Financials

Part of Stora Enso's Annual Report 2018



THE RENEWABLE MATERIALS COMPANY

storaenso



Dividend proposal per share

EUR 0.50

Operational ROCE

15.5%

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Unaudited

Limited assurance

In this report: This publication consists of both audited and unaudited contents. The audited parts include the consolidated financial statements, the notes to the financial statements, and the Board of Directors' proposal for the distribution of dividend. The unaudited parts – such as the Stora Enso in 2018, the Report of the Board of Directors, Extract from the parent company Stora Enso Oyj financial statements, Stora Enso in capital markets, and Stora Enso as a taxpayer – are marked with a symbol on the top of the page. The contents of Stora Enso as a taxpayer have been assured by an independent third-party assurance provider with a level of Limited Assurance. The official audited financial statements in Finnish and an unofficial Swedish translation can be found on the company's website › storaenso.com/download-centre

Stora Enso in 2018

Why to invest in Stora Enso

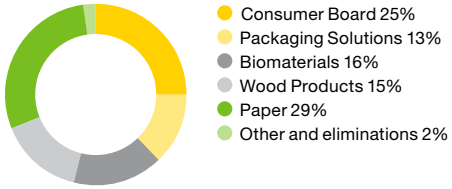
Part of the bioeconomy, Stora Enso is a leading provider of renewable solutions in packaging, biomaterials, wooden constructions, and paper globally. We believe that everything that is made from fossil-based materials today can be made from a tree tomorrow. Stora Enso is well-positioned for profitable growth: we estimate our annual sales to increase by 4–6%, excluding Paper and have a target of above 13% for operational return on capital employed (ROCE) for the Group. We have a strong cash flow generation and we aim to maintain the capex at the targeted level, at or below depreciation and depletion over the business cycle. Stora Enso is well within the targeted levels of debt to equity (less than 60%) and net debt to operational EBITDA (below 2.0x). Stora Enso has a dividend policy to distribute 50% of earnings per share (EPS) over the cycle.

Stora Enso shares are listed on Nasdaq Helsinki Oy (STEAV, STERV) and Nasdaq Stockholm AB (STE A, STE R). In addition, the shares are traded in the USA as ADRs (SEOAY).

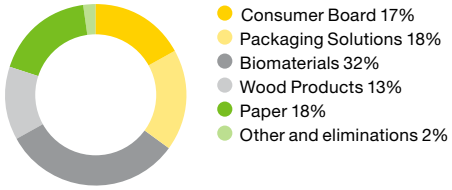
Key figures

	2018	2017	Change	Target
Sales, EUR million	10 486	10 045	4.4%	
Operational EBITDA, EUR million	1 878	1 587	18.3%	
Operational EBIT, EUR million	1 325	1 004	32%	
Operational EBIT margin	12.6%	10.0%		
Operating profit (IFRS), EUR million	1 390	904	53.7%	
Net profit for the period, EUR million	988	614	61.0%	
Net interest-bearing liabilities, EUR million	2 092	2 253	-7.1%	
Operational ROCE, %	15.5%	11.9%		>13%
EPS (basic), EUR	1.28	1	62.5%	
Net debt/last 12 months' operational EBITDA ratio	1.1	1.4		<2.0
Net debt/equity ratio	0.31	0.38		<0.60
Fixed costs to sales, %	23.6%	25.1%		<20%

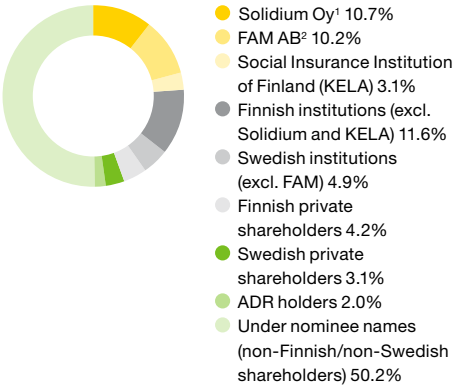
Sales 2018



Operational EBIT 2018



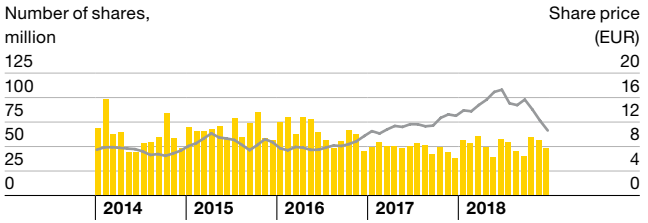
Ownership distribution, % of shares held



[1] Entirely owned by the Finnish state.
[2] As confirmed to Stora Enso.

Share price performance and volumes

Helsinki, Stora Enso R



Report of the Board of Directors

Stora Enso introduction

Part of the bioeconomy, Stora Enso (the Group or the Company) is a leading global provider of renewable solutions in packaging, biomaterials, wooden constructions and papers. Our customers include packaging manufacturers, brand owners, paper and board producers, publishers, retailers, printing houses, converters, and joinery and construction companies.

Our fibre-based materials are renewable and recyclable. Our solutions offer low-carbon alternatives to products based on fossil fuels and other non-renewable materials. We believe that everything that is made from fossil-based materials today can be made from a tree tomorrow.

We make every effort to use 100% of a tree for our products as well as for producing bioenergy. In production, we are driving down the use of fossil fuels and pushing towards carbon neutrality as much as it is technically and commercially feasible. We practice and promote sustainable forestry, and work to ensure that more trees are planted than are harvested.

Stora Enso has some 26 000 employees. Our sales in 2018 were EUR 10.5 billion, with an operational EBIT of EUR 1.3 billion. Stora Enso shares are listed on Nasdaq Helsinki Oy (STEAV, STERV) and Nasdaq Stockholm AB (STE A, STE R).

Markets and deliveries

Demand for cartonboard increased by 2% in Western Europe and continued to grow strongly in Eastern Europe, reaching almost 5% growth in 2018. Demand for cartonboard in North America decreased slightly by 1% and demand in Asia Pacific declined 2% after a long period of strong demand growth. This was due to a 5% market decline in China.

Containerboard demand was healthy in 2018. However, the annual average growth rate decreased slightly towards the end of the year due to global economic uncertainties related to e.g. trade dispute among other factors. Demand growth of corrugated board was strong; the annual average growth rate in our European focus countries was almost 3%.

World chemical market pulp demand slowed down from previous year and rose approximately 1.2% during 2018. Softwood pulp demand contracted by 2.5%, and hardwood pulp demand grew by 3.7% compared to 2017. Global demand increased in Europe and China and was stable or declined in other regions. The global increase in supply was again concentrated on the hardwood pulp segment.

Strong market and record high price levels were supported by numerous unexpected disruptions in the supply side over the year, especially in the softwood pulp sector. New capacity and substitution from softwood to hardwood pulp kept the hardwood pulp demand strong. High inventories and weakness in the Chinese paper and board sector started to contract pulp demand in the latter part of the year.

Global market pulp capacity rose around 4.7%, equivalent to 3.1 million tonnes in 2018. Hardwood capacity increased by 5.7% or 2.1 million tonnes. Major increases took place in Asia and Latin America. Softwood capacity expansion accounted 3.5% equivalent to 1 million tonnes mainly in Europe. The overall demand-capacity balance stood at 88%, 4 percent points down from 2017.

Softwood sawn demand remained good in 2018, but with some slowdown in Europe towards the year-end. Market demand in the USA was also good, driving prices to historically high levels during the summer months. Overall market demand was favourable in most markets, but overall uncertainty in global economy was visible in the latter part of the year. The Australian sawn wood market remained active with increased prices, and market was struggling with undersupply for most of the year. Japanese housing market was somewhat below the 2017 level and the market remained overstocked in some products. There was a slight increase in European sawn softwood production, driven by growing consumption in sub region and increasing overseas exports.

Structural erosion of paper demand continued in Europe and North America during 2018. European paper demand was 6% weaker than in 2017. However, European supply and demand was balanced especially in newsprint and uncoated magazine paper grades as result of substantial capacity closures. In North America demand declined by 4% compared to 2017. In Asia demand declined 2%. Global paper consumption was 4% lower than 2017. However, variation between paper grades was wide. Global demand for uncoated fine paper was stable, whereas newsprint declined by 8%.

Deliveries and production

	2018	2017	Change % 2018–2017
Consumer board deliveries, 1 000 tonnes	2 914	2 816	3.5%
Consumer board production, 1 000 tonnes	2 922	2 871	1.8%
Containerboard external deliveries, 1 000 tonnes	985	1 023	-3.8%
Containerboard production, 1 000 tonnes	1 320	1 333	-1.0%
Corrugated packaging deliveries, million m^2	1 059	1 103	-4.0%
Market pulp external deliveries, 1 000 tonnes	2 017	2 135	-5.5%
Wood product deliveries, 1 000 m^3	5 095	5 097	0.0%
Paper deliveries, 1 000 tonnes	4 591	4 713	-2.6%
Paper production, 1 000 tonnes	4 633	4 672	-0.8%

Estimated consumption of board, pulp, sawn softwood, and paper in 2018

Tonnes, million	Europe	North America	Asia and Oceania
Consumer board	11.2	9.2	26.9
Containerboard	33.5	32.1	80.9
Corrugated board (billion m^2)[1]	10.5	n/a	75.2
Chemical market pulp	18.3	7.6	32.2
Sawn softwood (million m^3)	96.5	99.5	n/a
Newsprint	5.5	2.7	9.9
Uncoated magazine paper	3.1	1.3	0.2
Coated magazine paper	4.6	2.3	3.1
Coated fine paper	4.7	3.5	10.8
Uncoated fine paper	7.3	7.5	20.6

[1] European focus markets (Baltics, FI, PL, RU, SE) and China.
Source: Pöyry, ICCA, RISI, Numera, Euro-Graph, PPPC, Stora Enso, UNECE

The Group's consumer board deliveries totalled 2 914 000 tonnes, which is 98 000 tonnes or 3.5% higher compared to a year ago. This was mainly due to increased volumes in Europe. External containerboard deliveries decreased by 38 000 tonnes or 3.8%, from 1 023 000 tonnes to 985 000 tonnes, mainly due to the investment shutdown at Heinola fluting mill during 2018. Corrugated board deliveries decreased slightly to 1 059 000 m^2. Market pulp deliveries decreased by 118 000 tonnes or 5.5% to 2 017 000 tonnes, due to challenges in Nordic wood sourcing in the beginning of the year, and lower deliveries from Montes del Plata pulp mill. Wood products deliveries remained unchanged at 5 095 000 m^3. Paper deliveries totalled 4 591 000 tonnes, down 122 000 tonnes or 2.6% from 2017, negatively impacted by the shutdown of the paper machine 8 at Kvarnsveden Mill.

