18](#) Property, plant and equipment.

Other commitments

Fortum has committed to provide a maximum of EUR 85 million to Voimaosakeyhtiö SF, for its participation in the Fennovoima nuclear power project in Finland. Furthermore, Fortum's remaining direct commitment regarding the construction of a waste-to-energy combined heat and power plant (CHP) in Kaunas, Lithuania is EUR 7 million at maximum. The investment is made through Kauno Kogeneracinė Jėgainė (KKJ), a joint venture owned together with Lietuvos Energija.

Fortum has also committed to provide a maximum of EUR 12 million to a joint venture with Numaligarh Refinery Limited (NRL) and Chempolis to build and operate a biorefinery in Assam, India.

Teollisuuden Voima Oyj (TVO) is building Olkiluoto 3, the nuclear power plant, which is funded through external loans, share issues and shareholder loans according to shareholders' agreement between the owners of TVO. As of January 1, 2018 TVO shareholder loans EUR 145 million has been classified as participation in joint ventures, which is described in [Note 1.6](#) New IFRS standards adopted from 1 Jan 2018. At end of December 2018 Fortum had EUR 170 million (2017: 145) outstanding receivables regarding Olkiluoto 3 and is additionally committed to provide at maximum EUR 63 million.

In June 2018 the Swedish Government approved the legislation regarding Sweden's national strategy for implementation of the EU's Water Framework Directive. The largest hydro industry companies will create a common hydro-power fund to finance large parts of the environmental actions needed. The fund will have a total financial cap of SEK 10 billion to be paid over a 20-year period, and the largest operators will contribute to the fund proportionately based on their respective market share of hydro-power production. Fortum's share is expected to be 20–25% of the fund's total financing.

36 Pledged assets and contingent liabilities

ACCOUNTING POLICIES

CONTINGENT LIABILITIES

A contingent liability is disclosed when there is a possible obligation that arises from past events and whose existence is only confirmed by one or more doubtful future events or when there is an obligation that is not recognised as a liability or provision because it is not probable that an outflow of resources will be required or the amount of the obligation cannot be reliably estimated.

EUR million	2018	2017
Pledged assets on own behalf		
For debt		
Pledges	288	300
Real estate mortgages	137	177
For other commitments		
Pledges	346	346
Real estate mortgages	21	141
Pledged assets on behalf of others		
Pledges	31	12
Contingent liabilities on own behalf		
Other contingent liabilities	167	161
On behalf of associated companies and joint ventures		
Guarantees	622	598

36.1 Pledged assets for debt

Finnish participants in the State Nuclear Waste Management Fund are allowed to borrow from the fund. Fortum has pledged shares in Kemijoki Oy as a security. The value of the pledged shares was EUR 269 million on 31 December 2018 (2017: 269).

Fortum Tartu in Estonia (60% owned by Fortum) has given real estate mortgages for a value of EUR 96 million (2017: 96) as a security for an external loan. Real estate mortgages have also been given for loan from Fortum's pension fund for EUR 41 million (2017: 41).

The mortgage for loans of Russian solar plants was released during the beginning of 2018 (2017: 41).

Regarding the relevant interest-bearing liabilities, see [Note 27](#) Interest-bearing liabilities.

36.2 Pledged assets for other commitments

Pledges also include restricted cash given as trading collateral of EUR 346 million (2017: 346) for trading of electricity and CO₂ emission allowances in Nasdaq Commodities, in Intercontinental Exchange (ICE), European Energy Exchange (EEX) and Polish Power Exchange (TGE). See also [Note 21](#) Interest-bearing receivables.

Fortum has given real estate mortgages in power plants in Finland, total value of EUR 21 million in December 2018 (2017: 141), as a security to the Finnish State Nuclear Waste Management Fund for the uncovered part of the legal liability and unexpected events relating to future costs for decommissioning and disposal of spent fuel in Loviisa nuclear power plant. According to the Nuclear Energy Act, Fortum is obligated to contribute the funds in full to the State Nuclear Waste Management Fund to cover the legal liability. Any uncovered legal liability relates to periodising of the payments to the fund. The size of the securities given is updated yearly in Q2 based on the decisions regarding the legal liabilities and the funding target determined at the end of the previous year. Due to the yearly update, the amount of real estate mortgages given as a security decreased by EUR 120 million.

See also [Note 29](#) Nuclear related assets and liabilities.

Pledged assets on behalf of others

Pledged assets on behalf of others consist of restricted cash EUR 31 million (2017: 12) posted as collateral toward Nasdaq Clearing AB covering Fortum's required contribution to the Commodity Market Default Fund (default fund). The default fund is a mutualised fund whereby all participants on the Nordic power exchange (Nasdaq Commodities) post collateral in relation to their exposure on the market in order to cover potential defaults by members which may cause losses exceeding the members' own collateral. The increase in the pledged amount is due to the replenishment given in September 2018. See also [Note 21](#) Interest-bearing receivables.

36.3 Contingencies on own behalf

Fortum owns the coal condensing power plant Meri-Pori in Finland. Teollisuuden Voima Oyj (TVO) has the contractual right to participate in the plant with 45.45%. Based on the participation agreement Fortum has to give a guarantee to TVO against breach in contract. The amount of the guarantee is set to EUR 125 million (2017: 125). The guarantee was released on 1 January 2019, see [Note 39](#) Events after the balance sheet date.

36.4 Contingencies on behalf of associated companies

Guarantees and other contingent liabilities on behalf of associated companies and joint ventures mainly consist of guarantees relating to Fortum's associated nuclear companies Teollisuuden Voima Oyj (TVO), Forsmarks Kraftgrupp AB (FKA) and OKG AB (OKG). The guarantees are given in proportion to Fortum's respective ownership in each of these companies.

According to law, nuclear companies operating in Finland and Sweden shall give securities to the Finnish State Nuclear Waste Management Fund and the Swedish Nuclear Waste Fund respectively, to guarantee that sufficient funds exist to cover future expenses of decommissioning of the power plant and disposal of spent fuel.

In Finland, Fortum has given a guarantee on behalf of TVO to the Finnish State Nuclear Waste Management Fund to cover Fortum's share of TVO's uncovered part of the legal liability and for unexpected events. The amount of guarantees is updated every year in June based on the legal liability decided in December the previous year. Due to the yearly update, the amount of guarantees given were EUR 36 million (2017: 50). The guarantee covers the unpaid legal liability due to periodisation as well as risks for unexpected future costs.

In Sweden, Fortum has given guarantees on behalf of FKA and OKG to the Swedish Nuclear Waste Fund to cover Fortum's part of FKA's and OKG's liability. Guarantees for the period of 2015–2017 has been given on behalf of Forsmarks Kraftgrupp AB and OKG AB amounting to SEK 5,393 million (EUR 526 million) at 31 December 2018 (2017: EUR 548 million). There are two types of guarantees given on behalf of Forsmarks Kraftgrupp AB and OKG AB. The Financing Amount is given to cover Fortum's share of the uncovered part in the Nuclear Waste Fund, assuming no further production and that no further nuclear waste fees are paid in. The uncovered amount is calculated by the authorities and is based on the difference between the expected costs and the funds to cover these costs at the time of the calculation. The amounts for the guarantees are updated every third year by governmental decision. The Supplementary Amount constitutes a guarantee for deficits that can arise as a result of unplanned events. The Financing Amount given by Fortum on behalf of Forsmarks Kraftgrupp AB and OKG AB was SEK 3,843 million (EUR 375 million) and the Supplementary Amount was SEK 1,550 million (EUR 151 million) at 31 December 2018.

Fortum has given guarantees to secure bank loans obtained by WEDF Second Wind Farm LLC and WEDF Third Wind Farm LLC, which are subsidiaries of the 50–50 Wind-fund with Rusnano. The guarantees given on pro rata basis are security for loans relating to wind farms' development and amount to RUB 3,840 million (EUR 48 million) at 31 December 2018.

36.5 Other contingent liabilities

Fortum's 100% owned subsidiary Fortum Heat and Gas Oy has a collective contingent liability with Neste Oyj of the in 2004 demerged Fortum Oil and Gas Oy's liabilities based on the Finnish Companies Act's (734/1978) Chapter 14a Paragraph 6.

37 Legal actions and official proceedings

37.1 Group companies

Tax cases in Finland

No tax cases with material impact in Finland.

Tax cases in Sweden

Cases relating to Swedish interest deductions

In March 2018 the Swedish Supreme Administrative Court decided not to grant leave to appeal to Fortum with respect to the interest deduction cases relating to the years 2009–2012. The unfavourable decision of the Administrative Court of Appeal from June 2017 therefore remains in force. The additional tax and interest claimed, in total SEK 1,175 million (EUR 122 million), was paid in 2016 and booked as a cost in 2017. There are strong grounds to argue that the aforementioned decisions of the Administrative Court of Appeal and the Supreme Administrative Court violate EU law and fundamental rights under EU law. On these grounds Fortum has in December 2018 filed a summons application to the District Court of Stockholm in which damages are claimed from the Swedish state in these cases. Moreover, Fortum has filed a request to initiate a mutual agreement procedure between Sweden and the Netherlands for the year 2012.

Fortum has received income tax assessments in Sweden for the years 2013, 2014 and 2015 in December 2015, December 2016 and October 2017, respectively. The assessments concern the loans given in 2013, 2014 and 2015 by Fortum's Dutch financing company to Fortum's subsidiaries in Sweden. The interest income for these loans was taxed in the Netherlands. The tax authorities considered, based on 2013 tax regulation, over a half of the interest relating to each loan as deductible, i.e. deriving from business needs. The rest of the interest is seen as non-deductible. After Fortum received a negative decision from the Administrative Court in Stockholm in 2017, Fortum filed an appeal to the Administrative Court of Appeal in Stockholm. In October 2018 the Administrative Court of Appeal in Stockholm, Sweden announced its decision relating to the income tax assessment for the year 2013. The decision was favorable to Fortum. The Administrative Court of Appeal confirmed that Fortum had sufficient business reasons for the loans and accepted Fortum's appeal. The decision regarding the year 2013 is final.

The Administrative Court of Stockholm announced its decisions in the cases for 2014 and 2015 in November 2018. Also these decisions, like the decision from the Administrative Court of Appeal for 2013, were favorable to Fortum and in line with the tax authorities' changed opinion based on the year 2013 decision. The decisions will become non-appealable by the end of January 2019.

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Fortum had not made provisions for the cases regarding the years 2013–2015. Therefore, the favorable decisions issued by the Administrative Court of Appeal in October 2018 and by the Administrative Court in November 2018 do not have any impact on profits.

The amount of additional tax claimed by the Swedish tax authority has originally been SEK 273 million (EUR 26 million) for the year 2013, SEK 282 million (EUR 27 million) for the year 2014, and SEK 200 million (EUR 19 million) for the year 2015. The additional tax for 2013 was paid in 2017 and was refunded to Fortum due to the favorable decision from the Administrative Court of Appeal in the fourth quarter of 2018. Additional taxes and interest for the years 2014 and 2015 have not been paid by Fortum.

Cases relating to the Swedish hydro real estate tax

Fortum Sverige AB has through an appeal process in Swedish courts claimed that the property tax rate for hydropower plants shall be lowered to the normal 0,5 percent of the tax assessment value. The case concerns the years 2009–2014 and includes several legal arguments for the claim including state aid arguments. Fortum Sverige AB did not receive a permission to appeal from the Supreme Administrative Court in this matter. As the Administrative Court, the Administrative Court of Appeal in Stockholm and the Supreme Administrative Court have handled only the arguments concerning state aid, the case is now transferred back to the Administrative Court concerning the other legal arguments. The disputed amount, excluding interest for the time period, totals approximately SEK 510 million (approximately EUR 50 million).

Moreover, Swedish Fortum companies have appeals for 2011–2016 pending in the Administrative Court relating to the property tax rate for their hydropower plants referring to the same legal grounds. Fortum has paid the real estate tax in accordance with the legislation. If the final court decision would be unfavorable to Fortum, this would not have any result impact for Fortum.

Fortum Sverige AB has in December 2018 filed a complaint to the EU commission regarding the Swedish property tax for hydropower plants regarding 2017 and prior years. Fortum has asked the commission to investigate whether the Swedish legislation regarding the property tax for hydropower plants and the Swedish court decisions are in line with EU state aid rules.

Tax cases in Belgium

Fortum has received income tax assessments in Belgium for the years 2008, 2009, 2010 and 2011. The tax authorities disagree with the tax treatment of Fortum EIF NV. Fortum finds the tax authorities interpretation not to be based on the local regulation and has appealed the decisions. The court of First instance in Antwerpen rejected Fortum's appeal for the years 2008 and 2009 in June 2014. Fortum found the decision unjustifiable and appealed to the Court of Appeal.