Operational key figures, items affecting comparability and other non-IFRS measures

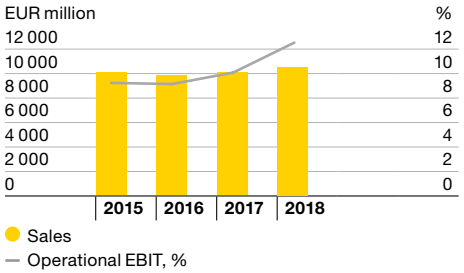
The list of Stora Enso's non-IFRS measures and the calculation of our key figures are presented at the end of the Report of the Board of Directors. See also the chapter Non-IFRS measures at the end of this report.

Financial results – Group

Sales at EUR 10 486 (10 045) million were 4.4% higher than a year earlier, mainly due to higher sales prices and active mix management in all divisions. The impact of the foreign exchange rate movements on sales was EUR 149 million negative. Sales excluding the paper business increased by 4.1%.

Operational EBIT at EUR 1 325 (1 004) million increased 32.0% or EUR 321 million and represents a margin of 12.6% (10.0%).

Sales and operational EBIT



Improved sales prices and active mix management in all divisions increased operational EBIT by EUR 795 million. Variable costs were EUR 387 million higher, especially wood costs as well as higher pulp, chemical, and transportation costs. Fixed costs increased EUR 55 million, mainly due to higher personnel and maintenance costs. The net foreign exchange impact decreased operational EBIT by EUR 34 million and the operational result from equity accounted investments was EUR 8 million lower. The positive impact from lower depreciation was EUR 20 million.

The share of the operational results of equity accounted investments amounted to EUR 81 (89) million, with the main contributions from Bergvik Skog and Tornator.

The IFRS operating profit includes a negative net effect of fair valuations of EUR 6 (negative 7) million from the accounting of share-based compensation and CO_2 emission rights. In addition, the IFRS operating profit includes a negative net effect of EUR 2 (negative 6) million from IAS 41 forest valuation from subsidiaries and joint operations and also a positive net effect of EUR 53 (negative 3) million from Stora Enso's share of net financial items, taxes and IAS 41 forest valuations of equity accounted investments. The positive impact came mainly from an increase in fair valuation of forests of the Nordic equity accounted investment Bergvik.

Fixed asset impairments amounted to EUR 1 (27) million.

The Group recorded items affecting comparability (IAC) with a positive impact of EUR 20 (negative 84) million on its IFRS operating profit and a negative impact of EUR 27 (positive 11) million on income taxes. The IAC's relate to Stora Enso's share of the disposal gain of EUR 47 million from associated company Bergvik Skog's Latvian subsidiary and the divestment of the wood supply company in Rosário do Sul, Brazil to Copa Florestal III FIP Multiestrategia. The latter transaction resulted in a loss of EUR 28 million, due to cumulative currency translation adjustment being released from equity through P&L at closing in Q2 2018. The negative impact on income taxes relates to a provision because of an ongoing dispute in Sweden concerning interest deductions for years 2013–2016.

The IFRS operating profit was EUR 1 390 (904) million.

Segment share of operational EBIT, IAC, fair valuations and non-operational items and operating profit/loss

	Year Ended 31 December					
	Operational EBIT		IAC, Fair Valuations and Non-Operational items		Operating Profit/Loss	
EUR million	2018	2017	2018	2017	2018	2017
Consumer Board	231	285	-1	-32	230	253
Packaging Solutions	245	170	-1	-4	244	166
Biomaterials	427	264	-3	-10	425	254
Wood Products	165	111	-1	-9	164	102
Paper	234	128	0	-22	234	106
Other	23	46	71	-23	93	23
Total	**1 325**	**1 004**	**65**	**-100**	**1 390**	**904**
Net financial items					-180	-162
Profit before Tax					**1 210**	**742**
Income tax expense					-221	-128
Net Profit					**988**	**614**

Operational EBIT comprises the operating profit excluding IAC and fair valuations of the segments and Stora Enso's share of the operating profit excluding IAC and fair valuations of its equity accounted investments (EAI).
IAC = Items affecting comparability. These are exceptional transactions that are not related to recurring business operations. The most common IAC's are capital gains and losses relating to disposal of fixed assets, impairments or impairment reversals, disposal gains and losses relating to group companies, environmental provisions, provisions for planned restructurings, other provisions and penalties. Items affecting comparability are normally disclosed individually if they exceed one cent per share.
Fair valuations and non-operational items include equity incentive schemes and related hedges, CO_2 emission rights, valuations of biological assets and the Group's share of tax and net financial items of EAI.

Items affecting comparability, fair valuations and non-operational items

	Year Ended 31 December	
EUR million	2018	2017
Impairments and impairment reversals of intangible asset and property, plant and equipment and biological assets	0	-8
Restructuring costs excluding fixed asset impairments	0	-14
Disposals	20	-28
Other	0	-34
Items affecting comparability	20	-84
Fair valuations and non-operational items	45	-16
Total	**65**	**-100**

Segment share of operative assets, operative liabilities and operating capital

	Year Ended 31 December					
	Operative Assets		Operative Liabilities		Operating Capital	
EUR million	2018	2017	2018	2017	2018	2017
Consumer Board	2 486	2 477	535	537	1 951	1 940
Packaging Solutions	1 138	1 100	215	223	923	877
Biomaterials	2 722	2 578	260	253	2 462	2 325
Wood Products	866	789	245	238	621	551
Paper	1 588	1 561	792	811	796	750
Other and eliminations	2 668	2 339	466	389	2 202	1 950
Total	**11 468**	**10 844**	**2 513**	**2 451**	**8 955**	**8 393**

Key figures

	2018	2017	2016
Sales, EUR million	10 486	10 045	9 802
Operational EBIT, EUR million	1 325	1 004	884
Operational EBIT margin	12.6%	10.0%	9.0%
Operating profit (IFRS), EUR million	1 390	904	783
Operating margin (IFRS)	13.3%	9.0%	8.0%
Return on equity (ROE)	15.5%	10.3%	7.2%
Operational ROCE	15.5%	11.9%	10.2%
Debt/equity ratio	0.31	0.38	0.47
EPS (basic), EUR	1.28	0.79	0.59
EPS excluding IAC, EUR	1.29	0.89	0.65
Dividend and distribution per share[1], EUR	0.50	0.41	0.37
Payout ratio, excluding IAC	38.8%	46.1%	56.9%
Payout ratio (IFRS)	39.1%	51.9%	62.7%
Dividend and distribution yield, (R share)	5.0%	3.1%	3.6%
Price/earnings (R share), excluding IAC	7.82	14.90	15.70
Equity per share, EUR	8.51	7.62	7.36
Market capitalisation 31 Dec, EUR million	8 123	10 422	8 085
Closing price 31 Dec, A/R share, EUR	11.05/10.09	13.20/13.22	10.40/10.21
Average price, A/R share, EUR	16.36/14.61	11.93/11.54	8.50/7.88
Number of shares 31 Dec (thousands)	788 620	788 620	788 620
Trading volume A shares (thousands)	3 068	6 768	1 254
% of total number of A shares	1.7%	3.8%	0.7%
Trading volume R shares (thousands)	610 300	571 717	765 122
% of total number of R shares	99.7%	93.4%	125.0%
Average number of shares, basic (thousands)	788 620	788 620	788 620
Average number of shares, diluted (thousands)	789 883	790 024	789 888

[1] See the Board of Directors' proposal for dividend distribution.

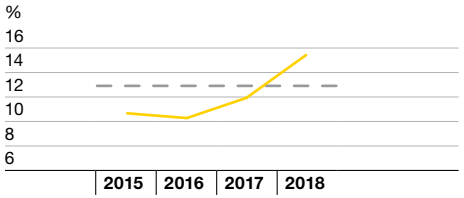
Net financial expenses at EUR 180 (162) million were EUR 18 million higher than a year ago. The increase was mainly due to the net foreign exchange loss of EUR 33 (gain of EUR 34) million coming from the revaluation of foreign currency net debt and related foreign-currency hedges in subsidiaries and joint operations. Net interest expenses at EUR 129 million decreased by EUR 10 million mainly due to reduced average debt levels and lower bank fee amortisation. Other net financial expenses at EUR 18 million were EUR 39 million lower than a year ago mainly due to the absence of bond repurchases related financial expenses that were recorded in 2017.

The net tax charge totalled EUR 221 (128) million, equivalent to an effective tax rate of 18.3% (17.3%), as described in more detail in Note 9 Income taxes, of the Consolidated Financial Statements.

The loss attributable to non-controlling interests was EUR 24 (11) million, leaving a profit of EUR 1 013 (625) million attributable to Company shareholders.

Earnings per share excluding items affecting comparability were EUR 1.29 (0.89) and including items affecting comparability EUR 1.28 (0.79). Operational return on capital employed was 15.5% (11.9%).

Operational ROCE



The Group capital employed was EUR 8 824 million on 31 December 2018, an increase of EUR 516 million on a year earlier.

Breakdown of Capital Employed Change

EUR million	Capital Employed
31 December 2017	**8 308**
Capital expenditure less depreciation	59
Impairments and reversal of impairments	-1
Fair valuation of biological assets	-2
Costs related to growth of biological assets	-66
Available-for-sale: operative (mainly PVO)	104
Equity accounted investments	186
Net liabilities in defined benefit plans	-27
Operative working capital and other interest-free items, net	384
Net tax liabilities	-54
Translation difference	-81
Other changes	14
31 December 2018	**8 824**

Financing

Cash flow from operations was EUR 1 365 (1 492) million and cash flow after investing activities was EUR 811 (825) million. Working capital increased by EUR 428 (decreased 37) million, inventories increased by EUR 267 million and short-term receivables by EUR 179 million having a negative impact into working capital. Payments related to the previously announced provisions were EUR 19 million.

Operative Cash Flow

EUR million	2018	2017
Operational EBITDA	1 878	1 587
IAC on operational EBITDA	20	-76
Other adjustments	-104	-56
Change in working capital	-428	37
Cash Flow from Operations	**1 365**	**1 492**
Cash spent on fixed and biological assets	-525	-658
Acquisitions of equity accounted investments	-29	-9
Cash Flow after Investing Activities	**811**	**825**

At the end of the period, net interest-bearing liabilities of the Group were EUR 2 092 (2 253) million. Cash and cash equivalents net of bank overdrafts amounted to EUR 1 128 (603) million.

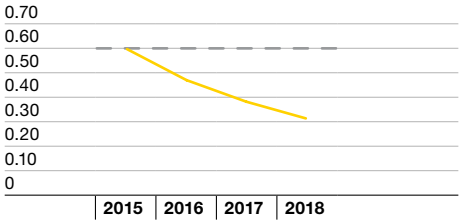
During the third quarter of 2018, Fitch Ratings assigned Stora Enso Oyj an investment grade credit rating of BBB- with stable outlook highlighting Stora Enso's improved cash flow generation and strengthened balance sheet. In the fourth quarter of 2018, Moody's Investors Service also assigned Stora Enso Oyj an investment grade credit rating by upgrading the long-term issuer rating from Ba1 to Baa3 with stable outlook.