In January 2016 Fortum received a favourable decision from the Court of Appeal in which the Court disagreed with the tax authorities' interpretation and the tax assessment for 2008 was nullified. The tax authorities disagreed with the decision and filed an appeal to Hof van Cassatie (Supreme Court) in March 2016. Fortum's

appeals concerning 2009–2011 are still pending and Fortum expects the remaining years to follow the final decision for 2008. Based on legal analysis and a supporting legal opinion, no provision has been accounted for. The amount of additional tax claimed is approximately EUR 36 million for the year 2008, approximately EUR 27 million for the year 2009, approximately EUR 15 million for the year 2010 and approximately EUR 21 million for the year 2011. The tax has already been paid.

In November 2015 Fortum received an income tax assessment from the Belgian tax authorities for the year 2012. The tax authorities disagree with the tax treatment of Fortum Project Finance NV. Fortum finds the tax authorities' interpretation not to be based on the local regulation and has filed an objection against the tax adjustment. In line with treatment of the cases concerning 2008–2011, no provision has been accounted for. The amount of additional tax claimed is approximately EUR 15 million for the year 2012. The tax has already been paid.

For critical accounting estimates regarding uncertain tax positions, see [▶ Note 28](#) Income taxes in balance sheet. See also [▶ Note 13](#) Income tax expense.

In addition to the litigations described above, some Group companies are involved in other routine tax and other disputes incidental to their normal conduct of business. Based on the information currently available, management does not consider the liabilities arising out of such litigations likely to be material to the Group's financial position.

37.2 Associated companies

In Finland, Fortum is participating in the country's fifth nuclear power plant unit, Olkiluoto 3 (OL3), through the shareholding in Teollisuuden Voima Oyj (TVO) with an approximately 25% share representing some 400 MW in capacity.

OL3 was procured as a fixed-price turnkey project from a consortium (Supplier) formed by AREVA GmbH, AREVA NP SAS and Siemens AG. As stipulated in the plant contract, the consortium companies have joint and several liability for the contractual obligations. In accordance with the Supplier's schedule updated in November 2018, regular electricity generation at the plant unit will commence in January 2020. According to the Supplier, nuclear fuel will be loaded into the reactor in June 2019 and the first connection to the grid takes place in October 2019. According to the Supplier's plant ramp-up program the unit will produce 2–4 TWh of electricity, at varying power levels, during the period of time between the first connection to the grid and the start of regular electricity production.

According to the comprehensive settlement agreement signed in March 2018, TVO and the Supplier jointly withdrew the pending arbitration proceedings under the International Chamber of Commerce (ICC) rules with respect to costs and losses incurred in relation to delays in the construction of the OL3 EPR project. In June 2018, the ICC tribunal confirmed the arbitration settlement by a consent award, and the arbitration proceedings were terminated. The parties also withdrew the pending appeals in the General Court of the European Union.

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The settlement agreement between TVO and the plant supplier consortium companies Areva NP, Areva GmbH and Siemens AG as well as with Areva Group parent company Areva SA, a company wholly owned by the French State, concerning the completion of the OL3 EPR project and related disputes entered into force late March 2018.

The settlement agreement stipulates that:

- In order to provide and maintain adequate and competent technical and human resources for the completion of the OL3 EPR project, Areva will source the necessary additional resources from Framatome S.A.S., whose majority owner is Electricité de France (EDF). The supplier consortium companies undertake that the funds dedicated to the completion of the OL3 EPR project will be adequate and will cover all applicable guarantee periods, including setting up a trust mechanism funded by Areva companies to secure the financing of the costs of completion of the OL3 EPR project.
- The turnkey principle of the OL3 EPR plant contract and the joint and several liability of the supplier consortium companies remain in full force. The agreement also noted the plant supplier's schedule at the time the agreement was signed, according to which regular electricity production in the unit will commence in May 2019. The ICC arbitration concerning the costs and losses caused by the delay of the OL3 EPR project is settled by financial compensation of EUR 450 million to be paid to TVO in two installments by the supplier consortium companies.
- The parties withdraw all on-going legal actions related to OL3 EPR, including the ICC arbitration and appeals in the General Court of the European Union.
- The supplier consortium companies are entitled to receive an incentive payment, in a maximum amount of EUR 150 million, upon timely completion of the OL3 EPR project.
- In the event that the supplier consortium companies fail to complete the OL3 EPR project by the end of 2019, they will pay a penalty to TVO for such delay in an amount which will depend on the actual time of completion of the OL3 EPR project and may not exceed EUR 400 million.

TVO received the first payment of EUR 328 million of the settlement amount in March 2018 at the entry into force of the settlement agreement. The second payment of EUR 122 million is payable upon completion of the OL3 EPR project or, in any event, on December 31, 2019 at the latest. The amount corresponding to the total settlement amount has been entered as property, plant and equipment in the TVO Group balance sheet.

In addition to the litigations described above, some Group companies are involved in other routine tax and other disputes incidental to their normal conduct of business. Based on the information currently available, management does not consider the liabilities arising out of such litigations likely to be material to the Group's financial position.

38 Related party transactions

38.1 The Finnish State and companies owned by the Finnish State

At the end of 2018, the Finnish State owned 50.76% of the Company's shares (2017: 50.76%). The Finnish Parliament has authorised the Government to reduce the Finnish State's holding in Fortum Corporation to no less than 50.1% of the share capital and voting rights.

All transactions between Fortum and other companies owned by the Finnish State are on arm's length basis.

38.2 Board of Directors and Fortum Executive Management

The key management personnel of the Fortum Group are the members of Fortum Executive Management and the Board of Directors. Fortum has not been involved in any material transactions with members of the Board of Directors or Fortum Executive Management. No loans exist to any member of the Board of Directors or Fortum Executive Management at 31 December 2018. The total compensation (including pension benefits and social costs) for the key management personnel for 2018 was EUR 9 million (2017: 9).

See [▶ Note 11](#) Employee benefits for further information on the Board of Directors and Fortum Executive Management remuneration and shareholdings.

38.3 Associated companies and joint ventures

In the ordinary course of business Fortum engages in transactions on commercial terms with associated companies and other related parties, which are on same terms as they would be for third parties, except for some associates as discussed later in this note.

Fortum owns shareholdings in associated companies and joint ventures which in turn own hydro and nuclear power plants. Under the consortium agreements, each owner is entitled to electricity in proportion to its share of ownership or other agreements. Each owner is liable for an equivalent portion of costs regardless of output. These associated companies are not profit making, since the owners purchase electricity at production cost including interest costs and production taxes.

For further information on transactions and balances with associated companies and joint ventures, see [▶ Note 19](#) Participations in associated companies and joint ventures.

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38.4 Pension fund

The Fortum pension funds in Finland, Sweden and Norway are stand-alone legal entities which manage pension assets related to part of the pension coverage in Finland, Sweden and Norway. In 2018 Fortum paid a capital contribution of EUR 3 million to the newly established pension fund in Norway. Fortum has not paid contributions to the pension funds in Finland and Sweden neither in 2018 nor in 2017. The assets in the pension fund in Finland include Fortum shares representing 0.04% (2017: 0.04%) of the company's outstanding shares. Real estate mortgages have also been given for a loan from Fortum's Finnish pension fund for EUR 41 million (2017: 41).

39 Events after the balance sheet date

On 1 January 2019, Fortum acquired all remaining C-shares of TVO entitling to the power production of the Meri-Pori coal condensing power plant. Fortum is now entitled to 100% of the power production of the plant, an increase from 67% previously. The Meri-Pori power plant is mainly used in Fingrid's capacity reserve and as back-up capacity. See more information in [▶ Note 19](#) Participations in associated companies and joint ventures.

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40 Subsidiaries by segment on 31 December 2018

C = City Solutions
 CS = Consumer Solutions
 G = Generation
 R = Russia
 O = Other Operations

1) New company
 2) Shares held by the parent company

Company name	Domicile	Segment	Group holding, %
Ekopartnerit Turku Oy	Finland	C	51.0
Fincumet Oy ¹⁾	Finland	C	100.0
Fortum Asiakaspalvelu Oy ²⁾	Finland	CS	100.0
Fortum Assets Oy	Finland	O	100.0
Fortum C&H Oy	Finland	O	100.0
Fortum Environmental Construction Oy	Finland	C	100.0
Fortum Growth Oy	Finland	O	100.0
Fortum Heat and Gas Oy ²⁾	Finland	C, O	100.0
Fortum Markets Oy ²⁾	Finland	CS	100.0
Fortum Norm Oy ²⁾	Finland	O	100.0
Fortum Power and Heat Holding Oy	Finland	G	100.0
Fortum Power and Heat Oy ²⁾	Finland	C, G, O, R	100.0
Fortum Real Estate Oy ²⁾	Finland	O	100.0
Fortum Waste Solutions Oy ²⁾	Finland	C	100.0
Kiinteistö Oy Espoon Energiatalo	Finland	O	100.0
Koillis-Pohjan Energiantuotanto Oy	Finland	G	100.0
Kotimaan Energia Oy	Finland	CS	100.0
Niemen Romukauppa Oy ¹⁾	Finland	C	100.0
NJS-Patentti Oy ¹⁾	Finland	C	100.0
Oy Pauken Ab	Finland	O	100.0
Oy Tersil Ab	Finland	O	100.0
Oy Tertrade Ab	Finland	O	100.0
Vindin Böle Ab/Oy	Finland	O	100.0
Vindin Kalax Ab/Oy	Finland	O	100.0
Vindin Molpe Ab/Oy	Finland	O	100.0
Vindin Pjelas Ab/Oy	Finland	O	100.0
Vindin Poikel Norra Ab/Oy	Finland	O	100.0
Vindin Pörtom Ab/Oy	Finland	O	100.0
Fortum Project Finance N.V. ²⁾	Belgium	O	100.0
Barry Danmark ApS ¹⁾	Denmark	O	100.0
Fortum Energi A/S	Denmark	CS	100.0
Fortum Waste Solutions A/S	Denmark	C	100.0

Company name	Domicile	Segment	Group holding, %
Fortum Waste Solutions OW A/S	Denmark	C	100.0
AS Anne Soojus	Estonia	C	100.0
AS Fortum Tartu	Estonia	C	60.0
AS Tartu Joujaam	Estonia	C	100.0
AS Tartu Keskkatlamaja	Estonia	C	100.0
Fortum CFS Eesti OU	Estonia	O	100.0
Fortum Eesti AS	Estonia	C	100.0
Fortum France S.A.S	France	O	100.0
Fortum Deutschland SE	Germany	O	100.0
Fortum Service Deutschland GmbH	Germany	C	100.0
Plugsurfing GmbH ¹⁾	Germany	O	100.0
Fortum Carlisle Limited	Great Britain	C	100.0
Fortum Energy Ltd	Great Britain	O	100.0
Fortum Glasgow Limited	Great Britain	C	100.0
Fortum O&M (UK) Limited	Great Britain	C	100.0
IVO Energy Limited	Great Britain	G	100.0
Fortum Insurance Ltd	Guernsey	O	100.0
Fortum India Private Limited ²⁾	India	O	100.0
Fortum Solar India Private Limited	India	O	100.0
Fortum Solar Plus Private Limited ¹⁾	India	O	100.0
Fortum Finance Ireland Designated Activity Company ²⁾	Ireland	O	100.0
Fortum P&H Ireland Limited	Ireland	O	100.0
Fortum Participation Ltd	Ireland	O	100.0
Fortum Jelgava, SIA	Latvia	C	100.0
Fortum Latvia SIA	Latvia	C	100.0
SIA BK Energija ¹⁾	Latvia	C	100.0
SIA Energy & Communications ¹⁾	Latvia	C	100.0
SIA Lake Development ¹⁾	Latvia	C	100.0
SIA Sprino ¹⁾	Latvia	C	100.0
UAB Fortum Heat Lietuva	Lithuania	C	100.0
UAB Fortum Klaipeda	Lithuania	C	96.0
UAB Joniskio energija	Lithuania	C	66.2
UAB Svencioniu energija	Lithuania	C	50.0
Fortum Consumer Solutions AS	Norway	CS	100.0
Fortum Forvaltning AS	Norway	O	100.0
Fortum Hedging AS	Norway	CS	100.0
Fortum Kundesenter AS	Norway	CS	100.0