During 2018 Stora Enso also launched a Green Bond Framework as part of its Sustainable Finance approach. The ambition is to offer a loan-format to support sustainability-focused fixed income investors and to report the direct environmental impacts of some investments and business activities.

Stora Enso has EUR 600 million committed revolving credit facility that was fully undrawn at the year-end. Additionally, Stora Enso has access to various long-term sources of funding up to EUR 1 000 (900) million.

The debt/equity ratio at 31 December 2018 was 0.31 (0.38). The ratio of net debt to the last 12 months' operational EBITDA was 1.1, compared to the ratio of 1.4 at the end of the previous year.

Debt/equity ratio



The fair valuation of cash flow hedges and equity investments fair valued through other comprehensive income in accordance with IFRS 9 increased equity by EUR 75 (increase EUR 69) million mainly due to higher fair valuation of Group's shareholding in Pohjolan Voima Oy and net gains from outstanding commodity hedges recorded in other comprehensive income partly offset by net loss from outstanding foreign-currency cash flow hedges.

At the end of the year, the ratings for Stora Enso's rated bonds were as follows:

Rating agency	Long/short-term rating	Valid from
Fitch Ratings	BBB- (stable)	8 August 2018
Moody's	Baa3 (stable) / P-3	1 November 2018

Financial results – Segments

Consumer Board division

The ambition of the Consumer Board division is to be the global leader in high-quality virgin fibre cartonboard. We aim to be the preferred partner of customers and brand owners in premium end-use packaging and graphical segments. Our wide board and barrier coating selection is suitable for consumer packaging for liquid, food, pharmaceutical and luxury goods.

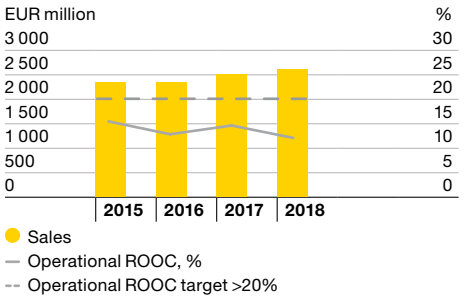
EUR million	2018	2017
Sales	2 622	2 516
Operational EBITDA	423	477
Operational EBITDA margin	16.1%	19.0%
Operational EBIT	231	285
Operational EBIT margin	8.8%	11.3%
Operational ROOC	11.9%	14.6%
Cash flow from operations	339	458
Cash flow after investing activities	177	218
Board deliveries, 1 000 tonnes	2 914	2 816
Board production, 1 000 tonnes	2 922	2 871

Consumer Board division sales at EUR 2 622 (2 516) million grew over 4%. Sales volumes increased driven by strong operational performance. Average price per ton improved, due to price increases and favourable sales mix development. Currency impact on sales was negative EUR 22 million.

Operational EBIT at EUR 231 (285) million decreased 19%, due to significantly higher raw material prices for wood, pulp, and chemicals. This could not be fully compensated through sales price increases as most of the Consumer Board contracts are long-term. Fixed costs decreased as a result of cost saving actions and the weakening of the Swedish crown.

Sales and operational ROOC

Consumer Board



Packaging Solutions division

The Packaging Solutions division provides fibre-based board materials and corrugated packaging products and services that are designed for a wide array of applications. Our renewable high-end packaging solutions serve leading converters, brand owners and retailers – including those in e-commerce that are looking to optimise performance, drive innovation and improve their sustainability.

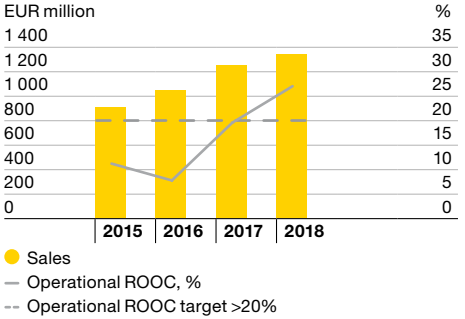
EUR million	2018	2017
Sales	1 344	1 255
Operational EBITDA	313	240
Operational EBITDA margin	23.3%	19.1%
Operational EBIT	245	170
Operational EBIT margin	18.2%	13.5%
Operational ROOC	27.2%	19.6%
Cash flow from operations	272	249
Cash flow after investing activities	172	156
Board deliveries, 1 000 tonnes	985	1 023
Board production, 1 000 tonnes	1 320	1 333
Corrugated packaging deliveries, million m^2	1 059	1 103
Corrugated packaging production, million m^2	1 048	1 102

Packaging Solutions division sales were EUR 1 344 (1 255) million, all time high annual sales and up 7% compared to 2017. The increase was driven by higher sales prices in all businesses and sales mix improvements, which were partly offset by lower volumes and currency impact.

Operational EBIT at EUR 245 (170) million was also all time high and 44% up from the previous year, due to significantly higher sales prices. Operational EBIT was negatively impacted by higher raw material costs in Europe, lower volumes due to investment shut down at Heinola Mill, and higher fixed costs in China Packaging.

Sales and operational ROOC

Packaging Solutions



Biomaterials division

The Biomaterials division offers a wide variety of pulp grades to meet the demands of paper, board, tissue, textile and hygiene product producers. We are maximising the business potential of the by-products extracted in our processes, such as tall oil and turpentine from biomass. Based on our strong innovation approach, all fractions of biomass, like sugars and lignin, hold substantial potential for use in various applications.

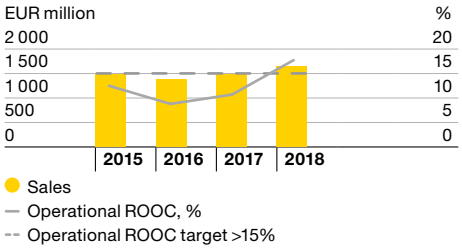
EUR million	2018	2017
Sales	1 635	1 483
Operational EBITDA	550	409
Operational EBITDA margin	33.6%	27.6%
Operational EBIT	427	264
Operational EBIT margin	26.1%	17.8%
Operational ROOC	17.9%	10.5%
Cash flow from operations	438	404
Cash flow after investing activities	327	271
Pulp deliveries, 1 000 tonnes	2 432	2 597

Biomaterials division sales were EUR 1 635 (1 483) million, up 10% due to significantly higher pulp sales prices in all grades. Delivery volumes were lower, and currencies had a negative impact to sales.

Operational EBIT at EUR 427 (264) million was 62% up from previous year, due to significantly higher sales prices in all grades. Operational EBIT was negatively impacted by higher wood, chemical and energy costs. Fixed costs were higher due to higher maintenance costs. Foreign exchange rates had a negative impact on operational EBIT.

Sales and operational ROOC

Biomaterials



Wood Products division

The Wood Products division is a leading provider of innovative wood-based solutions. The product range covers all areas of construction, including massive wooden elements and wooden components. It also includes a variety of sawn timber goods and pellets for sustainable heating. The emerging product range of Biocomposites addresses the opportunities to replace plastics in consumer goods and creates potential in various demanding exterior applications in a cost-competitive way.

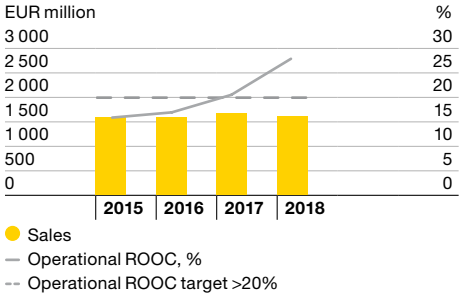
EUR million	2018	2017
Sales	1 622	1 669
Operational EBITDA	199	147
Operational EBITDA margin	12.3%	8.8%
Operational EBIT	165	111
Operational EBIT margin	10.2%	6.7%
Operational ROOC	28.1%	20.5%
Cash flow from operations	147	152
Cash flow after investing activities	80	90
Deliveries, 1 000 m^3	4 932	4 926

Wood Products division sales were EUR 1 622 (1 669) million. Comparable sales grew 5% excluding the Puumerkki divestment in November 2017 and the transfer of the Baltic wood supply operations to Segment Other in the second quarter of 2017. The growth was mainly due to higher sales prices and the ramp-ups of the Varkaus laminated veneer lumber (LVL) mill in Finland and the modernisation and expansion of the Murów sawmill in Poland.

Operational EBIT at EUR 165 (111) million was all time high and 49% up from previous year. Higher sales prices and higher volumes had a positive impact. The impact of higher wood costs in Nordics, Baltics and Russia was more than offset by lower wood costs in Central Europe. Logistics and fixed costs were higher than previous year.

Sales and operational ROOC

Wood Products



Paper division

Stora Enso is the second largest paper producer in Europe with an established customer base and a wide product portfolio for print and office use. Customers benefit from Stora Enso's broad selection of papers made from recycled and virgin fibre as well as our valuable industry experience, know-how and customer support.

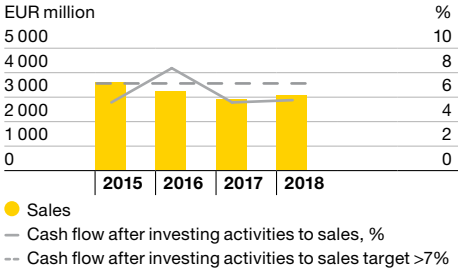
EUR million	2018	2017
Sales	3 066	2 920
Operational EBITDA	345	239
Operational EBITDA margin	11.3%	8.2%
Operational EBIT	234	128
Operational EBIT margin	7.6%	4.4%
Operational ROOC	30.2%	14.8%
Cash flow from operations	222	259
Cash flow after investing activities	175	160
Cash flow after investing activities to sales	5.7%	5.5%
Paper deliveries, 1 000 tonnes	4 591	4 713
Paper production, 1 000 tonnes	4 633	4 672

Paper division sales were EUR 3 066 (2 920) million, up 5% due to price increases in local currencies. Foreign exchange had EUR 43 million negative impact on sales. Volumes were lower, mainly due to the closure of the paper machine 8 at Kvarnsveden Mill in Sweden in June 2017, and lower demand for wood-free coated papers (WFC). Also, Nymölla Mill in Southern Sweden was able to produce only half of its capacity for 11 weeks during Q4 due to water shortage.

Operational EBIT at EUR 234 (128) million was 83% up from 2017 due to higher sales prices which more than offset higher wood, pulp, chemical and transportation costs and lower volumes.

Sales and cash flow after investing activities to sales[1]

Paper



[1] The Paper division's financial target is cash flow after investing activities to sales (non-IFRS), because the division's goal is to generate cash flow for the Group so that it can transform into a renewable materials growth company.