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Basis of preparation

Risks

Income statement

Balance sheet

Off balance sheet items

Group structure and related parties

Company name	Domicile	Segment	Group holding, %
Fortum Markets AS	Norway	CS	100.0
Fortum Oslo Varme AS	Norway	C	50.0
Fortum Tellier AS	Norway	CS	100.0
Fortum Waste Solutions Norway AS	Norway	C	100.0
FOV OT AS ¹⁾	Norway	C	100.0
Fredrikstad EnergiSalg AS	Norway	CS	100.0
Hafslund Strøm AS	Norway	CS	100.0
Hallingkraft AS	Norway	CS	100.0
Mitt Hjem Norge AS	Norway	CS	100.0
NorgesEnergi AS	Norway	CS	100.0
Nygårdsfjellet Vindpark AS	Norway	O	100.0
Oslo Energi AS	Norway	CS	100.0
Solvencia AS	Norway	CS	100.0
Sørfjord Vindpark AS	Norway	O	100.0
Ånstadblåheia Vindpark AS	Norway	O	100.0
AMB Energia Sprzedaż Sp. z o.o.	Poland	CS	100.0
Fortum Customer Services Polska Sp. z o.o.	Poland	CS	100.0
Fortum Marketing and Sales Polska S.A.	Poland	CS	100.0
Fortum Markets Polska S.A.	Poland	CS	100.0
Fortum Network Częstochowa Sp. z o.o.	Poland	C	100.0
Fortum Network Płock Sp. z o.o.	Poland	C	100.0
Fortum Network Wrocław Sp. z o.o.	Poland	C	100.0
Fortum Power and Heat Polska Sp. z o.o.	Poland	C, CS	100.0
Fortum Silesia SA	Poland	C	100.0
Fortum Sprzedaż Sp. z o.o.	Poland	CS	100.0
Rejonowa Spółka Ciepłownicza Sp. z o.o.	Poland	C	100.0
Fortum New Generation I LLC ¹⁾	Russia	R	100.0
Fortum New Generation LLC	Russia	R	100.0
Joint Stock Company Chelyabenergoremont	Russia	R	100.0
LLC Bugulchanskaya Solar power station	Russia	R	100.0
LLC Grachevskaya Solar power station	Russia	R	100.0
LLC Pleshanovskaya Solar power station	Russia	R	100.0
PAO Fortum	Russia	R	98.2
Ural Heat Networks Company Joint Stock Company	Russia	R	100.0
HQ Services Limited ¹⁾	Rwanda	C	49.0
Escandinava de Electricidad S.L.U	Spain	CS	100.0
Blybergs Kraftaktiebolag	Sweden	G	66.7
Brännälven Kraft AB	Sweden	G	67.0
Bullerforsens Kraft Aktiebolag	Sweden	G	88.0
Energibolaget i Sverige Holding AB	Sweden	CS	100.0

Company name	Domicile	Segment	Group holding, %
Energikundservice Sverige AB	Sweden	CS	100.0
Fortum I AB	Sweden	R	100.0
Fortum Fastigheter AB	Sweden	O	100.0
Fortum Markets AB	Sweden	CS	100.0
Fortum Produktionsnät AB	Sweden	G	100.0
Fortum Sweden AB ²⁾	Sweden	O	100.0
Fortum Sverige AB	Sweden	C, G, O	100.0
Fortum Waste Solutions AB	Sweden	C	100.0
Fortum Waste Solutions Holding AB	Sweden	C	100.0
Fortum Vind Norr AB	Sweden	O	100.0
Göta Energi AB	Sweden	CS	100.0
Hafslund Energi AB	Sweden	CS	100.0
LPN Transformator AB ¹⁾	Sweden	G	100.0
Mellansvensk Kraftgrupp Aktiebolag	Sweden	G	86.9
Nordgroup Waste Management AB	Sweden	C	100.0
Oreälvens Kraftaktiebolag	Sweden	G	65.0
SverigesEnergi Elförsäljning AB	Sweden	CS	100.0
Sävar Vindkraft AB ¹⁾	Sweden	O	100.0
Tellier Service AB	Sweden	CS	100.0
Uddeholm Kraft Aktiebolag	Sweden	G	100.0
VG Power Tools AB	Sweden	C	100.0
VG Power Turbo AB	Sweden	C	100.0
Värmlandskraft-OKG-delägarna Aktiebolag	Sweden	G	73.3
FB Generation Services B.V.	The Netherlands	O	100.0
Fortum 2 B.V.	The Netherlands	O	100.0
Fortum 3 B.V.	The Netherlands	O	100.0
Fortum Charge & Drive B.V.	The Netherlands	O	100.0
Fortum Finance B.V.	The Netherlands	O	100.0
Fortum Holding B.V. ²⁾	The Netherlands	C, G, O, CS	100.0
Fortum Hydro B.V.	The Netherlands	O	100.0
Fortum India B.V.	The Netherlands	O	100.0
Fortum Power Holding B.V.	The Netherlands	O	100.0
Fortum Russia B.V.	The Netherlands	R	100.0
Fortum Russia Holding B.V.	The Netherlands	O	100.0
Fortum SAR B.V.	The Netherlands	O	100.0
Fortum Star B.V.	The Netherlands	O	100.0
Fortum Wave Power B.V.	The Netherlands	O	100.0
PolarSolar B.V.	The Netherlands	O	100.0
RPH Investment B.V.	The Netherlands	R	100.0
Valo Ventures I LP Fund ¹⁾	USA	O	99.0

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Financial key figures

Fortum has adopted the IFRS 9 and IFRS 15 standards from 1 January 2018 onwards. Fortum has applied the transition relief for not restating the comparative figures from 2017. See additional information in [▶ Note 1 Accounting policies](#)

For information of Alternative Performance Measures used by Fortum, see [▶ Definitions of key figures](#) and [▶ Note 1 Accounting policies](#).

EUR million or as indicated	2018	2017	Change 18/17 %
Income statement			
Sales	5,242	4,520	16
EBITDA ¹⁾	1,674	1,623	3
Comparable EBITDA	1,523	1,275	19
Operating profit	1,138	1,158	-2
- of sales %	21.7	25.6	
Comparable operating profit	987	811	22
Share of profit/loss of associates and joint ventures	38	148	-74
Profit before income tax	1,040	1,111	-6
- of sales %	19.8	24.6	
Profit for the period	858	882	-3
- of which attributable to owners of the parent	843	866	-3
Financial position and cash flow			
Capital employed	18,170	18,172	0
Interest-bearing net debt	5,509	988	-458
Capital expenditure and gross investments in shares	4,672	1,815	157
- of sales %	89.1	40.2	
Capital expenditure	584	690	-15
Net cash from operating activities	804	993	-19

EUR million or as indicated	2018	2017	Change 18/17 %
Key ratios			
Return on capital employed, %	6.7	7.1	
Return on shareholders' equity, %	6.8	6.6	
Interest coverage	10.0	8.7	
Interest coverage including capitalised borrowing costs	9.2	7.8	
Funds from operations/interest-bearing net debt, %	26.8	83.9	
Gearing, %	46	7	
Comparable net debt/EBITDA	3.6	0.8	
Equity-to-assets ratio, %	54	61	
Other data			
Dividends	977 ²⁾	977	0
Research and development expenditure	56	53	6
- of sales %	1.1	1.2	
Average number of employees	8,767	8,507	

1) EBITDA is defined as Operating profit + Depreciation and amortisation.

2) Board of Directors' proposal for the planned Annual General Meeting on 26 March 2019.

Share key figures

EUR million or as indicated	2018	2017	Change 18/17 %
Data per share			
Earnings per share	0.95	0.98	-3
Cash flow per share	0.91	1.12	-19
Equity per share	13.33	14.69	-9
Dividend per share	1.10 ¹⁾	1.10	0
Payout ratio, %	115.8 ¹⁾	112.2	
Dividend yield, %	5.8 ¹⁾	6.7	
Price/earnings ratio (P/E)	20.1	16.8	
Share prices			
At the end of the period	19.10	16.50	
Average	19.10	15.28	
Lowest	16.43	12.69	
Highest	22.91	18.94	
Other data			
Market capitalisation at the end of the period, EUR million	16,966	14,658	
Trading volumes ²⁾			
Number of shares, 1,000 shares	474,705	582,873	
In relation to weighted average number of shares, %	53.4	65.6	
Number of shares, 1,000 shares	888,294	888,367	
Number of shares excluding own shares, 1,000 shares	N/A	N/A	
Average number of shares, 1,000 shares	888,312	888,367	
Diluted adjusted average number of shares, 1,000 shares	888,312	888,367	

1) Board of Directors' proposal for the Annual General Meeting on 26 March 2019.

2) Trading volumes in the table represent volumes traded on Nasdaq Helsinki. In addition to the Nasdaq Helsinki, Fortum shares were traded on several alternative market places, for example at Boat, Cboe and Turquoise, and on the OTC market as well. In 2018, approximately 68% (2017: 61%) of Fortum's shares were traded on markets other than the Nasdaq Helsinki Ltd.

See [Definitions of key figures](#).

Segment key figures

Sales by segment, EUR million	2018	2017
Generation	1,837	1,677
- of which internal	2	15
City Solutions	1,094	1,015
- of which internal	37	19
Consumer Solutions	1,759	1,097
- of which internal	11	3
Russia	1,069	1,101
- of which internal	0	0
Other Operations	129	102
- of which internal	80	67
Eliminations and Netting of Nord Pool transactions	-646	-470
Total	5,242	4,520

Comparable operating profit by segment, EUR million	2018	2017
Generation	631	478
City Solutions	113	98
Consumer Solutions	53	41
Russia	271	296
Other Operations	-79	-102
Comparable operating profit	987	811
Impairment charges	-4	6
Capital gains and other	102	326
Changes in fair values of derivatives hedging future cash flow	98	14
Nuclear fund adjustment	-45	1
Operating profit	1,138	1,158

Comparable EBITDA by segment, EUR million	2018	2017
Generation	762	603
City Solutions	284	262
Consumer Solutions	110	57
Russia	417	438
Other Operations	-50	-83
Total	1,523	1,275

Depreciation and amortisation, EUR million	2018	2017
Generation	131	125
City Solutions	171	163
Consumer Solutions	57	16
Russia	147	142
Other Operations	30	18
Total	536	464

Share of profit of associates and joint ventures by segment, EUR million	2018	2017
Generation	-72	-1
City Solutions	74	80
Russia	36	31
Other Operations	0	38
Total	38	148

Capital expenditure by segment, EUR million	2018	2017
Generation	186	174
City Solutions	190	170
Consumer Solutions	47	7
Russia	54	152
Other Operations	108	187
Total	584	690

Gross investments in shares by segment, EUR million	2018	2017
Generation	8	90
City Solutions	32	386
Consumer Solutions	0	486
Russia	63	125
Other Operations	3,985	39
Total	4,088	1,125

[Financial key figures](#)
[Share key figures](#)
[Segment key figures](#)
[Definitions of key figures](#)
Gross divestments of shares by segment, EUR million

	2018	2017
Generation	160	0
City Solutions	0	0
Consumer Solutions	0	55
Russia	0	0
Other Operations	147	687
Total	306	742

Comparable net assets by segment, EUR million

	2018	2017
Generation	6,295	5,672
City Solutions	3,743	3,728
Consumer Solutions	648	638
Russia	2,789	3,161
Other Operations	4,264	276
Total	17,739	13,474

Comparable return on net assets by segment, %

	2018	2017
Generation	11.2	8.4
City Solutions	5.0	5.5
Consumer Solutions	7.8	11.7
Russia	10.3	10.1
Other Operations	-4.5	-13.3

Average number of employees

	2018	2017
Generation	1,087	1,036
City Solutions	1,940	1,807
Consumer Solutions	1,473	1,180
Russia	3,378	3,710
Other Operations	888	774
Total	8,767	8,507

Definitions of key figures

Alternative performance measures

Business performance	Definition	Reason to use the measure	Reference to reconciliation
Comparable EBITDA	Operating profit + depreciations and amortisations - items affecting comparability	Comparable EBITDA is representing the underlying cash flow generated by the total Group and segments. Used as a component in the capital structure target of Comparable net debt /EBITDA.	► Note 5 Capital risk management
Comparable operating profit	Operating profit - items affecting comparability	Comparable operating profit is used in financial target setting and forecasting, management's follow up of financial performance and allocation of resources in the group's performance management process.	Income statement
Items affecting comparability	Impairment charges + capital gains and other + changes in fair values of derivatives hedging future cash flow + nuclear fund adjustment	Component used in calculating comparable operating profit and comparable EBITDA.	Income statement
Impairment charges	Impairment charges and related provisions (mainly dismantling), which are adjusted from depreciation and amortisation.	Component used in calculating comparable operating profit and comparable EBITDA.	Income statement
Capital gains and other	Capital gains and transaction costs from acquisitions, which are adjusted from other income and other expenses respectively. Profits from the capital recycling business model are presented in comparable operating profit because the business results are realised through divesting the shareholding, either partially or totally.	Component used in calculating comparable operating profit and comparable EBITDA.	Income statement

Business performance	Definition	Reason to use the measure	Reference to reconciliation
Changes in fair values of derivatives hedging future cash flow	Effects from financial derivatives hedging future cash-flows where hedge accounting is not applied according to IFRS 9, which are adjusted from other income.	Component used in calculating comparable operating profit and comparable EBITDA.	Income statement
Nuclear fund adjustment	Effects from the accounting of Fortum's part of the Finnish Nuclear Waste Fund where the asset in the balance sheet cannot exceed the related liabilities according to IFRIC interpretation 5, which are adjusted from materials and services. In addition adjustments are made for accounting effects from valuation according to IFRS.	Component used in calculating comparable operating profit and comparable EBITDA.	Income statement
Comparable return on net assets, %	$\frac{\text{Comparable operating profit} + \text{share of profit (loss) in associated companies and joint ventures} + \text{adjustment for share of profit of associated companies and joint ventures}}{\text{Comparable net assets average}} \times 100$	Comparable return on net assets is used in financial target setting and forecasting, management's follow up of financial performance and allocation of resources in the group's performance management process.	► Note 6 Segment reporting
Adjustment for Share of profit of associated companies and joint ventures	Adjustment for material items affecting comparability.	Share of profit of associates and joint ventures is included in profit component in the comparable RONA calculation and the adjustments are done based on similar components as in Items affecting comparability.	► Note 6 Segment reporting
Comparable net assets	Non-interest bearing assets + interest-bearing assets related to the Nuclear Waste Fund - non-interest bearing liabilities - provisions (non-interest bearing assets and liabilities do not include finance related items, tax and deferred tax and assets and liabilities from fair valuations of derivatives used for hedging future cash flows).	Comparable net assets is a component in Comparable return on net assets calculation where return on capital allocated directly to the businesses is measured.	► Note 6 Segment reporting

Capital structure	Definition	Reason to use the measure	Reconciliation
Comparable net debt / EBITDA	$\frac{\text{Interest-bearing net debt}}{\text{Comparable EBITDA}}$	Financial targets give guidance on Fortum's view of the company's long-term value creation potential, its growth strategy and business activities. Comparable net debt to EBITDA is one of the Fortum's long-term over-the-cycle financial targets measuring the capital structure of the Group.	► Note 5 Capital risk management
Interest-bearing net debt	Interest-bearing liabilities - liquid funds	Interest-bearing net debt is used in the follow-up of the indebtedness of the group i.e. capital structure especially as a component in the long-term over-the-cycle financial target of Comparable net debt / EBITDA in the Group.	► Note 27 Interest-bearing liabilities
Return on capital employed (ROCE), %	$\frac{\text{Profit before taxes + interest and other financial expenses}}{\text{Capital employed average}} \times 100$	Return on capital employed (ROCE) is a long-term over the cycle financial ratio measuring the profitability and how efficiently invested capital is used. It gives guidance on company's long-term value creation potential, its growth strategy and business activities.	► Note 5 Capital risk management
Capital employed	Total assets - total non-interest bearing liabilities	Capital employed is the book value of the invested capital and it is used as a component when calculating the Return of capital employed in the group.	► Note 5 Capital risk management

Other key figures

Share based key figures

Earnings per share (EPS)	$\frac{\text{Profit for the period - non-controlling interests}}{\text{Average number of shares during the period}}$
Cash flow per share	$\frac{\text{Net cash from operating activities}}{\text{Average number of shares during the period}}$
Equity per share	$\frac{\text{Shareholders' equity}}{\text{Number of shares at the end of the period}}$
Payout ratio, %	$\frac{\text{Dividend per share}}{\text{Earnings per share}} \times 100$
Dividend yield, %	$\frac{\text{Dividend per share}}{\text{Share price at the end of the period}} \times 100$
Price/earnings (P/E) ratio	$\frac{\text{Share price at the end of the period}}{\text{Earnings per share}}$
Average share price	$\frac{\text{Amount traded in euros during the period}}{\text{Number of shares traded during the period}}$
Market capitalisation	Number of shares at the end of the period x share price at the end of the period
Trading volumes	Number of shares traded during the period in relation to the weighted average number of shares during the period

Other key figures

Funds from operations (FFO)	Net cash from operating activities before change in working capital
Capital expenditure	Capitalised investments in property, plant and equipment and intangible assets including maintenance, productivity, growth and investments required by legislation including borrowing costs capitalised during the construction period. Maintenance investments expand the lifetime of an existing asset, maintain usage/availability and/or maintains reliability. Productivity investments improve productivity in an existing asset. Growth investments' purpose is to build new assets and/or to increase customer base within existing businesses. Legislation investments are done at a certain point of time due to legal requirements.
Gross investments in shares	Investments in subsidiary shares, shares in associated companies and other investments. Investments in subsidiary shares are net of cash and grossed with interest-bearing liabilities in the acquired company.
Return on shareholders' equity (ROE), %	$\frac{\text{Profit for the year}}{\text{Total equity average}} \times 100$
Gearing, %	$\frac{\text{Interest-bearing net debt}}{\text{Total equity}} \times 100$
Equity-to-assets ratio, %	$\frac{\text{Total equity including non-controlling interests}}{\text{Total assets}} \times 100$
Interest coverage	$\frac{\text{Operating profit}}{\text{Net interest expenses}}$
Interest coverage including capitalised borrowing costs	$\frac{\text{Operating profit}}{\text{Net interest expenses - capitalised borrowing costs}}$
Average number of employees	Based on monthly average for the whole period

Definitions for tax figures

Effective income tax rate, %	=	$\frac{\text{Income tax expense}}{\text{Profit before income tax}} \times 100$
Comparable effective income tax rate, %	=	$\frac{\text{Income tax expense - effects from tax rate changes and major one time income tax effects}}{\text{Profit before income tax decreased by profits from associated companies and joint ventures as well as tax exempt capital gains or losses}} \times 100$
Weighted average applicable income tax rate	=	Sum of the proportionately weighted share of profits before taxes of each group operating country multiplied with an applicable nominal tax rate of the respective countries.

Parent company financial statements, Finnish GAAP (FAS)

Income statement

EUR million	Note	2018	2017
Sales	2	82	73
Other income	3	8	6
Employee costs	4	-36	-32
Depreciation, amortisation and write-downs	8	-8	-6
Other expenses		-78	-79
Operating profit		-33	-38
Financial income and expenses	6	751	823
Profit before appropriations		719	785
Group contributions ¹⁾		85	157
Profit before income tax		803	943
Income tax expense	7	-5	-10
Profit for the period		798	933

1) Taxable profits transferred from Finnish subsidiaries.

Balance sheet

EUR million	Note	31 Dec 2018	31 Dec 2017
ASSETS			
Non-current assets			
Intangible assets	8	23	10
Property, plant and equipment	8	10	21
Shares in Group companies	8	16,725	16,725
Participations in associated companies	8	0	2
Interest-bearing receivables from Group companies	8	2,954	212
Interest-bearing receivables from associated companies	8	1	15
Other non-current assets	8	0	0
Derivative financial instruments	13, 14	157	242
Deferred tax assets		1	0
Total non-current assets		19,870	17,226
Current assets			
Other current receivables from Group companies	9	99	173
Other current receivables from associated companies	9	0	0
Derivative financial instruments	13, 14	167	132

EUR million	Note	31 Dec 2018	31 Dec 2017
Other current receivables	9	10	14
Deposits and securities (maturity over three months)		27	714
Cash and cash equivalents		132	2,792
Liquid funds		159	3,506
Total current assets		435	3,825
Total assets		20,305	21,052
EQUITY			
Shareholders' equity	10		
Share capital		3,046	3,046
Share premium		2,822	2,822
Hedging reserve		-11	-11
Retained earnings		4,205	4,249
Profit for the period		798	933
Total shareholders' equity		10,859	11,038
Provisions for liabilities and charges		0	0
LIABILITIES			
Non-current liabilities			
External interest-bearing liabilities	11, 13, 14	4,386	3,448
Interest-bearing liabilities to Group companies		3,400	3,290
Interest-bearing liabilities to associated companies		293	285
Derivative financial instruments	13, 14	51	94
Other non-current liabilities		35	44
Total non-current liabilities		8,165	7,160
Current liabilities			
External interest-bearing liabilities	11	1,074	657
Trade and other payables to Group companies	12	13	1,991
Trade and other payables to associated companies	12	2	4
Derivative financial instruments	13, 14	103	102
Trade and other current payables	12	88	100
Total current liabilities		1,281	2,854
Total liabilities		9,446	10,014
Total equity and liabilities		20,305	21,052

Cash flow statement

EUR million	2018	2017
Cash flow from operating activities		
Profit for the period	798	933
Adjustments:		
Income tax expense	5	10
Group contributions	-85	-157
Finance costs - net	-751	-823
Depreciations, amortisation and write-downs	8	6
Operating profit before depreciations (EBITDA)	-24	-32
Non-cash flow items	0	0
Interest and other financial income	18	6
Interest and other financial expenses paid	-104	-101
Dividend income	796	944
Group contribution received	157	145
Realised foreign exchange gains and losses	16	-28
Income taxes paid	-6	23
Funds from operations	853	957
Other short-term receivables increase(-)/decrease(+)	9	-12
Other short-term payables increase(+)/decrease(-)	-4	12
Change in working capital	4	0
Net cash from operating activities	857	957
Cash flow from investing activities		
Capital expenditures	-16	-15
Acquisition of shares and capital contributions in subsidiaries	0	-380
Acquisition of other shares	0	0
Capital returns	0	-
Proceeds from sales of fixed assets	0	0
Change in interest-bearing receivables and other non-current assets	-2,744	504
Net cash used in investing activities	-2,760	109
Cash flow before financing activities	-1,903	1,066

EUR million	2018	2017
Cash flow from financing activities		
Proceeds from long-term liabilities	1,762	35
Payment of long-term liabilities	-530	-482
Change in cash pool liabilities	110	967
Change in short-term liabilities	-1,810	-2,038
Dividends paid	-977	-977
Net cash used in financing activities	-1,444	-2,495
Net increase(+)/decrease(-) in liquid funds	-3,347	-1,429
Liquid funds at the beginning of the period	3,506	4,935
Liquid funds at the end of the period	159	3,506

Notes to the Parent Company Financial Statements, FAS

1 Accounting policies and principles

The financial statements of Fortum Oyj are prepared in accordance with Finnish Accounting Standards (FAS).

1.1 Sales

Sales include sales revenue from actual operations and exchange rate differences on trade receivables, less discounts and indirect taxes such as value added tax.

1.2 Other income

Other income includes gains on the sales of property, plant and equipment and shareholdings, as well as all other operating income not related to the sales of products or services, such as rents.

1.3 Foreign currency items and derivative instruments

Transactions denominated in foreign currencies have been valued using the exchange rate at the date of the transaction. Receivables and liabilities denominated in foreign currencies outstanding on the balance sheet date have been valued using the exchange rate quoted on the balance sheet date. Exchange rate differences have been entered in the financial net in the income statement.

Fortum Oyj enters into derivative contracts mainly for hedging foreign exchange and interest rate exposures in Fortum Group.

Accounting principles of financial derivatives, see ▶ [Note 4](#) Financial risk management, ▶ [Note 15](#) Financial assets and liabilities by categories and ▶ [Note 16](#) Financial assets and liabilities by fair value hierarchy in the Consolidated financial statements.

1.4 Income taxes

Income taxes presented in the income statement consist of accrued taxes for the financial year and tax adjustments for prior years.

1.5 Shares in group companies

The balance sheet value of shares in group companies consists of historical costs less write-downs. If the estimated future cash flows generated by a non-current asset are expected to be permanently lower than the balance of the carrying amount, an adjustment to the value must be made to write-down the difference as an expense. If the basis for the write-down can no longer be justified at the balance sheet date, it must be reversed.

1.6 Property, plant and equipment and depreciation

The balance sheet value of property, plant and equipment consists of historical costs less depreciation and possible impairments. Property, plant and equipment are depreciated using straight-line depreciation based on the expected useful life of the asset.

The depreciation is based on the following expected useful lives:

Buildings and structures	15–40 years
Machinery and equipment	3–15 years
Other intangible assets	5–10 years

1.7 Pension expenses

Statutory pension obligations are covered through a compulsory pension insurance policy or Group's own pension fund. Costs for pension fund are recorded in the income statement based on contributions paid pursuant to the Finnish pension laws and regulations.

1.8 Long-term incentive schemes

Costs related to the Fortum long-term incentive plans are accrued over the earnings period and the related liability is booked to the balance sheet.

1.9 Provisions

Foreseeable future expenses and losses that have no corresponding revenue to which Fortum is committed or obliged to settle, and whose monetary value can be reasonably assessed, are entered as expenses in the income statement and included as provisions in the balance sheet.

1.10 Presentation of the primary statements and notes

Information presented in the notes is given separately for Fortum Group companies and for associated companies of the Group.

2 Sales by market area

EUR million	2018	2017
Finland	52	46
Other countries	30	27
Total	82	73

3 Other income

EUR million	2018	2017
Rental and other income	8	6
Total	8	6

4 Employee costs

EUR million	2018	2017
Personnel expenses		
Wages, salaries and remunerations	26	25
Indirect employee costs		
Pension costs	6	5
Other indirect employee costs	1	1
Other personnel expenses	3	1
Total	36	32

EUR thousand	2018	2017
	Pekka Lundmark, President and CEO	Pekka Lundmark, President and CEO
Compensation for the President and CEO		
Salaries and fringe benefits	1,048	998
Performance bonuses ¹⁾	228	187
Share-based incentives ¹⁾	297	334
Pensions (statutory)	250	231
Pensions (voluntary)	252	229
Social security expenses	36	41
Total	2,112	2,019

1) Based on estimated amounts.