Other

The segment Other includes the Nordic forest equity-accounted investments, Stora Enso's shareholding in the energy company Pohjolan Voima, operations supplying wood to the Nordic and Baltic mills, plantations not connected to any mill site, and Group shared services and administration.

EUR million	2018	2017
Sales	3 425	2 490
Operational EBITDA	48	75
Operational EBITDA margin	1.4%	3.0%
Operational EBIT	23	46
Operational EBIT margin	0.7%	1.8%
Cash flow from operations	-52	-30
Cash flow after investing activities	-119	-70

Sales of the Segment Other at EUR 3 425 (2 490) million was up from previous year mainly due to higher wood prices, the transfer of the Baltic wood supply operations from Wood Products division to Segment Other in Q2 2017 and the reclassification of transport and freight sales from other operating income into sales line.

Operational EBIT at EUR 23 (46) million was down from previous year mainly due to lower results from the equity accounted investments and higher operational costs in our wood harvesting operations.

Investments and capital expenditure

Additions to fixed and biological assets including internal costs capitalised in 2018 totalled EUR 574 (640) million. The total amount includes additions in biological assets of EUR 83 (80) million.

During the first quarter of 2018, the EUR 19 million investment consolidating corrugated packaging manufacturing in Finland was completed according to the plan. At Skutskär Mill in Sweden, the EUR 16 million investment to improve the environmental performance by reducing the sulphur emissions was completed. Production of biocomposite granules started at Hylte Mill in Sweden, following the EUR 12 million investment.

During the second quarter of 2018, Stora Enso completed the EUR 28 million investment at its Heinola Fluting Mill in Finland improving quality and increasing production capacity of the AvantFlute SC (semi-chemical fluting) products. Production started as planned at the new fluff pulp line at Skutskär Mill in Sweden following the EUR 26 million investment.

The investment to a new cross laminated timber (CLT) unit at the Gruvön sawmill in Sweden is proceeding as planned. The commercial production is scheduled to begin during Q1/2019. The investment at Imatra Mills to enhance the availability of the chemi-thermomechanical pulp (CTMP) is proceeding as planned. The project is scheduled to be completed during Q1/2019. The investment to increase the dissolving pulp production capacity at Enocell Mill is proceeding as planned and the investment is scheduled to be completed during the second half of 2019.

In June 2018, Stora Enso announced a feasibility study and an environmental impact assessment (EIA) for a possible investment at Oulu Mill. The feasibility study and the EIA evaluate a potential conversion of the Oulu paper mill into packaging board production. The EIA was finalised in December 2018. Currently, Oulu Mill has a production capacity of 360 000 tonnes of chemical softwood pulp and 1 080 000 tonnes of woodfree coated papers on two paper machines. The potential investment would include a new chemi-thermomechanical pulp (CTMP) plant, a brown-based cartonboard line with a capacity of 450 000 t/a and a kraftliner line with a capacity of 400 000 t/a. The potential conversion of Oulu Mill would enable Stora Enso to further improve its position in the growing consumer board and packaging solutions businesses and take a major step in its transformation. The other option is to continue the current fine paper production.

In July 2018, Stora Enso announced investment of EUR 13 million to increase the sawmilling and planing capacity at Launkalne sawmill in Latvia. The start-up is expected to take place in phases during Q2–Q3/2019.

Also in July, Stora Enso announced investment of EUR 25 million to boost green energy generation at Maxau Paper Mill. The project is scheduled to be completed in 2020. Stora Enso wants to secure the long-term profitable energy production in Maxau Mill by increased electricity generation and higher efficiency. The new 57 MW extraction-condensing turbine complements the existing Combined Heat and Power (CHP) plant which started up in 2010. The investment will reduce the energy cost and secure long term cost competitiveness of the paper mill.

In October 2018, Stora Enso announced investment of EUR 9 million to upgrade and expand the corrugated packaging plant in Riga, Latvia. The project is expected to be completed in 2019.

Also in October, Stora Enso announced investment of EUR 7 million in building a Competence Centre for biocomposites in Hylte mill, Sweden. The investment covers also the installation of new machinery for the milling of large fibres for biocomposites. Production is scheduled to start by the end of 2019.

Stora Enso and the energy company Gasum announced plan to build a biogas plant at Stora Enso's Nymölla paper mill in Sweden. The plant, built and operated by Gasum will turn the mill's wastewater effluent into renewable energy. The total investment for Stora Enso is approximately EUR 5 million.

In December, Stora Enso announced a EUR 22 million investment at Skoghall Mill in Sweden in an expansion of the existing water treatment plant.

Also in December, Stora Enso announced that it will acquire a 25% share in TreeToTextile AB, a joint venture between H&M group, Inter IKEA group and innovator Lars Stigsson, with the aim of developing new textile fibres in a sustainable way at attractive cost levels. Stora Enso will also support the industrialisation of TreeToTextile's production process by setting up a demonstration plant at one of its Nordic facilities. The four partners have an equally big stake in TreeToTextile.

Stora Enso is in a process of restructuring its ownership in Bergvik Skog AB, a Swedish forest holding company. The transaction is planned to be completed during the first half of 2019. Following the transaction, Stora Enso's forest holdings in Sweden will increase to 1.4 million hectares, of which 1.15 million hectares is productive forest land. Stora Enso's 49.8% share of the productive forest land in Bergvik totalled 0.9 million hectares at end of December 2018. The transaction is estimated to increase Stora Enso's balance sheet by approximately EUR 1.0 billion. Bergvik Skog's Swedish forest assets are owned by its subsidiaries Bergvik Väst AB and Bergvik Öst AB, representing approximately 83% and 17% of these assets respectively. As a result of this transaction, Stora Enso will transform its current ownership of 49.8% in Bergvik Skog, to a direct holding of 69.8% of the value of the forest assets in Bergvik Väst.

Innovation, research and development

Stora Enso's expenditure on innovation, research and development in 2018 was EUR 149 (142) million, which was equivalent to 1.4% (1.4%) of sales. In 2018, Stora Enso expanded the definition to include also innovation costs and the figure for 2017 has been adjusted accordingly.

Transformation towards the renewable materials continues. We believe that everything made with fossil-based materials today can be made from a tree tomorrow.

In 2018, The Wood Products division commenced operations at the Hylte mill for biocomposite production and are currently ramping up the operations and sales of DuraSense™ by Stora Enso. The Biomaterials division launched Lineo™ by Stora Enso for our lignin-based products and Consumer Board division have moved to pilot stage of Microfibrillated Cellulose (MFC) films.

ECO™ by Stora Enso technology enables the RFID tags to be produced on a 100% fibre-based paper label, unlike traditional plastic tags, resulting in a lower carbon footprint for sustainability conscious B2B and B2C companies. The ECO tag can be recycled in an environmentally friendly way together with paper and board materials. Moreover, it offers high conductivity at a lower cost compared with graphene or silver printed antennas. The ECO technology is available for use in multiple ongoing projects across multiple sectors.

Stora Enso defines innovation as the process of translating ideas into new value. Research and Development work is a basic element in the process.

The company focuses on five renewable material R&D themes: Forestry & Biomass, Bio-based chemistry, Material Science and Design, process solutions, and wood as a construction material. Additionally, we focus on Digitalisation, where the focus areas have been Robotic Process Automation (RPA), machine learning, smart operations, transparent supply chain, digital customer experience and Intelligent Packaging.

The strong effort to reduce the use of and replace fossil-based plastics has positively impacted the attractiveness of new fibre based solutions to our customers. These applications include materials for new packaging board grades especially targeting to replace single use plastics and plastic packaging. For long-term success, Stora Enso collaborates with academia and research institutes; for fast results, we work together with startups. Good examples are Sulapac, where the cooperation originates in Stora Enso Accelerator programme and 20tree.ai, where cooperation with the startup shows results of joint efforts with the Combient Foundry Venture Client Program. Sulapac holds patents in biodegradable materials, and 20tree.ai technology is used for forest valuation based on satellite images.

To trigger innovation processes, we will need ideas, which we will receive from customers, suppliers, various stakeholders and our own employees. WeNovate, our group-wide tool for collecting and evaluating ideas from the Stora Enso divisions and functions, was successfully launched in 2017. It has changed our ideation and innovation culture by engaging an increasing number of employees into the activity. In 2018, we ran 25 campaigns and have 7 idea channels open. In total over 850 ideas were collected, growing from 175 in 2017. The most suitable ideas enter state-gate based innovation processes of the divisions and functions.

Stora Enso has established funds to be used in an agile manner for capital expenditure in novel projects, which have potential business cases. The Innovation Fund is an allocation for new pilot scale opportunities and new business models. The digitalisation fund is an allocation for piloting new digital tools and models. Applications for these resources will be approved in the company's Investment Working Group. We have also allocated an agility reserve to cover operational expenses related to cross-divisional projects in 2019. With this we aim for increased number of good innovation projects.

Stora Enso employs close to 400 people in the following R&D centers:

- Research Centre and Pulp Competence Centre in Imatra (Finland)
- Research Centre and Pulp Competence Centre in Karlstad (Sweden)
- The Innovation Centre for biomaterials in Sickla, Stockholm (Sweden)
- The Innovation Centre for packaging in Helsinki (Finland)
- Support Centre in Mönchengladbach (Germany)
- Biocomposite Competence Centre in Hylte (Sweden)
- Intelligent Packaging Center in Tampere (Finland)
- Virdia demonstration plant in Louisiana and Research Centre in Virginia (United States)

Supporting Stora Enso's innovation strategy, we have several cooperation projects with research organisations and academic institutions. The aim is to build a clearer understanding of how our needs and the universities' capabilities can meet, first and foremost in the research sphere surrounding Stora Enso research themes and the long-term research needs in the divisions. The second target is to widen the contact network. Thirdly, we aim to identify topics where we have special interest regarding the universities' bachelor, master and PhD programmes, also for recruiting talents to mills and research/innovation centres.

Our collaboration partners include Aalto University in Finland, and Chalmers University of Technology in Sweden, the Royal Institute of Technology, VTT Technical Research Centre of Finland, SweTree Technologies Ltd, and Wallenberg Wood Science Center R&D. Stora Enso is a member of national, European and trade associations focused on the bioeconomy and forest agendas including Confederation of European Paper Industries (CEPI), Forest Technology Platform (FTP), and the Swedish and Finnish Forest Industry Federations. Stora Enso

is also a member in the EU's Biobased Industries Consortium (BIC) and the Bio-Based Industries Initiative Joint Undertaking, a new partnership within the EU Horizon 2020 research programme.