EUR thousand	2018	2017
Compensation for the Board of Directors	483	492

The compensation above is presented on accrual basis. Paid salaries and remunerations for the President and CEO Pekka Lundmark were EUR 1,594 thousand (2017: 1,405).

For the President and CEO Pekka Lundmark the retirement age of old-age pension is 63. The pension obligations are covered through insurance company.

Board members are not in an employment relationship or service contract with Fortum, and they are not given the opportunity to participate in Fortum's STI or LTI programme, nor does Fortum have a pension plan that they can opt to take part in. The compensation of the board members is not tied to the sustainability performance of the Group.

See ▶ **Note 11** Employee benefits and ▶ **Note 31** Pension obligations in the Consolidated financial statements.

	2018	2017
Average number of employees	265	258

5 Auditor's fees

EUR thousand	2018	2017
Audit fees	364	295
Audit related assignments	58	64
Tax assignments	0	0
Other assignments	0	81
Total	422	440

Deloitte Oy is the appointed auditor until the next Annual General Meeting, to be held in 2019. Audit fees include fees for the audit of the consolidated financial statements, review of the interim reports as well as the fees for the audit of Fortum Oyj. Audit related assignments include fees for assurance of sustainability reporting and other assurance and associated services related to the audit. Tax assignments include fees for tax advice services. Other assignments consist of advisory services.

6 Financial income and expenses

EUR million	2018	2017
Dividend income from group companies	796	944
Dividend income from associated companies and other companies	0	0
Interest and other financial income from group companies	16	12
Write-downs of participations in group companies	0	-35
Write-downs of participations in associated companies	-2	-3
Write-downs on loan receivables	-17	-1
Interest and other financial income	0	0
Exchange rate differences	37	22
Changes in fair values of derivatives	1	-16
Interest and other financial expenses to group companies	-2	-1
Interest and other financial expenses	-78	-99
Total	751	823
Interest income	17	13
Interest expenses	-75	-81
Interest costs - net	-58	-68

7 Income tax expense

EUR million	2018	2017
Taxes on regular business operations	-12	-21
Taxes on group contributions	17	31
Total	5	10
Current taxes for the period	5	6
Current taxes for prior periods	0	0
Changes in deferred tax	0	3
Total	5	10

8 Non-current assets

Intangible assets total

EUR million	Intangible assets total
Cost 1 January 2018	39
Additions	20
Disposals	11
Cost 31 December 2018	48
Accumulated depreciation 1 January 2018	30
Disposals	-11
Depreciation for the period	6
Accumulated depreciation 31 December 2018	25
Carrying amount 31 December 2018	23
Carrying amount 31 December 2017	10

Property, plant and equipment

EUR million	Buildings and structures	Machinery and equipment	Advances paid and construction in progress	Total
Cost 1 January 2018	1	7	18	27
Additions and transfers between categories	0	5		5
Disposals	1	3	14	18
Cost 31 December 2018	0	10	4	14
Accumulated depreciation 1 January 2018	1	5	0	6
Disposals	-1	-3		-4
Depreciation for the period	0	2		2
Accumulated depreciation 31 December 2018	0	4	0	4
Carrying amount 31 December 2018	0	5	4	10
Carrying amount 31 December 2017	0	2	18	21

Investments

EUR million	Shares in Group companies	Participation in associated companies	Receivables from Group companies	Receivables from associated companies	Other non-current assets	Total
Cost 1 January 2018	17,847	6	212	16	8	18,089
Additions ¹⁾		0	2,742	0		2,742
Disposals	0					0
Cost 31 December 2018	17,847	6	2,954	17	8	20,831
Accumulated write-downs 1 January 2018	1,123	3	0	1	8	1,135
Impairment charges		2		14		17
Accumulated write-downs 31 December 2018	1,123	6	0	15	8	1,152
Carrying amount 31 December 2018	16,725	0	2,954	1	0	19,680
Carrying amount 31 December 2017	16,725	2	212	15	0	16,954

1) Additions regarding shares comprise acquisitions of shares and capital contributions and reclassification between other non-current assets and shares in Group companies.

9 Other current receivables

EUR million	2018	2017
Other current receivables from group companies		
Trade receivables	10	9
Group contribution and other receivables	85	157
Accrued income and prepaid expenses	5	6
Total	99	173
Other current receivables from associated companies		
Accrued income and prepaid expenses	0	0
Total	0	0
Other current receivables		
Trade receivables	0	0
Other receivables	0	0
Accrued income and prepaid expenses	10	14
Total	10	14

See ▶ **Note 4.5** Liquidity and refinancing risk in the Consolidated financial statements.

10 Changes in shareholders' equity

EUR million	Share capital	Share premium	Hedging reserve	Retained earnings	Total
Total equity 31 December 2017	3,046	2,822	-11	5,182	11,038
Cash dividend				-977	-977
Change in hedging reserve			1		1
Profit for the period				798	798
Total equity 31 December 2018	3,046	2,822	-11	5,002	10,859
Total equity 31 December 2016	3,046	2,822	-23	5,226	11,072
Cash dividend				-977	-977
Change in hedging reserve			11		11
Profit for the period				933	933
Total equity 31 December 2017	3,046	2,822	-11	5,182	11,038

EUR million	2018	2017
Distributable funds		
Retained earnings 31 December	5,002	5,182
Hedging reserve	-11	-11
Distributable funds 31 December	4,991	5,170

11 Interest-bearing liabilities

EUR million	2018	2017
External interest-bearing liabilities ¹⁾		
Bonds	1,746	2,521
Loans from financial institutions	1,775	82
Other long-term interest-bearing debt	865	844
Total long-term interest-bearing debt	4,386	3,448
Current portion of long-term bonds	750	422
Current portion of loans from financial institutions	42	122
Other short-term interest-bearing debt	283	114
Total short-term interest-bearing debt	1,074	657
Total external interest-bearing debt	5,460	4,105

Maturity of external interest-bearing liabilities ¹⁾

EUR million	2018
2019	1,074
2020	27
2021	2,261
2022	1,039
2023	98
2024 and later	962
Total	5,460

See ▶ **Note 4.5** Liquidity and refinancing risk and ▶ **Note 27** Interest-bearing liabilities in the Consolidated financial statements.

EUR million	2018	2017
External interest-bearing liabilities due after five years ¹⁾		
Bonds	97	198
Other long-term liabilities	865	844
Total	962	1,042

EUR million	2018	2017
Other interest-bearing liabilities due after five years		
Interest-bearing liabilities to associated companies	293	285
Total	293	285

1) Does not include liabilities to group and associated companies.

Non-discounted cash flows of interest-bearing liabilities and their maturities, see ▶ **Note 13** Financial derivatives.

12 Trade and other payables

EUR million	2018	2017
Trade and other payables to group companies		
Trade payables	3	3
Deposits from group companies and other liabilities	10	1,987
Accruals and deferred income	0	0
Total	13	1,991
Trade and other payables to associated companies		
Accruals and deferred income	2	4
Total	2	4
Trade and other payables		
Trade payables	11	21
Other liabilities	5	2
Accruals and deferred income	73	76
Total	88	100

13 Financial derivatives

Interest rate and currency derivatives by instrument 2018

EUR million	Notional amount Remaining lifetimes				Fair value		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Forward foreign exchange contracts	0	786	0	9,309	99	83	15
Interest rate swaps	1,515	2,242	225	3,982	159	70	88
Interest rate and currency swaps	383	265		648	66	0	66
Total	10,420	3,293	225	13,938	324	154	170
Of which long-term					157	51	106
Short-term					167	103	64

Interest rate and currency derivatives by instrument 2017

EUR million	Notional amount Remaining lifetimes				Fair value		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Forward foreign exchange contracts	7,790	517		8,307	77	104	-27
Interest rate swaps	305	3,421	102	3,827	205	90	115
Interest rate and currency swaps	311	580		892	92	3	89
Total	8,406	4,518	102	13,025	373	196	177
Of which long-term					242	94	148
Short-term					132	102	29

Maturity analysis of interest-bearing liabilities and derivatives

Amounts disclosed below are non-discounted expected cash flows (future interest payments and amortisations) of interest-bearing liabilities and interest rate and currency derivatives.

EUR million	2018				2017			
	Under 1 year	1–5 years	Over 5 years	Total	Under 1 year	1–5 years	Over 5 years	Total
Interest-bearing liabilities	1,192	3,582	1,437	6,211	2,752	2,613	1,509	6,875
Interest rate and currency derivatives liabilities	8,946	1,159	16	10,121	8,132	1,256	4	9,392
Interest rate and currency derivatives receivables	-9,037	-1,203	-21	-10,260	-8,191	-1,341	-1	-9,534
Total	1,101	3,538	1,433	6,072	2,693	2,529	1,511	6,733

Interest-bearing liabilities include loans from the State Nuclear Waste Management Fund and Teollisuuden Voima Oyj of EUR 1,158 million (2017: 1,129). These loans are renewed yearly and the related interest payments are calculated for ten years in the table above.

14 Derivatives and liabilities by fair value hierarchy

Fair value measurements are classified using a fair value hierarchy i.e. Level 1, Level 2 and Level 3 that reflects the significance of the inputs used in making the measurements. For further information look accounting principles in Fortum consolidated accounts ▶ **Note 16** Financial assets and liabilities by fair value hierarchy.

Derivatives in financial assets

EUR million	Level 1		Level 2		Level 3		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
In non-current assets								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			149	154			149	154
Non-hedge accounting			8	87			8	87
In current assets								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			21	88			21	88
Non-hedge accounting			146	44			146	44
Total	-	-	324	373	-	-	324	373

Derivatives and liabilities at fair value in financial liabilities

EUR million	Level 1		Level 2		Level 3		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
In non-current liabilities								
Interest-bearing liabilities ¹⁾			930	1,037			930	1,037
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			43	47			43	47
Non-hedge accounting			8	47			8	47
In current liabilities								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			5	14			5	14
Non-hedge accounting			98	88			98	88
Total	-	-	1,083	1,233	-	-	1,083	1,233

1) Fair valued part of bond in the fair value hedge relationship.

Net fair value amount of interest rate and currency derivatives is EUR 170 million (2017: 177), including assets EUR 324 million (2017: 373) and liabilities EUR 154 million (2017: 196). Fortum Corporation has cash collaterals based on Credit Support Annex agreements with some counterparties. At the end of December 2018 Fortum Corporation had received EUR 75 million (2017: 113) from Credit Support Annex agreements. The received cash has been booked as a short-term interest-bearing liability.

15 Contingent liabilities

EUR million	2018	2017
On own behalf		
Other contingent liabilities	2	2
On behalf of group companies		
Guarantees	113	221
On behalf of associated companies		
Guarantees on behalf of Swedish associated companies	532	548
Contingent liabilities total	647	771

Operating leases

EUR million	2018	2017
Operating lease commitments		
Due within a year	8	7
Due after one year and within five years	28	28
Due after 5 years	14	18
Total	49	54

16 Related party transactions

See [Note 38](#) Related party transactions in the Consolidated financial statements.

Investments in group companies, associated companies and other holdings

		No. of shares units	Holding %
Investments in group companies			
Fortum Waste Solutions Oy	Finland	3,520,800	100.00
Fortum Asiakaspalvelu Oy	Finland	10,010	100.00
Fortum Heat and Gas Oy	Finland	2,000,000	100.00
Fortum Markets Oy	Finland	24,039	100.00
Fortum Norm Oy	Finland	250	100.00
Fortum Power and Heat Oy	Finland	91,197,543	100.00
Fortum Real Estate Oy	Finland	2,000,000	100.00
Fortum Project Finance N.V.	Belgium	727,820	99.99
Fortum Holding B.V.	The Netherlands	61,062	100.00
Fortum India Private Ltd	India	1	0.10
Fortum Finance Ireland Designated Activity Company	Ireland	25,000	100.00
Fortum Sweden AB	Sweden	1,000	100.00
Investments in associated companies			
AW-Energy Oy	Finland	806	13.60
Wello Oy	Finland	1,100,00	18.60
Other holdings			
Clic Innovation Oy	Finland	100	3.80
East Office of Finnish Industries Oy	Finland	1	5.88
Prototype Carbon Fund	USA	N/A	

Proposal for the use of the profit shown on the balance sheet

The distributable funds of Fortum Corporation as at 31 December 2018 amounted to EUR 4,991,388,741.37 including the profit of the financial period 2018 of EUR 797,840,404.43. The company's liquidity is good and the dividend proposed by the Board of Directors will not compromise the company's liquidity.

Based on the number of registered shares as at 31 January 2019 the total amount of dividend would be EUR 977,123,911.50. The Board of Directors proposes, that the remaining part of the distributable funds be retained in the shareholders' equity.

The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.10 per share be paid for 2018.