Intellectual property is an increasingly important tool to support Stora Enso's strategy and to differentiate from our competitors. During 2018 Stora Enso continued to strengthen its patent portfolio, with 56 priority founding patent applications filed and over 324 patents granted worldwide. The Group IP has within the Group the responsibility for handling IP matters, including e.g. patentability/ trademark/design opinions, assessments, preparations, filings and maintaining of IP rights as well as for investigations, opinions, oppositions and appeals of external parties IP rights. In addition, work with IP Landscaping is crucial before starting R&D projects also as part of the Stora Enso stage gate process. Landscaping can also reveal potential candidates for licensing, cross licensing, possible Joint Development Agreements etc. Group IP takes active part together with Legal Services in drafting various IP related agreements. Furthermore, before launching new products the Freedom to Operate (FTO) needs to be established. The Group IP strategy has been adopted by the CEO supported by the Group IP Steering Team.

Non-financial information

Requirements of non-financial information reporting according to the Finnish Accounting Act are reported below. The scope of the reporting includes those non-financial topics that are identified as the Group's key risks.

Risks and policy principles related to these topics are additionally described on pages 10–16. In addition, respect for human rights is explicitly covered below from the risk perspective.

Business model

Replacing the use of fossil-based resources with renewable raw materials is the foundation for a sustainable bioeconomy. Stora Enso's products contribute to a low-carbon circular economy, in which materials are reused and recycled, while waste is minimised, to maximise environmental, social, and financial added value. Stora Enso's business model description is in the beginning of the Report of Board of Directors and value creation model is presented in **Strategy 2018** on page 10.

Sustainability

Sustainability is a key element of Stora Enso's corporate governance, promoted by the Board of Directors, the CEO and the Group Leadership Team (GLT). The CEO carries the ultimate responsibility for the successful implementation of the sustainability strategy. Work on sustainability is led by the Executive Vice President, Sustainability, who reports directly to the CEO. The Board of Directors' Sustainability and Ethics Committee oversees the implementation of Stora Enso's Sustainability Strategy and Ethics and Compliance Strategy. The Committee met four times in 2018.

Stora Enso's Sustainability Policy describes our overall approach and governance model. At the same time, our Code of Conduct and other policies, guidelines, and statements on specific sustainability topics all further elaborate our approach, while also guiding our employees in their everyday work. These documents are available at storaenso.com/sustainability.

More information on Stora Enso's approach to sustainability is published in **Sustainability 2018**.

Environmental matters

Forests, plantations, and land use

Key policy: Wood and fibre sourcing, and land management policy

Progress on responsible forestry is followed with a key performance indicator (KPI) measuring the proportion of land in wood production and harvesting owned and managed by Stora Enso that is covered by forest certification schemes. Our target is to maintain the high level of 96%. In 2018, coverage amounted to 96% (97% in 2017[1]). As of January 2018, the scope excludes forest management units, whose primary purpose is not wood production and harvesting. These areas include, for example, test and pilot sites. At year-end Stora Enso owned or managed lands with a total area of 933 000 hectares.

In 2018, the total amount of wood (including roundwood, wood chips, and sawdust) delivered to our mills was 38.7 million m^3 (solid under bark) (37.5 million m^3 in 2017). The proportion of third-party certified wood in the Group's total wood supply was 76%. As of 2018 the share of certified wood excludes externally delivered certified wood. This decreased the certified share compared to the previous years.

Carbon dioxide

Key policy: Energy and carbon policy

Stora Enso's science-based target (KPI) is to reduce greenhouse gas emissions from our operations by 31% per tonne of pulp, paper and board produced by 2030 compared with the 2010 base-year. In 2018, our CO_2e emissions per saleable tonne of board, pulp, and paper were 18% lower than the 2010 benchmark level (21% lower in 2017). The performance declined three percentage points from 2017, mainly due to the increased use of peat at two Finnish mills and a higher fossil content in the generation of the purchased electricity in Finland and Poland.

Social and employee matters

Employees and wider workforce

Key policies: Minimum HR requirements, Health and Safety policy

On 31 December 2018, there were 26 100 (25 700) employees in the Group. The average number of employees in 2018 was 26 100, which was approximately 100 lower than the average number in 2017. The numbers include 50% of the employees at Veracel in Brazil and Montes del Plata in Uruguay.

Personnel expenses totalled EUR 1 330 (1 331) million or 12.7% of sales. Wages and salaries were EUR 1 000 (999) million, pension costs EUR 170 (166) million and other employer costs amounted to EUR 153 (158) million.

At the end of 2018, the Group's top three countries in respect to the number of employees were Finland, China and Sweden. 26% (26%) of employees were women.

Personnel turnover in 2018 was 15.0% (14.6%). Illness-related absenteeism amounted to 3.0% (3.1%) of total theoretical working hours.

On January 2018 Stora Enso signed a Global Framework Agreement with the three global unions - IndustriALL Global Union, UNI Global Union and the Building and Wood Worker's International - as another step towards creating working environments where all our employees are treated with respect and in a fair manner.

From the beginning of 2018, Stora Enso changed the main key performance indicator (KPI) for measuring safety performance from the Lost Time Accident (LTA) rate to the Total Recordable Incident (TRI) rate. The TRI rate gives a more comprehensive picture of safety performance as it also includes less-severe accidents.

In 2018, our TRI rate decreased to 6.1[2] (7.4). Compared to 2017, a 18% reduction was achieved on the TRI-rate.

Stora Enso's KPI for leadership, the Leadership Index, measures employee perceptions of their managers. The index is calculated based on our annual employee survey. Our target was to achieve an index of 80/100 by 2018. The Leadership Index in 2018 improved to 83 (81).

Employee-related information including the personnel strategy is discussed in more detail in the Group's **Sustainability 2018** and **Strategy 2018**, published during week 7.

Remuneration to the Board of Directors and key management is described in Note 7 of the Consolidated financial statements.

Suppliers

Key policy: Supplier Code of Conduct (SCoC)

Stora Enso's key performance indicator (KPI) for responsible sourcing measures the proportion of our total supplier spend covered by our SCoC, including all categories and regions. By the end of 2018, 95% of Stora Enso's total spend on materials, goods, and services was duly covered (95% at the end of 2017), which meets our target to maintain the high level of 95%.

Community

Key policies: Guidelines for Social Responsibility, Human Rights Policy

Guangxi, China

Stora Enso leases 82 217 hectares of land in Guangxi province China, of which 29 265 hectares (29 581 hectares in 2017), corresponding to 36% (36%) of the total area, is social land leased from village collectives, individual households, and local forest farms.

Bahia, Brazil

In Bahia, Brazil, work continued on a Sustainable Settlement Initiative launched in 2012 to provide farming land and educational support for local families in the landless people's social movements. In 2018, Veracel signed a new agreement with the social landless movements to complement the earlier agreed Sustainable Settlement Initiative. In the new agreement Veracel sells 3 300 hectares of previously occupied lands to the movements and related associations, and the movements will leave from Veracel's lands corresponding to 800 hectares. In addition, Veracel donates 225 hectares. After this new agreement, 468

[1] Recalculated according to the reviewed definition.
[2] Recalculated due to additional data after the Q4/2018 Interim Report.

hectares of productive land owned by Veracel remained occupied by social landless movements not involved in the Sustainable Settlement Initiative or in the new agreement. Veracel will continue to seek repossessions of remaining occupied areas through legal processes. Previously Veracel has voluntarily reserved 16 500 hectares to support the Sustainable Settlement Initiative. At the end of 2018, the total land area owned by Veracel was 213 500 hectares, of which 76 000 hectares are planted with eucalyptus for pulp production.

Respect for human rights
Key policy: Human Rights policy
Stora Enso's human rights commitment covers all our operations, including our employees, contractors, suppliers, and neighbouring communities. In addition to our commitment to the UN Guiding Principles on Business and Human Rights, Stora Enso respects and follows the legal reporting requirements of the UK Modern Slavery Act and we continue to monitor the development of similar legislation in other countries. Human rights are integrated into our Sustainability Agenda, which is aligned with the ten principles of the UN Global Compact, including its principles on human rights.

Human rights risks and impacts shall be taken into account throughout our operations, including investment decisions related to mergers, acquisitions, and divestments. Our investment guidelines stipulate that environmental and social risks and impacts, including those related to human rights, must be duly identified, assessed, and addressed prior to any investments in projects with business-critical risks.

In 2018, we completed the defining of our human rights priorities with support from BSR, an international expert organisation. To reflect this, we updated and published our Human Rights Statement as a Human Rights Policy and confirmed eight group-wide highest priority human rights:

- Health and safety
- Fair employment conditions
- Forced labour
- Freedom of association
- Non-discrimination and non-harassment
- Land and natural resource rights acquisition and management
- Grievance mechanisms
- Children's rights (relevant to the forestry sector).

While we respect and consider all human rights important, our identified highest priority human rights will be the primary focus of our future work. This includes our updated due diligence and monitoring programme, which will be finalised and implemented in 2019. We also aim to develop a new consolidated key performance indicator (KPI) for our human rights work during 2019 to monitor compliance with our eight highest priority human rights.

Anti-corruption and bribery matters
Key policies: Business practice policy, the Stora Enso Code (Code of Conduct)
As to Business Ethics, in 2018, a total of 68 reports received through Stora Enso's various grievance channels were identified as potential non-compliance cases (61 in 2017). Based on the investigations finalised by end of the year 2018, proven misconduct leading to disciplinary actions, legal actions and/or process improvements was identified in 20 (14) of the completed investigations, while 18 (22) further complaints were found to be valid without involving misconduct.

Based on our assessments two of the proven misconduct cases can be considered relating to corruption and/or fraud. Both cases resulted in employee dismissal or disciplinary process and in one of the cases the business relationship with an external party was terminated.

The company's Code of Conduct index monitors and evaluates employees' perceptions of Stora Enso's work on topics covered by the Stora Enso Code (Code of Conduct) and it is based on the annual employee survey results. In 2018, this index improved to 85 (83 in 2017). Our goal is to maintain this positive trend.

Environmental investments and liabilities
In 2018 Stora Enso's environmental investments amounted to EUR 46 (65) million. These investments were mainly to improve the quality of air and water, to enhance resource efficiency and energy self-sufficiency, and to minimise the risk of accidental spills.

Stora Enso's environmental costs in 2018 excluding interest and including depreciation totalled EUR 184 (170) million. These costs include taxes, fees, refunds, permit-related costs, and repair and maintenance costs, as well as waste water treatment chemicals and certain other materials.

Provisions for environmental remediation amounted to EUR 99 (108) million at 31 December 2018, details of which are in Note 22, Other Provisions, of the Consolidated financial statements. There are currently no active or pending legal claims concerning environmental issues that could have a material adverse effect on Stora Enso's financial position. Cash costs related to environmental remediation measures amounted to EUR 8 (11) million.

Risks and risk management

Our approach to risk management
Risk is an integral component of business, and it is characterised by both threats and opportunities. Stora Enso is committed to ensuring that systematic, holistic and proactive management of risks and opportunities is a core capability and an integral part of all Group activities, and that a risk aware corporate culture is fostered in all decision making. Through consistent application of dynamic risk analysis, we manage risk in order to enhance opportunities and reduce threats to thus achieve our competitive advantage.

Risk governance
Stora Enso defines risk as the effect of uncertainty on our ability to meet organisational values, objectives and goals. The Group Risk and Internal Control Policy, which is approved by the Board of Directors, sets out the overall approach to governance and the management of risks in accordance with the COSO (Committee of Sponsoring Organizations) framework and in line with the ISO 31000 standard.

The Board retains the ultimate responsibility for the overall risk management process and for determining what an appropriate and acceptable level of risk is. The Board has established the Financial and Audit Committee to provide support to the Board in relation to the monitoring of the adequacy of the risk management process within Stora Enso, and specifically regarding the management and reporting of financial risks. The Sustainability and Ethics Committee is responsible for overseeing the company's sustainability and ethical business conduct, its' strive to be a responsible corporate citizen, and its contribution to sustainable development.

The head of Enterprise Risk Management, reporting to the CFO, is responsible for the design, development and monitoring of the top-down implementation of the Group risk management framework. Each division head, together with their respective management teams, are responsible for process execution and cascading the framework and guidelines further down in the organisation. The Internal Audit unit evaluates the effectiveness and efficiency of the Stora Enso risk management process.

Risk management process
In connection with the annual strategy process, business divisions and group service and support functions conduct a holistic baseline risk assessment, linked to their key objectives. Specific guidance regarding the risk management process is outlined in the enterprise risk management instructions, distributed with the annual strategy guidelines.

Business entities and functions identify the sources of risk, events including changes in circumstances and their causes and their potential consequences. Stora Enso's risk model outlines the overall risk universe which is used to support holistic risk identification and risk consolidation, while also providing taxonomy as well as consistency tin risk terminology. Risk appetite is determined across main risk categories on the business division level.

Risk analysis involves developing an understanding of the risk to provide an input for risk evaluation. The purpose of risk evaluation is to determine the risk priorities and to support decision making to determine which risks require treatment/actions. Risks are assessed in terms of their impact and likelihood of occurrence while the effectiveness of existing risk reduction is factored in to define the residual risk level. Pre-defined impact scales consider financial, people and reputational impacts, on both a quantitative and qualitative basis.

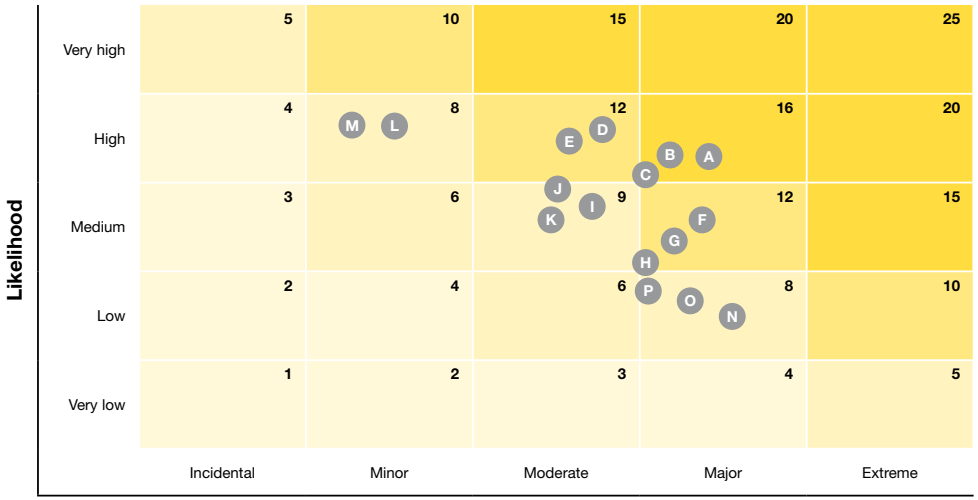
Risk treatment involves selecting one or more risk management option, such as avoidance, reduction, sharing or retention. Additional risk mitigation actions are determined for risks which exceed the perceived risk tolerance incorporating the assignment of responsibility, schedule and timetable of the risk treatment actions.

Following the annual baseline assessment, prioritised and emerging risks, as well as the corresponding risk mitigation and business continuity plans related to those risks, are reviewed in divisional business review meetings on a quarterly basis.

Despite the measures taken to manage risks and mitigate the impact of risks, and while some of the risks remain beyond the direct control of the management, there can be no absolute assurance that risks, if they occur, will not have a materially adverse effect on Stora Enso's business, financial condition, operating profit or ability to meet financial obligations.

Main risk factors

Risk map



Impact – annualised Group EBITDA impact / share price impact / reputational impact

Key risks in 2018

Risk*	Risk classification	Time span	Change vs 2017	Level of possible management influence
Major impact – high likelihood				
A Global warming	E/S	LT	→	
B Macroeconomy, geopolitics and currency rates	E/S/F	ST/LT	↑	
C Sourcing	I/S/O	ST/LT	→	
Moderate impact – high likelihood				
D Regulatory changes	E/S/C	ST/LT	↑	
E Information technology and security	I/O	ST	↑	
Major impact – medium likelihood				
F Ethics and compliance	M/C	ST	→	
G People and capabilities	I/O	ST/LT	↑	
H Strategic investments	M/C	ST/LT	↓	
Moderate impact – medium likelihood				
I Community relations and social responsibility	I/O/C	ST	→	
J Competition and market demand	E/S	ST/LT	↑	
K Product safety	M/O/C	ST	↓	
Minor impact – high likelihood				
L Occupational health and safety	I/O	ST	→	
M Physical assets	I/O	ST/LT	→	
Major impact – low likelihood				
N Digitalisation	I/S	ST/LT	→	
O Forest and land use	I/O/C	ST/LT	→	
P Mergers, acquisitions and divestitures	M/I/O/C	ST	→	

* Residual risk = risk remaining after risk treatment

Symbols

M = Mandatory obligations
E = External factors
I = Internal capabilities
S = Strategic
O = Operational
C = Compliance
F = Financial market and reporting
ST = Short-term
LT = Long-term

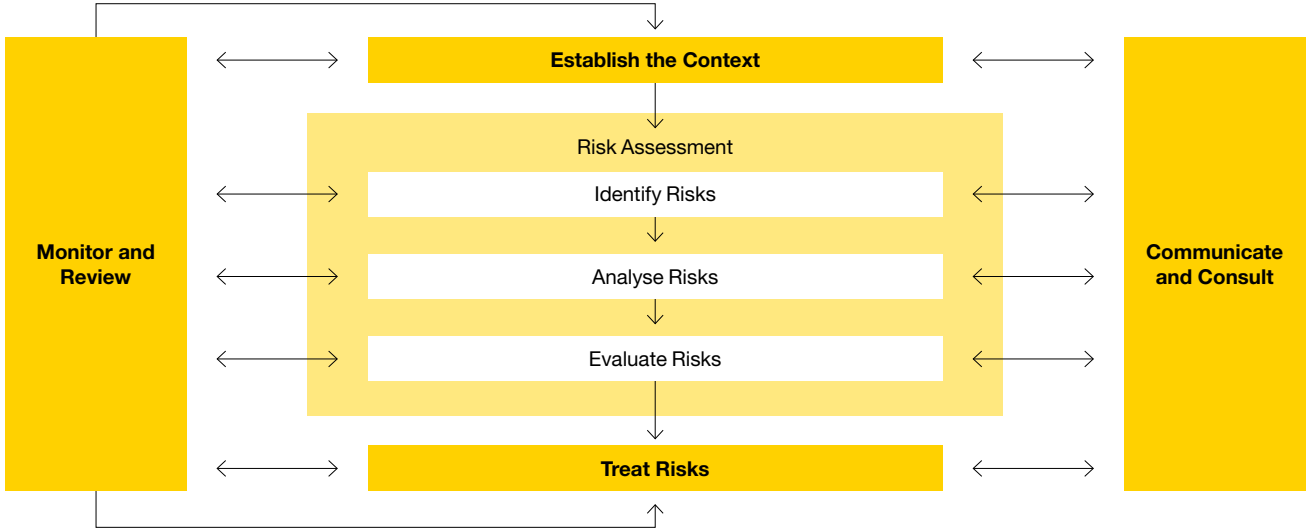
Change vs 2017

Increased ↑
Decreased ↓
Stable →

Level of possible management influence

Low High

Risk management process



Strategic risks

Global warming

Changes in precipitation patterns, drought, typhoons and severe frost periods in the subtropics could cause damage to operations and tree plantations. Increases in average temperatures could lead to changes in the tree species composition of forests. Milder winters could impact harvesting and transport of wood in northern regions and the related costs. Additional demand for biomass fuels and agricultural land may limit the availability of land for fibre production, affecting the price of biomass. The increasing global demand for water may in the long-term impact the Group's operations through our supply chains.

Policy principles and mitigation measures

Stora Enso is committed to contributing and mitigating the effects of climate change by actively seeking opportunities to reduce the Group's carbon footprint. Risks related to climate change are managed via activities related to finding clean, affordable and safe energy sources for production and transportation, and reducing energy consumption. Additional measures include energy efficiency initiatives, the use of carbon-neutral biomass fuels, maximising the utilisation of combined heat and power, and sequestration of carbon dioxide in forests and products. Diligent plantation planning is ensured to avoid frost sensitive areas and non-controversial tree breeding and R&D programmes are applied to increase tolerance of extreme temperatures. Stora Enso maintains a diversity of forest types and structures and enforces diversification in wood sourcing. Wood harvesting in soft soils involves the implementation of best practices guidelines. Agroforestry concepts have been introduced to integrate the different land use forms and to mitigate the competition for land and the effects of increasing food prices.

Related opportunities

- With regards to global warming, we believe that the opportunities outweigh risks in near term.
- Products based on renewable materials with a low carbon footprint help customers and society at large to reduce CO_2 emissions by providing an alternative to solutions based on fossil fuels or other non-renewable materials.

Macroeconomic, geopolitical, and currency rate risks

Stora Enso operates in more than 30 countries and is affected by the global economy. Changes in broad economic conditions, sharp market corrections, increasing volatility in foreign exchange rates and chronic fiscal imbalances could have negative and material impact on the Group's profit, cash flows and financial position. A prolonged global recession may materially and adversely affect Stora Enso's performance and financial condition. A recession may also materially affect the Group's customers, suppliers and other parties with whom it does business. Exchange rate fluctuations may have a material impact on the reported results through transaction and translation risk impact.

A significant and sustained economic downturn, or any similar event, could have a material adverse effect on the Group's operational performance and financial condition. The Group's reported results and reported net assets may fluctuate as the exchange rates change.