Signatures for the operating and financial review and financial statements

Espoo, 31 January 2019

Matti Lievonen

Klaus-Dieter Maubach

Heinz-Werner Binzel

Eva Hamilton

Kim Ignatius

Essimari Kairisto

Anja McAlister

Veli-Matti Reinikkala

Pekka Lundmark
President and CEO

Auditor's report

To the Annual General Meeting of Fortum Oyj

Report on the Audit of Financial Statements

Opinion

We have audited the financial statements of Fortum Oyj (business identity code 1463611-4) for the year ended 31 December, 2018. The financial statements comprise the consolidated balance sheet, consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in total equity, consolidated cash flow statement and notes to the consolidated financial statements, including a summary of significant accounting policies, as well as the parent company's balance sheet, income statement, cash flow statement and notes to the financial statements.

In our opinion

- the consolidated financial statements give a true and fair view of the group's financial position, financial performance and cash flows in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU,
- the financial statements give a true and fair view of the parent company's financial performance and financial position in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements.

Our opinion is consistent with the additional report submitted to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report.

We are independent of the parent company and of the group companies in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

In our best knowledge and understanding, the non-audit services that we have provided to the parent company and group companies are in compliance with laws and regulations applicable in Finland regarding these services, and we have not provided any prohibited non-audit services referred to in Article 5(1) of regulation (EU) 537/2014. The non-audit services that we have provided have been disclosed in [▶ Note 9](#) to the consolidated financial statements

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

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have also addressed the risk of management override of internal controls. This includes consideration of whether there was evidence of management bias that represented a risk of material misstatement due to fraud.

Key audit matter

Uniper Acquisition

Refer to Notes 3 and 19.

- On 26 June 2018, Fortum closed the Uniper SE (Uniper) offer and became the company's largest shareholder. Fortum holds 49.99% of the shares as of 31 December 2018.
- Fortum consolidates Uniper as an associated company from 30 June 2018. The total acquisition cost approximately EUR 4.0 billion, is reported in the 'Participations in associated companies and joint ventures'.
- As a listed company, Uniper publishes its interim reports later than Fortum, Fortum's share of Uniper's results will be accounted for with a timelag of one quarter with potential adjustments. Fortum's financial statements 2018 includes Fortum's share of Uniper's third quarter result.
- Purchase price allocation is still ongoing and it will be completed within the oneyear window from the acquisition date according to IFRS.
- The assessment of the nature of interest in investee as well as the classification of joint arrangements requires management judgement. Due to the size, the Uniper acquisition may have significant effect on Fortum's financial reporting.

How our audit addressed the key audit matter

- We have reviewed the relevant agreements and minutes of the board of directors to recognize the material terms affecting the accounting treatment in the financial statements.
- We have assessed management's approach according to which the acquisition has been accounted in the financial statements as well as methods applied in making the significant judgements relating to the acquisition in line with IFRS.
- We have challenged the management judgement relating to the classification of the acquisition as joint arrangements and assessed the classification, the reporting of the share of profit/loss of associates and joint ventures as well as the accounting treatment of the ongoing purchase price allocation in line with IFRS.
- We assessed the adequacy of related disclosures in the financial statements.

Key audit matter

Valuation of fixed assets and goodwill

Refer to Notes 2, 17 and 18.

- The consolidated balance sheet includes property, plant and equipment amounting to EUR 9,981 million and goodwill amounting to EUR 588 million.
- The main assumptions used in the valuation of energy production property, plant and equipment and goodwill relate to the estimated future operating cash flows and the discount rates.
- In acquisition the assumptions relates to determining the fair values and remaining useful lives of acquired intangible and tangible assets.
- The potential indicators for impairment are among other things changes in electricity and fuel prices, regulatory/political changes relating to energy taxes and price regulations.
- The assumptions used in the valuation of the balances in question require management judgment.
- This matter is a significant risk of material misstatement referred to in EU Regulation No 537/241, point (c) of Article 10(2).

How our audit addressed the key audit matter

- We have evaluated the process how management has assessed the indicators for potential impairment. We have performed audit procedures on impairment models relating to material cash generating units.
- We obtained entity's impairment testing documentation for goodwill and energy production assets when tested and evaluated the rationale of key assumptions applied by management, including commodity price forecasts, profit and cash flow forecasts, terminal values, foreign exchange rates and the selection of discount rates.
- We have compared, that the forecasts used in the impairment testing calculations are based on long term forecast approved by management.
- We challenged management's assumptions and judgments with reference to historical data and, where applicable, external benchmarks.
- We assessed the models used in the impairment testing and carried out our testing for the sensitivity calculations.
- We assessed the adequacy of related disclosures in the financial statements.

Key audit matter

Fair value measurement of derivatives and hedge accounting

Refer to Notes 4, 7, 8, 15 and 16.

- In Fortum's consolidated financial statements total derivative assets amounts to EUR 555 million and total derivative liabilities amounts to EUR 1,191 million. The net effect of changes in fair values of derivatives hedging future cash flow amounts to EUR 98 million in items affecting comparability in the consolidated income statement and the cash flow hedges in other equity components amount to EUR -638 million.
- The fair value and changes in fair values of derivative financial instruments may have significant impacts on Fortum's financial statements. Fortum's business is exposed to fluctuations in prices and volume of commodities used in the production and sales of energy products. The main exposure is toward energy prices. Electricity price risk is hedged by entering into electricity derivative contracts. Fortum uses derivative instruments to reduce the effect of electricity price volatility.

How our audit addressed the key audit matter

- Our audit procedures included an assessment of internal controls over the hedge accounting documentation and effectiveness testing, measurement of fair value measures, and evaluating the methodologies, inputs, judgments made and assumptions used by management in determining fair values.
- For Fortum's fair valuation models, we evaluated rationale of the models and accounting treatment applied. We have compared the assumptions used by management in valuation against externally available market data.
- We have assessed the existence and completeness of outstanding derivative contracts as of 31 December 2018 by requesting confirmations from the counterparties.
- We have assessed that financial instruments included in hedge relationships are accounted for in accordance with IFRS 9.
- We have assessed the adequacy of the presentation for derivative financial instruments and hedge accounting applied in the financial statements.

Key audit matter

Nuclear related assets and liabilities

Refer to Notes 2 and 29.

- Nuclear related assets and liabilities in consolidated balance sheet amount to EUR 858 million.
- Fortum's nuclear related provisions and the related part of the Finnish State Nuclear Waste Management Fund are both presented separately as disclosed in note 29.
- Fortum's share in the Finnish State Nuclear Waste Management Fund is accounted for according to IFRIC 5 which states that the fund assets are measured at the lower of fair value or the value of the related liabilities.
- Due to complexity and materiality, the accounting treatment for nuclear decommissioning is complex and requires application of special accounting practice and management judgment when forming estimates for the basis of accounting such as technical plans, timing, cost estimates and discount rate.

How our audit addressed the key audit matter

- We have assessed Fortum's accounting manual and principles for Nuclear Decommissioning Accounting, whether they are in line with IFRS accounting principles.
- We have assessed the assumptions and judgments made and adopted by the management in the accounting for the nuclear waste provisions and share in state nuclear waste management fund have been based on current legislation and decisions set by Finnish State Nuclear Waste Management Fund.
- We assessed the adequacy of related disclosures in the financial statements.

Responsibilities of the Board of Directors and the President and CEO for the financial statements

The Board of Directors and the President and CEO are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, and of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the President and CEO are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the President and CEO are responsible for assessing the parent company's and the group's ability to continue as going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the parent company or the group or cease operations, or there is no realistic alternative but to do so.

Auditor's responsibilities in the audit of financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the parent company's or the group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of the Board of Directors' and the President and CEO use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists

related to events or conditions that may cast significant doubt on the parent company's or the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the parent or the group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other Reporting Requirements

Information on our audit engagement

We were first appointed as auditors by the Annual General Meeting on 16.3.2006, and our appointment represents a total period of uninterrupted engagement of 12 years.

Other information

The Board of Directors and the President and CEO are responsible for the other information. The other information comprises the Operational and Financial Review and the information included in the Financials, but

does not include the financial statements and our auditor's report thereon. We have obtained the Operating and Financial Review prior to the date of this auditor's report, and the Financials is expected to be made available to us after that date.

Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. With respect to Operating and Financial Review, our responsibility also includes considering whether the Operating and Financial Review has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the Operating and Financial Review is consistent with the information in the financial statements and the Operating and Financial Review has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Other opinions

We support that the financial statements should be adopted. The proposal by the Board of Directors regarding the use of the profit shown on the balance sheet is in compliance with the Limited Liability Companies Act. We support that the Board of Directors of the parent company and the President and CEO should be discharged from liability for the financial period audited by us.

Espoo, 31 January 2019

Deloitte Oy
Audit Firm

Reeta Virolainen
Authorised Public Accountant (KHT)

Financial key figures

Comparability of information presented in tables and graphs

Fortum announced the sale of Swedish Distribution business in March 2015. After the divestment of the Swedish Distribution business Fortum has no electricity distribution operations and therefore Distribution segment was treated as discontinued operations in 2015, with restatement of year 2014, according to IFRS 5 Non-current Assets Held for Sale and Discontinued Operations

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 Stockholm Exergi AB (publ) (previously AB Fortum Värme Holding samägt med Stockholms stad) in the consolidated financial statements. From 1 January 2014 onwards Stockholm Exergi is treated as a joint venture and thus consolidated with equity method. Before the change the company was consolidated as a subsidiary with 50% minority interest.

Fortum has adopted the IFRS 9 and IFRS 15 standards from 1 January 2018 onwards. Fortum has applied the transition relief for not restating the comparative figures from 2017. See additional information in [▶ Note 1 Accounting policies](#).

For information of Alternative Performance Measures used by Fortum, see [▶ Definitions of key figures](#) and [▶ Note 1 Accounting policies](#).

EUR million or as indicated	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change 18/17 %
Income statement											
Sales total Fortum	5,435	6,296	6,161	6,159	5,309	4,751	3,702	3,632	4,520	5,242	16
Sales continuing operations						4,088	3,459	3,632	4,520	5,242	16
EBITDA total Fortum ¹⁾	2,292	2,271	3,008	2,538	2,129	3,954	4,640	1,006	1,623	1,674	3
EBITDA continuing operations						1,673	196	1,006	1,623	1,674	3
Comparable EBITDA total Fortum	2,398	2,396	2,374	2,416	1,975	1,873	1,265	1,015	1,275	1,523	19
Comparable EBITDA continuing operations						1,457	1,102	1,015	1,275	1,523	19
Operating profit total Fortum	1,782	1,708	2,402	1,874	1,508	3,428	4,245	633	1,158	1,138	-2
- of sales %	32.8	27.1	39.0	30.4	28.4	72.2	114.7	17.4	25.6	21.7	
Operating profit continuing operations						1,296	-150	633	1,158	1,138	-2
- of sales %						31.7	-4.3	17.4	25.6	21.7	
Comparable operating profit total Fortum	1,888	1,833	1,802	1,752	1,403	1,351	922	644	811	987	22
Comparable operating profit continuing operations						1,085	808	644	811	987	22
Share of profit/loss of associates and joint ventures total Fortum	21	62	91	23	178	149	20	131	148	38	-74
Profit before income tax total Fortum	1,636	1,615	2,228	1,586	1,398	3,360	4,088	595	1,111	1,040	-6
- of sales %	30.1	25.7	36.2	25.8	26.3	70.7	110.4	16.4	24.6	19.8	
Profit before income tax continuing operations						1,232	-305	595	1,111	1,040	-6
- of sales %						30.1	-8.8	16.4	24.6	19.8	
Profit for the period total Fortum	1,351	1,354	1,862	1,512	1,212	3,161	4,142	504	882	858	-3
- of which attributable to owners of the parent	1,312	1,300	1,769	1,416	1,204	3,154	4,138	496	866	843	-3
Profit for the period continuing operations						1,089	-228	504	882	858	-3
- of which attributable to owners of the parent						1,081	-231	496	866	843	-3

Financial key figures

Share key figures

Segment key figures

Operational key figures

EUR million or as indicated	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change 18/17 %
Financial position and cash flow											
Capital employed total Fortum	15,350	16,124	17,931	19,420	19,183	17,918	19,870	18,649	18,172	18,170	0
Interest-bearing net debt	5,969	6,826	7,023	7,814	7,793	4,217	-2,195	-48	988	5,509	-458
Interest-bearing net debt without Värme financing					6,658	3,664	N/A	N/A	N/A	N/A	
Capital expenditure and gross investments in shares total Fortum	929	1,249	1,482	1,574	1,020	843	669	1,435	1,815	4,672	157
- of sales %	17.1	19.8	24.1	25.6	19.2	17.7	18.1	39.5	40.2	89.1	
Capital expenditure and gross investments in shares continuing operations						695	625	1,435	1,815	4,672	157
Capital expenditure total Fortum	862	1,222	1,408	1,558	1,005	774	626	591	690	584	-15
Capital expenditure continuing operations						626	582	591	690	584	-15
Net cash from operating activities total Fortum	2,264	1,437	1,613	1,382	1,548	1,762	1,381	621	993	804	-19
Net cash from operating activities continuing operations						1,406	1,228	621	993	804	-19
Key ratios											
Return on capital employed total Fortum, %	12.1	11.6	14.8	10.2	9.0	19.5	22.7	4.0	7.1	6.7	
Return on shareholders' equity total Fortum, %	16.0	15.7	19.7	14.6	12.0	30.0	33.4	3.7	6.6	6.8	
Interest coverage total Fortum	12.4	13.7	10.5	7.6	6.7	19.9	27.6	4.6	8.7	10.0	
Interest coverage including capitalised borrowing costs total Fortum	10.3	10.0	8.5	5.7	5.3	15.7	21.5	4.1	7.8	9.2	
Funds from operations/interest-bearing net debt total Fortum, %	37.6	20.5	21.5	19.9	18.8	42.9	-59.7	-1,503.4	83.9	26.8	
Funds from operations/interest-bearing net debt without Värme financing total Fortum, %					22.1	49.3	N/A	N/A	N/A	N/A	
Gearing, %	70	78	69	73	77	39	-16	0	7	46	
Comparable net debt/EBITDA total Fortum	2.5	2.8	3.0	3.2	3.9	2.3	-1.7	0.0	0.8	3.6	
Comparable net debt/EBITDA without Värme financing					3.4	2.0	N/A	N/A	N/A	N/A	
Equity-to-assets ratio, %	43	40	44	43	43	51	61	62	61	54	
Other data											
Dividends	888	888	888	888	977	1,155	977	977	977	977 ²⁾	0
Research and development expenditure	30	30	38	41	49	41	47	52	53	56	6
- of sales %	0.5	0.5	0.6	0.7	0.9	1.0	1.4	1.4	1.2	1.1	
Average number of employees total Fortum	13,278	11,156	11,010	10,600	9,532	8,821	8,193	7,994	8,507	8,767	
Average number of employees continuing operations						8,329	8,009	7,994	8,507	8,767	

1) EBITDA is defined as Operating profit + Depreciation and amortisation.

2) Board of Directors' proposal for the planned Annual General Meeting on 26 March 2019.

 See [Definitions of key figures](#).

[Financial key figures](#)
[Share key figures](#)
[Segment key figures](#)
[Operational key figures](#)

Share key figures

EUR million or as indicated	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change 18/17 %
Data per share											
Earnings per share total Fortum	1.48	1.46	1.99	1.59	1.36	3.55	4.66	0.56	0.98	0.95	-3
Earnings per share continuing operations						1.22	-0.26	0.56	0.98	0.95	-3
Earnings per share discontinued operations	-	-	-	-	-	2.33	4.92	-	-	-	
Diluted earnings per share total Fortum	1.48	1.46	1.99	1.59	1.36	3.55	4.66	0.56	0.98	0.95	-3
Diluted earnings per share continuing operations						1.22	-0.26	0.56	0.98	0.95	-3
Diluted earnings per share discontinued operations	-	-	-	-	-	2.33	4.92	-	-	-	
Cash flow per share total Fortum	2.55	1.62	1.82	1.56	1.74	1.98	1.55	0.70	1.12	0.91	-19
Cash flow per share continuing operations						1.38	1.38	0.70	1.12	0.91	-19
Equity per share	9.04	9.24	10.84	11.30	11.28	12.23	15.53	15.15	14.69	13.33	-9
Dividend per share	1.00	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10 ¹⁾	0
Extra dividend						0.20	-	-	-	-	
Payout ratio, %	67.6	68.5	50.3	62.9	80.9	36.6	23.6	196.4	112.2	115.8 ¹⁾	
Dividend yield, %	5.3	4.4	6.1	7.1	6.6	7.2	7.9	7.5	6.7	5.8 ¹⁾	
Price/earnings ratio (P/E)	12.8	15.4	8.3	8.9	12.2	5.1	3.0	26.1	16.8	20.1	
Share prices											
At the end of the period	18.97	22.53	16.49	14.15	16.63	17.97	13.92	14.57	16.50	19.10	
Average	15.91	19.05	19.77	15.66	15.11	17.89	16.29	13.56	15.28	19.10	
Lowest	12.60	17.18	15.53	12.81	13.10	15.13	12.92	10.99	12.69	16.43	
Highest	19.20	22.69	24.09	19.36	18.18	20.32	21.59	15.74	18.94	22.91	
Other data											
Market capitalisation at the end of the period, EUR million	16,852	20,015	14,649	12,570	14,774	15,964	12,366	12,944	14,658	16,966	
Trading volumes²⁾											
Number of shares, 1,000 shares	580,899	493,375	524,858	494,765	465,004	454,796	541,858	611,572	582,873	474,705	
In relation to weighted average number of shares, %	65.4	55.5	59.1	55.7	52.3	51.2	61.0	68.8	65.6	53.4	
Number of shares, 1,000 shares	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,294	
Number of shares excluding own shares, 1,000 shares	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Average number of shares, 1,000 shares	888,230	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,312	
Diluted adjusted average number of shares, 1,000 shares	888,230	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,312	

1) Board of Directors' proposal for the Annual General Meeting on 26 March 2019.

2) Trading volumes in the table represent volumes traded on Nasdaq Helsinki. In addition to the Nasdaq Helsinki, Fortum shares were traded on several alternative market places, for example at Boat, Cboe and Turquoise, and on the OTC market as well. In 2018, approximately 68% (2017: 61%) of Fortum's shares were traded on markets other than the Nasdaq Helsinki Ltd.

See [Definitions of key figures](#).

Segment key figures

Fortum renewed its business structure as of 1 March 2014. The reorganisation led to a change in Fortum's external financial reporting structure as previously separately reported segments Heat and Electricity Sales were combined into one segment: Heat, Electricity Sales and Solutions.

Fortum has applied new IFRS 10 Consolidated financial statements and IFRS 11 Joint arrangements from 1 January 2014. The effect of applying the new standards to Fortum Group financial information relates to Stockholm Exergi AB (publ) (previously AB Fortum Värme Holding samägt med Stockholms stad), that is treated as a joint venture and thus consolidated with equity method from 1 January 2014 onwards. Before the change Stockholm Exergi was consolidated as a subsidiary with 50% minority interest.

Fortum announced the sale of Swedish Distribution business in March 2015. After the divestment of the Swedish Distribution business Fortum does not have any distribution operations and therefore Distribution segment has been treated as discontinued operations in 2015 with restatement of year 2014, according to IFRS 5 Non-current Assets Held for Sale and Discontinued Operations.

Fortum reorganised its operating structure as of 1 April 2016. The business divisions are: Generation (mainly the former Power and Technology); City Solutions (mainly the former Heat, Electricity Sales and Solutions) and Russia. Because of the minor financial impact, the comparable segment information for 2015 was not restated.

As of 1 March 2017, the City Solutions division was divided into two divisions: City Solutions and Consumer Solutions, both reported as separate reporting segments. Fortum has restated its 2016 comparison segment reporting figures in accordance with the new organisation structure. See more information in [▶ Note 6 Segment reporting](#).

Fortum has adopted the IFRS 9 and IFRS 15 standards from 1 January 2018 onwards. Fortum has applied the transition relief for not restating the comparative figures from 2017. See additional information in [▶ Note 1 Accounting policies](#).

Sales by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	2,531	2,702	2,481	2,415	2,252	2,156	1,722	1,657	1,677	1,837
- of which internal	254	-281	-24	296	69	85	83	15	15	2
City Solutions					1,516	1,332	1,187	782	1,015	1,094
- of which internal					87	34	-13	1	19	37
Heat	1,399	1,770	1,737	1,628						
- of which internal	23	-8	8	18						
Consumer Solutions								668	1,097	1,759
- of which internal								2	3	11
Electricity Sales	1,449	1,798	900	722						
- of which internal	67	158	95	55						
Russia	632	804	920	1,030	1,119	1,055	893	896	1,101	1,069
- of which internal	-	-	-	-	-	0	0	0	0	0
Other Operations	71	51	108	137	63	58	114	92	102	129
- of which internal	-5	169	115	-66	54	44	75	61	67	80
Distribution	800	963	973	1,070	1,064					
- of which internal	13	18	15	37	19					
Eliminations and Netting of Nord Pool transactions	-1,447	-1,792	-958	-843	-706	-513	-458	-463	-470	-646
Total for continuing operations	5,435	6,296	6,161	6,159	5,309	4,088	3,459	3,632	4,520	5,242
Discontinued operations						751	274			
Eliminations ¹⁾						-89	-31			
Total						4,751	3,702	3,632	4,520	5,242

1) Sales to and from discontinued operations.

[Financial key figures](#)
[Share key figures](#)
[Segment key figures](#)
[Operational key figures](#)

Comparable operating profit by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	1,454	1,298	1,201	1,146	859	877	561	417	478	631
City Solutions					109	104	108	64	98	113
Heat	231	275	278	271						
Consumer Solutions								48	41	53
Electricity Sales	22	11	27	39						
Russia	-20	8	74	68	156	161	201	191	296	271
Other Operations	-61	-66	-73	-92	-54	-57	-63	-77	-102	-79
Distribution	262	307	295	320	332					
Comparable operating profit	1,888	1,833	1,802	1,752	1,403	1,085	808	644	811	987
Impairment charges							-918	27	6	-4
Capital gains and other	29	93	284	155	61	305	22	38	326	102
Changes in fair values of derivatives hedging future cash flow								-65	14	98
Nuclear fund adjustment								-11	1	-45
Other items affecting comparability ¹⁾	-135	-218	316	-33	45	-94	-62			
Operating profit, continuing operations	1,782	1,708	2,402	1,874	1,508	1,296	-150	633	1,158	1,138
Discontinued operations						2,132	4,395			
Operating profit						3,428	4,245	633	1,158	1,138

1) Other items affecting comparability comprise Changes in fair values of derivatives hedging future cash flow and Nuclear fund adjustment.

Comparable EBITDA by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2016	2018
Generation	1,547	1,398	1,310	1,260	1,007	998	680	527	603	762
City Solutions					211	204	209	186	262	284
Heat	393	462	471	481						
Consumer Solutions								55	57	110
Electricity Sales	28	13	29	40						
Russia	55	94	148	189	258	304	267	312	438	417
Other Operations	-51	-56	-66	-83	-49	-49	-53	-64	-83	-50
Distribution	426	485	482	529	548					
Total for continuing operations	2,398	2,396	2,374	2,416	1,975	1,457	1,102	1,015	1,275	1,523
Discontinued operations						416	163			
Total						1,873	1,265	1,015	1,275	1,523

Financial key figures

Share key figures

Segment key figures

Operational key figures

Depreciation and amortisation, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	93	100	109	114	148	121	118	110	125	131
City Solutions					102	100	101	121	163	171
Heat	162	187	193	210						
Consumer Solutions								7	16	57
Electricity Sales	6	2	2	1						
Russia	75	86	108	121	150	147	117	123	142	147
Other Operations	10	10	7	9	5	8	10	13	18	30
Distribution	164	178	187	209	216					
Total for continuing operations	510	563	606	664	621	377	346	373	464	536
Discontinued operations						150	50			
Total						526	395	373	464	536

Share of profit of associates and joint ventures by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	-35	-25	3	-12	4	-14	-111	-34	-1	-72
City Solutions					91	88	59	76	80	74
Heat	30	31	19	20						
Electricity Sales	0	1	2	0						
Russia	20	8	30	27	46	35	32	38	31	36
Other Operations	-4	28	23	-20	32	37	40	51	38	0
Distribution	10	19	14	8	4					
Total for continuing operations	21	62	91	23	178	146	20	131	148	38
Discontinued operations						3	0			
Total						149	20	131	148	38

Capital expenditure by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	96	97	131	190	179	197	187	196	174	186
City Solutions					123	86	105	109	170	190
Heat	358	304	297	464						
Consumer Solutions								3	7	47
Electricity Sales	1	0	5	1						
Russia	215	599	670	568	435	340	285	201	152	54
Other Operations	4	9	16	11	12	3	6	83	187	108
Distribution	188	213	289	324	255					
Total for continuing operations	862	1,222	1,408	1,558	1,005	626	582	591	690	584
Discontinued operations						147	44			

Financial key figures

Share key figures

Segment key figures

Operational key figures

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total						774	626	591	690	584
Gross investments in shares by segment, EUR million										
Generation	57	25	17	-	2	2	16	7	90	8
City Solutions					11	37	23	698	386	32
Heat	1	1	32	10						
Consumer Solutions								117	486	0
Russia	3	-	24	-	0	27	0	0	125	63
Other Operations	1	1	1	6	2	4	4	22	39	3,985
Distribution	5	0	-	-	0					
Total for continuing operations	67	27	74	16	15	69	43	844	1,125	4,088
Discontinued operations						0	0			
Total						69	43	844	1,125	4,088
Gross divestments of shares by segment, EUR million										
Generation	10	0	3	102	79	67	0	0	0	160
City Solutions					11	446	27	33	0	0
Heat	1	52	203	269						
Consumer Solutions								1	55	0
Electricity Sales	-	-	16	2						
Russia	-	43	23	-	-	0	0	127	0	0
Other Operations	2	6	0	0	-	2	-	0	687	147
Distribution	1	46	323	37	52					
Total for continuing operations	14	147	568	410	142	515	27	161	742	306
Discontinued operations						2,681	6,369			
Total						3,196	6,395	161	742	306
Comparable net assets by segment, EUR million										
Generation							5,931	5,815	5,672	6,295
City Solutions							2,182	2,873	3,728	3,743
Consumer Solutions								154	638	648
Russia							2,561	3,284	3,161	2,789
Other Operations							258	514	276	4,264
Total for continuing operations							10,932	12,641	13,474	17,739

Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards. Net assets until 2015 are disclosed below.