Stora Enso is exposed to several financial market risks that the Group is responsible for managing under policies approved by the Board of Directors. The objective is to achieve cost-effective funding in Group companies and manage financial risks using financial instruments to reduce earnings volatility. The main exposures for the Group besides currency risk are interest rate risk, funding risk, commodity price risk and credit risk.

Financial risks are discussed in detail in Note 24, Financial risk management, of the Consolidated financial statements.

Policy principles and mitigation measures

The Group has a diversified portfolio of businesses which mitigates exposure to any one country or product segment. We monitor the external environment continuously and our planning assumptions take account of important near- to medium-term and long-term drivers related to key macro-economic factors. We closely monitor the Board-approved risk appetite compliance for specific financial metrics and actively manage cash flow and liquidity. We hedge 50% of the highly probable 12-month net foreign exchange flows in main currency pairs. Currency translation risk is reduced by funding assets, whenever economically possible, in the same currency as the asset. The divisions regularly monitor their order flows and other leading indicators, where available, so that they may respond quickly to deterioration in trading conditions. In the event of a significant economic downturn, the Group would identify and implement cost reduction measures to offset the impact on margins from deterioration in sales.

Related opportunities

- A diverse business portfolio and geographical presence, competitive strength and resilient balance sheet reduce the Group's risk exposures
- Strategic opportunities in changing currency and macroeconomic environment.

Strategic investments

Stora Enso's business strategy is to transform itself from a traditional paper and board producer to a customer-focused renewable materials growth company. The success of this transformation depends on the Group's ability to understand the needs of the customer and find the best way to serve them with the right offering and with the right production asset portfolio. Failure to complete strategic projects in accordance with the agreed schedule, budget or specifications can have serious impacts on our financial performance. Significant, unforeseen changes in costs or an inability to sell the envisaged volumes or achieve planned price levels may prevent us from achieving our business goals.

Policy principles and mitigation measures

Risks are mitigated through profound and detailed pre-feasibility and feasibility studies which are prepared for each large investment. Group investment guidelines stipulate the process, governance, risk management and monitoring procedures for strategic projects.

Environmental and Social Impact Assessments (ESIAs) are conducted for all new projects that could cause significant adverse effects in local communities. Post completion audits are carried out for all significant investments.

Related opportunities
- Replacing fossil-based materials by innovating and developing new products and services based on wood and other renewable materials.

Competition and market demand
Continued competition and supply and demand imbalances in the raw material, energy and products market may have an impact on profitability. The paper, pulp, packaging and wood products industries are mature, capital intensive and highly competitive. Stora Enso's principal competitors include a number of large international forest products companies and numerous regional and more specialised competitors. Customer demand for products is influenced by the general economic conditions and inventory levels, and affects product price levels. Product prices, which tend to be cyclical in this industry, are affected by capacity utilisation, which decreases in times of economic slowdowns. Changes in prices differ between products and geographic regions.

The following table shows the operating profit sensitivity to a +/- 10% change in either price or volume for different segments based on figures for 2018.

Operating Profit: Impact of Changes +/- 10%, EUR million

Segments	Price	Volume
Consumer Board	251	84
Packaging Solutions	129	59
Biomaterials	162	85
Wood Products	160	44
Paper	283	75

Policy principles and mitigation measures
The ability to respond to changes in product demand and consumer preferences and to develop new products on a competitive and economic basis calls for innovation, continuous capacity management and structural development. The risks related to factors such as demand, price, competition and customers are regularly monitored by each division and unit as a routine part of business management. These risks are also continuously monitored and evaluated on a Group level to gain a perspective of the Group's total asset portfolio and overall long-term profitability potential.

Related opportunities
- Our expertise in wood and other biomass is focused on responding to customer and consumer demand in a changing world.

Digitalisation
The digital transformation of businesses continues to alter the ways in which organisations operate. Digital capabilities penetrate all aspects of business and operating models, reshaping how companies and functions generate value. Therefore, digitalisation also involves potentially disruptive forces. Moreover, customers, regulators and other stakeholders expect companies to understand what data they have or could have, what risks it poses, and to have plans to manage it well.

Business process erosion, failure to take advantage of the upside that technology offers or inability to harvest related synergies could significantly impair Stora Enso's competitiveness in the market place.

Policy principles and mitigation measures
Stora Enso has an extensive digitalisation programme with the aim to develop a competitive advantage by making full use of the opportunities to drive revenue growth and internal efficiency. Stora Enso has established a programme with external partners to search for technological development initiatives with a clear business purpose. With experimental and fast prototyping, these projects will help to identify and further develop initiatives that will speed up Stora Enso's digital maturity by exploring new technologies and capabilities.

Related opportunities
- Opportunities related to digitalisation clearly exceed related risks
- New technologies offer significant potential for higher level of process optimisation and automatisation, new business models and enhanced value propositions for customers and consumers.

Mergers, acquisitions, and divestitures
Failure to achieve the expected benefits from any acquisition or value from assets or businesses sold can have serious financial impacts. The Group could find itself liable for past acts or omissions of the acquired business, without any adequate right of redress. Failure to achieve expected values from the sales of assets or deliveries beyond the expected receipt of funds may also impact the Group's financial position. In connection with an acquisition, past practices with targets related to e.g. pollution, competition law compliance or corruption could result in additional costs for Stora Enso and cause reputational damage. Divestments may involve additional costs due to historical and unaccounted liabilities. Business restructuring may also involve reputational impacts.

Policy principles and mitigation measures
Rigorous M&A guidelines, including due diligence procedures are applied to the evaluation and execution of all acquisitions that require the approval of the Board of Directors. Structured governance and policies such as the policy for responsible rightsizing, are followed when making restructuring decisions.

Related opportunities
- A strong balance sheet and cash flow enable value enhancing M&A, when the timing and opportunity are right.

Operational risks

Sourcing and logistics
Violation of Supplier Code of Conduct could result in contractual, financial and reputational damages and loss of sales if Stora Enso were to be blacklisted by customers. Similarly poor occupational safety performance of subcontractors can be a risk to our reputation. Increasing input costs or availability of materials, goods and services may adversely affect Stora Enso's profitability. Securing access to reliable low-cost supplies and proactively managing costs and productivity are of key importance. Reliance on outside suppliers for natural gas, oil and coal, and for peat and nearly half of the electricity consumed, leaves the Group susceptible to changes in energy market prices and disturbances in the supply chain.

The following table shows Stora Enso's major cost items.

Composition of costs in 2018

Operative Costs	% of Costs	% of Sales
Logistics and commissions	11%	10%
Manufacturing costs		
Fibre	34%	30%
Chemicals and fillers	10%	9%
Energy	7%	6%
Material	7%	6%
Personnel	14%	13%
Other	12%	10%
Depreciation	5%	5%
Total costs and sales	**100%**	**88%**
Total operative costs and sales in EUR million	**9 241**	**10 486**
Equity accounted investments (EAI), operational		81
Operational EBIT		**1 325**

In many areas Stora Enso is dependent on suppliers and their ability to deliver a product or a service at the right time and of the right quality. The most important products are fibre, chemicals and energy, and machinery and equipment in capital investment projects. The most important services are transport and various outsourced business support services. For some of these inputs, the limited number of suppliers is a risk.

Policy principles and mitigation measures
Input cost volatility is closely monitored on the business unit, divisional and Group level. The Group applies consistent long-term energy risk management. The price and supply risks are mitigated through increased own generation, shareholding in competitive power assets such as PVO/TVO, physical long-term contracts and financial

derivatives. The Group hedges price risks in raw material and end-product markets, and supports the development of financial hedging markets. The Group uses a wide range of suppliers and monitors them to avoid situations that might jeopardise continued production, business transactions or development projects.

Suppliers and subcontractors must also comply with Stora Enso's sustainability requirements as they are part of Stora Enso's value chain, and their weak sustainability performance could harm Stora Enso and its reputation. Stora Enso's sustainability requirements for suppliers and audit schemes cover its raw materials, and other goods and services procured. Suppliers are assessed for risks related to their environmental, social and business practices through self-assessment questionnaires and supplier audits. Findings from such assessments are continuously followed up and progressive blacklisting procedures are applied as necessary.

Environmental and social responsibility in wood procurement and forest management is a prime requirement of stakeholders. Failing to ensure that the origin of wood used by the Group is acceptable could have serious consequences in the markets. Stora Enso manages this risk through its policies of sustainable sourcing of wood and fibre, and land management, which set the basic requirements for all Stora Enso wood procurement operations. Traceability systems are used to document that all wood and fibre come from legal and acceptable sources.

Related opportunities
- Add value and bring innovation to our business globally by building strong and measurable relationships with the best suppliers.
- Enforce harmonised sourcing processes to increase capabilities, increase tender quality to reduce cost, and develop sustainable suppliers to reduce risk.

Information technology and security
The Group is dependent on IT systems for both internal and external communications and for the day-to-day management of its operations. The Group's information systems, personnel and facilities are subject to cyber security risk. Failure to capitalise on digitalisation and cognitive technologies could impair Stora Enso's competitiveness. Other IT related risks relate to the potential unavailability of IT services due to human error in operations, damaged hardware in data rooms and data centres, network connection issues and the failure of suppliers to follow service level agreements.

Accidental disclosure of confidential information due to a failure to follow information handling guidelines or due to an accident or criminal act may result in financial damage, penalties, disrupted or delayed launch of new lines of business or ventures, loss of customer and market confidence, loss of research secrets and other business critical information. Further risks involve the loss of backup media and violation of data privacy regulations.

Policy principles and mitigation measures
The management of risks is actively pursued in the Information Risk Management System and best practice change management and project methodologies are applied. A number of security controls have been implemented to strengthen the protection of confidential information and to facilitate compliance with international regulations. Specific measures include a thorough RfP process in supplier selection for business-critical services, supplier audits, annual controls and audit, data centres located in low-risk areas, backup connections for critical services, disaster recovery plans, targeted scanning and investigation activities, encryption of communication, information and devices, remote management of security on devices and information security awareness training.

Related opportunities
Efficient operations, performance optimisation, innovative product offerings, and new customer services through digitisation and sophisticated IT systems.

People and capabilities
Recruiting, retaining and developing a competent workforce and managing key talent throughout Stora Enso's global organisation are crucial to success. Competition for personnel is intense and the Group may not be successful in attracting or retaining qualified personnel. A significant portion of Stora Enso employees are members of labour unions and there is a risk that the Group may face labour market disruptions especially in a time of restructuring and redundancies due to divestments and mill closures.

The loss of key employees, the Group's inability to attract new or adequately trained employees, or a delay in hiring key personnel could seriously harm the Group's business and impede the Group and its business divisions from reaching their strategic objectives. Labour market disruptions and strikes could have adverse material effects on the business, financial conditions and profitability.