Net assets by segment, EUR million	2009	2010	2011	2012	2013	2014	2015 ¹⁾
Generation	5,494	5,806	6,247	6,389	6,355	6,001	5,913
City Solutions					2,295	2,112	2,170
Heat	3,787	4,182	4,191	4,286			
Electricity Sales	125	210	11	51			
Russia	2,260	2,817	3,273	3,848	3,846	2,597	2,561
Other Operations	382	29	208	158	295	496	291
Distribution	3,299	3,683	3,589	3,889	3,745		
Total for continuing operations	15,347	16,727	17,519	18,621	16,537	11,206	10,934
Net assets related to discontinued operations						2,615	
Total						13,820	10,934

1) Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards.

Comparable return on net assets by segment, %	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	26.4	22.3	19.9	18.5	13.8	14.2	9.5	6.9	8.4	11.2
City Solutions					8.7	8.7	7.9	5.9	5.5	5.0
Heat	7.6	7.7	7.4	7.0						
Consumer Solutions								44.3	11.7	7.8
Electricity Sales	18.6	9.3	33.5	203.1						
Russia	0.0	0.7	3.5	2.7	5.2	5.6	8.2	8.0	10.1	10.3
Distribution ¹⁾	8.6	9.3	8.6	8.8	8.8	9.3				

1) Classified as discontinued operations from 2014 onwards.

Return on net assets by segment, %	2009	2010	2011	2012	2013	2014	2015 ¹⁾
Generation	24.5	19.5	24.6	18.7	14.5	13.6	-8.5
City Solutions					9.7	19.1	7.7
Heat	7.9	8.4	9.9	8.8			
Electricity Sales	28.9	38.4	4.2	152.3			
Russia	0.0	2.4	3.5	3.0	5.2	5.6	8.3
Distribution ²⁾	8.7	9.7	13.7	9.1	9.3	73.6	

1) Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards.

2) Classified as discontinued operations from 2014 onwards.

Financial key figures

Share key figures

Segment key figures

Operational key figures

Average number of employees	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	2,068	1,891	1,873	1,896	1,900	1,685	1,389	1,064	1,036	1,087
City Solutions					2,051	1,913	1,458	1,529	1,807	1,940
Heat	2,652	2,482	2,682	2,354						
Consumer Solutions								877	1,180	1,473
Electricity Sales	629	538	510	515						
Russia	6,170	4,555	4,436	4,301	4,245	4,196	4,180	3,814	3,710	3,378
Other Operations	593	592	607	661	550	536	983	711	774	888
Distribution	1,166	1,098	902	873	786					
Total for continuing operations	13,278	11,156	11,010	10,600	9,532	8,329	8,009	7,994	8,507	8,767
Discontinued operations						492				
Total						8,821				

Financial key figures

Share key figures

Segment key figures

Operational key figures

Power generation capacity by segment, MW

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	9,709	9,728	9,752	9,702	9,475	9,063	8,046	8,039	7,862	7,867
Heat	1,446	1,600	1,670	1,569						
City Solutions					793	803	743	760	775	788
Russia	2,785	2,785	3,404	3,404	4,250	4,758	4,903	4,482	4,794	4,912
Other Operations								53	292	157
Total	13,940	14,113	14,826	14,675	14,518	14,624	13,692	13,334	13,722	13,724

Heat production capacity by segment, MW

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Generation	250	250	250	250	250	0				
Heat	10,284	10,448	10,375	8,785						
City Solutions					4,317	3,936	3,915	3,818	4,671	4,780
Russia	13,796	13,796	14,107	13,396	13,466	13,466	12,696	9,920	10,094	10,229
Total	24,330	24,494	24,732	22,431	18,033	17,402	16,611	13,738	14,765	15,009

Fortum's power generation capacity by type and area, MW	Finland		Sweden		Russia		Poland		Other		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Hydropower	1,548	1,547	3,124	3,125	0	0	0	0	0	0	4,672	4,672
Nuclear power	1,485	1,480	1,334	1,334	0	0	0	0	0	0	2,819	2,814
Combined heat and power	452	452	9	9	4,843	4,760	186	186	139	128	5,629	5,534
Condensing power	376	376	0	0	0	0	0	0	0	0	376	376
Wind power	0	0	75	75	35	0	0	0	84	32	194	107
Solar power	0	0	0	0	35	35	0	0	0	185	35	220
Total	3,860	3,854	4,542	4,543	4,912	4,794	186	186	223	345	13,724	13,722

Fortum's heat production capacity by area, MW	Finland		Sweden		Russia		Poland		Other		Total	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Heat	1,993	1,941	35	35	10,229	10,094	782	786	1,971	1,909	15,009	14,765

Financial key figures

Share key figures

Segment key figures

Operational key figures

Sales

Fortum's total power and heat sales in EU and Norway, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Power sales	2,802	3,110	2,868	2,700	2,462	2,344	1,921	1,893	2,244	2 922
Heat sales	1,095	1,309	1,278	1,201	538	468	423	449	524	615

Fortum's total power and heat sales in Russia, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Power sales	390	505	590	713	822	758	661	691	837	872
Heat sales	219	287	324	300	290	285	228	199	258	193

Fortum's total power sales by area, TWh	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Finland	26.1	30.7	24.6	21.6	23.4	21.6	22.3	22.8	22.5	23.1
Sweden	26.9	28.3	29.4	30.1	23.3	28.2	29.8	28.8	30.8	29.7
Norway								1.5	7.2	15.3
Russia	19.5	18.7	20.2	23.3	25.6	26.5	29.4	29.5	30.5	34.1
Other countries	3.2	3.2	3.6	3.8	4.3	3.8	2.8	2.1	2.9	1.8
Total	75.7	80.9	77.8	78.8	76.6	80.1	84.3	84.7	93.9	104.0

Fortum's total heat sales by area, TWh	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Finland	8.0	9.6	8.5	5.8	5.5	3.2	3.1	3.6	3.9	3.8
Russia	25.6	26.8	26.7	26.4	24.1	26.0	25.4	20.7	19.8	20.7
Sweden	9.8	10.9	8.5	8.5	-	-	-	0.1	0.3	0.3
Poland	3.7	4.0	4.3	4.3	4.1	3.4	3.4	3.6	3.7	3.5
Other countries	3.5	3.6	3.4	2.9	3.1	2.8	1.2	1.4	2.2	3.2
Total	50.6	54.9	51.4	47.9	36.8	35.4	33.2	29.4	29.9	31.5

Volume of distributed electricity in distribution networks, TWh	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Finland	9.4	10.0	9.5	9.8	9.5	2.8	-	-	-	-
Sweden	14.0	15.2	14.2	14.4	14.1	13.7	6.4	-	-	-
Norway	2.3	2.5	2.3	2.4	2.5	1.1	-	-	-	-
Estonia	0.2	0.2	0.1	0.0	-	-	-	-	-	-
Total	25.9	27.9	26.1	26.6	26.1	17.6	6.4	-	-	-

Quarterly financial information

Note: Quarterly financial information is unaudited.

Selected data based on quarterly consolidated income statement

EUR million	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017	Q1/2018	Q2/2018	Q3/2018	Q4/2018	2018
IS Sales	1,232	937	919	1,432	4,520	1,585	1,087	971	1,599	5,242
Comparable EBITDA	423	219	210	424	1,275	538	282	230	473	1,523
IS Comparable operating profit	313	109	94	295	811	405	153	96	333	987
IS Operating profit	389	66	387	315	1,158	482	256	91	309	1,138
IS Share of profit/loss of associates and joint ventures	59	35	21	34	148	47	24	12	-44	38
IS Finance costs - net	-36	-52	-58	-49	-195	-36	-39	-58	-4	-136
IS Profit before income tax	412	49	351	300	1,111	493	241	45	261	1,040
IS Income tax expense	-72	-118	4	-43	-229	-94	-25	1	-64	-181
IS Profit for the period	340	-69	355	257	882	400	215	46	197	858
IS Non-controlling interests	-5	0	2	-12	-16	-16	1	5	-5	-15
IS Profit for the period, owners of the parent	335	-70	357	244	866	384	216	51	192	843
Earnings per share for profit attributable to the equity owners of the company (EUR per share)										
Basic	0.38	-0.08	0.40	0.28	0.98	0.43	0.24	0.05	0.22	0.95

Quarterly sales by segment

EUR million	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017	Q1/2018	Q2/2018	Q3/2018	Q4/2018	2018
Generation ¹⁾	474	402	367	433	1,677	497	425	359	555	1,837
City Solutions ¹⁾	290	205	179	340	1,015	375	187	174	358	1,094
Consumer Solutions	242	164	238	453	1,097	547	326	332	555	1,759
Russia	349	238	200	314	1,101	336	228	200	305	1,069
Other Operations ¹⁾	24	24	25	30	102	32	33	30	34	129
Netting of Nord Pool transactions ²⁾	-118	-73	-73	-103	-367	-161	-92	-105	-157	-516
Eliminations	-29	-23	-17	-34	-103	-41	-20	-18	-52	-130
IS Total	1,232	937	919	1,432	4,520	1,585	1,087	971	1,599	5,242

1) Sales, both internal and external, includes effects from realised hedging contracts. Effect on sales can be negative or positive depending on the average contract price and realised spot price.

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

Quarterly comparable operating profit by segments

EUR million	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017	Q1/2018	Q2/2018	Q3/2018	Q4/2018	2018
Generation	136	78	104	160	478	220	152	70	189	631
City Solutions	56	1	-20	61	98	87	-21	-22	68	113
Consumer Solutions	12	6	5	18	41	17	11	7	17	53
Russia	132	53	26	84	296	104	37	40	89	271
Other Operations	-24	-28	-21	-28	-102	-23	-27	1	-30	-79
IS Comparable operating profit	313	109	94	295	811	405	153	96	333	987
Impairment charges	0	0	0	6	6	0	0	0	-4	-4
Capital gains and other	1	1	317	8	326	26	76	1	-1	102
Changes in fair values of derivatives hedging future cash flow	74	-46	-19	5	14	54	49	-8	2	98
Nuclear fund adjustment	2	4	-5	1	1	-4	-22	2	-21	-45
IS Operating profit	389	66	387	315	1,158	482	256	91	309	1,138

The first and last quarters of the year are usually the strongest quarters for power and heat businesses.

Investor information

Fortum 2018 reporting entity comprises CEO's Business Review, Financials, Corporate Governance Statement and Remuneration Statement, Tax Footprint as well as Sustainability.

Annual General Meeting 2019

The Annual General Meeting 2019 of Fortum Corporation will be held on Tuesday, 26 March 2019, starting at 11:00 EET at Finlandia Hall, address: Mannerheimintie 13 e, Helsinki, Finland. The reception of shareholders who have registered for the meeting will commence at 9.30 EET.

Payment of dividends

The Board of Directors proposes to the Annual General Meeting that Fortum Corporation pays a dividend of EUR 1.10 per share for 2018, totalling approximately EUR 977 million based on the registered shares as of 31 January 2019. The possible dividend related dates planned for 2019 are:

- the ex-dividend date 27 March 2019,
- the record date for dividend payment 28 March 2019 and
- the dividend payment date 4 April 2019.

Financial information in 2019

Fortum will publish three interim reports in 2019:

- January–March interim report on 26 April
- January–June half year financial review on 19 July, and
- January–September on 24 October.

The reports are published at approximately 9:00 EET in Finnish and English, and are available on Fortum's website at www.fortum.com/investors.

Fortum's management hosts regular press conferences, targeted at analysts and the media. Webcasts of these conferences are available online at www.fortum.com/investors. Management also gives interviews on a one-on-one and group basis. Fortum observes closed and silent period of 30 days prior to publishing its results.

Fortum share basics

Listed on Nasdaq Helsinki

Trading ticker: FORTUM

Number of shares, 31 January 2019: 888,294,465

Sector: Utilities

Fortum's activities in capital markets during 2018

Fortum's Investor Relations activities cover equity and fixed-income markets to ensure full and fair valuation of the Company's shares, access to funding sources and stable bond pricing. The key task of Investor Relations is to provide correct, adequate and up-to-date information regularly and equally to all market participants. By doing this, Investor Relations aims to minimise the investor's risk and reduce the share's volatility. Investors and analysts primarily are met on a regular basis in Europe and North America.

In 2018, Fortum met approximately 500 professional equity investors individually or in group meetings and at investor conferences and maintained regular contact with equity research analysts at investment banks and brokerage firms.