Policy principles and mitigation measures
Stora Enso manages the risks and loss of key talents through a combination of different actions. Some of the activities aim at providing a better overview of the workforce of the whole Group, making the Stora Enso employer brand better known both internally and externally, globalising some of the remuneration practices and intensifying the efforts to identify and develop talents. Finally, the Group actively focuses on talent and management assessments, including succession planning for key positions. The majority of employees are represented by labour unions under several collective agreements in different countries where Stora Enso operates, thus relations with unions are of high importance to manage labour disruption risks.

Related opportunities
- Skilled and dedicated employees are essential for success.
- Engaged high performing people enable the implementation of transformation strategy and commercial success.

Community relations and social responsibility
Social risks may harm existing operations and the execution of investments, especially in growth markets. Failure to successfully manage relationships with local communities and non-governmental organisations (NGOs) could disrupt our operations and adversely affect the Group's reputation. The Group operates in certain countries, where land and resource ownership rights remain unclear and where related disputes may arise.

Potential impacts include reputational impacts and negative media coverage, harm to communities and rights holders, disruption of operations, and loss of the licence to operate.

Policy principles and mitigation measures
Stora Enso strives to identify and minimise risks related to social issues in good time, in order to guide decision-making in its investment processes as well as in its ongoing operations. Tools such as sustainability risk assessment, human rights due diligence and Environmental and Social Impact Assessments (ESIA) help ensure that no unsustainable projects are initiated and all related risks and opportunities are fully understood in all operations. These tools also enable project plans and operating practices to be adapted to suit local circumstances. Furthermore, dialogue with NGOs is a part of the Group's stakeholder engagement. More information on community engagement is presented in Stora Enso's Sustainability Report.

Related opportunities
- Ensuring that the communities around our operations thrive economically, socially, and environmentally is crucial for the success and sustainability of Stora Enso.
- Clear business benefits to Stora Enso through a strong focus on social responsibility, as customers, business partners, investors and potential employees become more and more attracted to socially responsible companies.

Product safety
Some of our products are used to package liquids and food consumer products, so any defects could affect health or packaging functions and result in costly product recalls. Wood products are incorporated into buildings, and this may involve product liability resulting from failures in structural design, product selection or installation. Failure to ensure product safety could result in product recalls involving significant costs including compensation for indirect costs of customers, and reputational damage.

Policy principles and mitigation measures
The mills producing food and drink contact products have established certified hygiene management systems based on risk and hazard analysis. To ensure the safety of its products, Stora Enso actively participates in CEPI (Confederation of European Paper Industry) working groups on chemical and product safety. In addition, all Stora Enso mills have certified ISO quality management systems. Furthermore, contractual liability limitation and insurance protection are used to limit the risk exposure to Stora Enso.

Related opportunities
- Differentiation and value creation through superior product quality and the highest level of product conformity.

Occupational health and safety
Failure to maintain high levels of safety management can result in harm to the Group's employees or contractors, and also to communities near our operations and the environment. Impacts in addition to physical injury, health effects and environmental damage could include liability to employees or third parties, impairment of the Group's reputation, or inability to attract and retain skilled employees. Government authorities could additionally enforce the closure of our operations on a temporary basis.

Personnel security can never be compromised and thus Stora Enso must be aware of potential safety risks and provide adequate guidelines to people for managing risks related to, for example, travel, work and living in countries with security or crime concerns. Focusing on the security of key personnel is also important from a business continuity perspective.

Policy principles and mitigation measures
Stora Enso measures its performance in health and safety through lag indicators on accidents and near-misses, and lead indicators on safety observations. The target in safety is to achieve zero accidents, but demanding milestones have also been set for accident and incident rates. Stora Enso has adopted a common model for safety management, establishing a set of safety tools that all units must implement in their operations. Implementation of the tools is followed up and reported internally on a quarterly basis, and support is offered to units through training, coaching and the sharing of best-practice. The main responsibility for identifying and managing safety risks remains with the units. At the mill level, safety and health risks are assessed jointly, in co-operation with the occupational health service providers. Global health and safety risks are monitored and assessed by the Group's Occupational Health and Safety unit.

Stora Enso carries out constant monitoring of risks related to the security and safety of the personnel, including health issues, and information available on the Intranet is delivered directly to travelling employees. An external service provider takes care of action in medical or security crises, under guidance from Stora Enso's crisis management team.

Related opportunities
- Leading health and safety performance strengthens the brand as an employer.
- Improved engagement, efficiency and productivity.

Physical assets
The physical assets that comprise the installed capacity of the production facilities have inherent risks or the potential for failure, and also involve the potential for off-specification operation that could result in poor product quality, lower output or increased production costs. In addition to the inherent risks of catastrophic failure, the management must also consider the relative importance, e.g. criticality, of each asset on the plant's ability to meet delivery commitments and the business plan. In some instances the risks are the result of inherent design deficiencies, mode of operation or operating practices. In Stora Enso the significant asset risks lie predominantly in integrated (but also non-integrated) pulp and related energy production.

Policy principles and mitigation measures
Protecting production assets and business results is a high priority for Stora Enso to achieve the target of avoiding any unplanned production stoppages. This is achieved through structured methods of identifying, measuring and controlling different types of risk and exposure. Divisional risk specialists manage this process together with insurance companies and other loss prevention specialists. Each year a number of technical risk inspections are carried out at production units. Risk improvement programmes and cost-benefit analyses of proposed investments are managed via internal reporting and risk assessment tools. Internal and external property loss prevention guidelines, fire loss control assessments, key machinery risk assessments and specific loss prevention programmes are also utilised.

Planned stoppages for maintenance and other work are important to keep machinery in good order. Preventive maintenance programmes and spare part criticality analyses are utilized to secure the high availability and efficiency of key machinery. Striking a balance between accepting risks and avoiding, treating or sharing risks is a high priority.

Related opportunities
- Optimised maintenance and well controlled loss prevention programmes
- Potential for competitive advantage through improved productivity and overall efficiency

Compliance risks

Regulatory changes
The Group's businesses may be affected by political or regulatory developments in any of the countries and jurisdictions in which the Group operates, including changes to fiscal, tax, environmental or other regulatory regimes. Potential impacts include higher costs and capex to meet new environmental requirements, expropriation of assets, imposition of royalties or other taxes targeted at our industry, and requirements for local ownership or beneficiation. In particular, the EU energy and carbon policies may impact upon the availability and price of wood fibre. Additionally, political instability may result in civil unrest, nullification of existing agreements, harvesting permits or land leases. Unpredicted changes in forest certification schemes could limit the availability of certified raw materials.

Policy principles and mitigation measures
- Active monitoring of regulatory and political developments in the countries where the Group operates
- Participation in policy development mainly through industry associations

Related opportunities
- Regulatory changes involve market growth potential for sustainable products. Resource efficiency, the circular economy and renewability are increasingly important sources of competitive advantage.

Ethics and compliance
Stora Enso operates in a highly regulated business area and is thereby exposed to risks related to breach of applicable laws and regulations (e.g. capital markets regulation, company and tax laws, customs regulation and safety regulation) and breaches of group policies such as the Stora Enso Code, Supplier Code of Conduct and Business Practice Policy regarding fraud, anti-trust, corruption, conflict of interests and other misconduct. Stora Enso may face high compliance and remediation costs under environmental laws and regulations. See also Information systems and information security. Potential impacts include prosecution, fines, penalties, and contractual, financial and reputational damage.

Policy principles and mitigation measures
Stora Enso's Ethics and Compliance Programme, including policy setting, value promotion, training and knowledge sharing and grievance mechanisms are kept continuously up to date and developed. Other compliance mechanisms include Stora Enso Group's internal control system and Internal Audit assurance, the Supplier Code of Conduct in supplier contracts, supplier risk assessments, supplier trainings, supplier audits and black-listing procedures. In response to capital markets regulations, Stora Enso's Disclosure Policy emphasises the importance of transparency, credibility, responsibility, proactivity and interaction.

Environmental risks are minimised through environmental management systems and environmental due diligence for acquisitions and divestments, and indemnification agreements where effective and appropriate remediation projects are required. Special remediation projects related to discontinued activities and mill closures are executed based on risk assessments.

Related opportunities
- Focusing on wider ethical topics rather than mere compliance with regulations will lead to successful business, foster accountability and enhance corporate reputation.

Forest and land use
Wood is our most important raw material. Adverse changes in growing conditions and natural hazards, caused by climate change, for example, could result in significant financial loss to Stora Enso. Failure to meet stakeholder expectations or to ensure the chain of custody and economically, socially and environmentally sustainable forest and land management practices throughout our wood procurement and plantation operations could also result in significant reputational and financial loss to Stora Enso. Furthermore, global challenges such as population growth, increasing demand for agricultural land, and the widening gap between the supply and demand for wood, all require us to use natural resources even more efficiently.

Policy principles and mitigation measures
Our Policy for Wood and Fibre Sourcing, and Land Management, robust traceability systems and our active promotion of forest certification all help to ensure that no wood or fibre from unacceptable sources enters our supply chain. In addition, when sourcing logging residues and other forest biomass for energy use, we follow the specific guidelines developed for the harvesting of forest energy, which include strict environmental considerations.

Related opportunities
As trees absorb carbon dioxide (CO_2) from the atmosphere and – together with wood-based products – act as carbon sinks, wood from sustainably managed forests represents a carbon neutral, renewable alternative to many non-renewable materials. If forests and plantations are managed sustainably, new generations of trees will replace those that are logged, sequestering more CO_2 from the atmosphere. Well-managed forests can make entire ecosystems more resilient to negative impacts, and benefit from positive ones.

Corporate governance in Stora Enso
Stora Enso complies with the Finnish Corporate Governance Code issued by the Securities Market Association (the "Code"). The Code is available at cgfinland.fi. Stora Enso also complies with the Swedish Corporate Governance Code ("Swedish Code"), with the exception of the deviations listed in Appendix 1 of the Corporate Governance Report. The deviations are due to differences between the Swedish and Finnish legislation, governance code rules and practices, and in these cases Stora Enso follows the practice in its domicile. The Swedish Code is issued by the Swedish Corporate Governance Board and is available at corporategovernanceboard.se.

Legal proceedings

Contingent liabilities
Stora Enso has undertaken significant restructuring actions in recent years which have included the divestment of companies, sale of assets and mill closures. These transactions include a risk of possible environmental or other obligations the existence of which would be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group.

Stora Enso is party to legal proceedings that arise in the ordinary course of business and which primarily involve claims arising out of commercial law. The management does not consider that liabilities related to such proceedings before insurance recoveries, if any, are likely to be material to the Group's financial condition or results of operations.

Legal proceedings in Latin America
Veracel
On 11 July 2008, Stora Enso announced that a federal judge in Brazil had issued a decision claiming that the permits issued by the State of Bahia for the operations of Stora Enso's joint operations company Veracel were not valid. The judge also ordered Veracel to take certain actions, including reforestation with native trees on part of Veracel's plantations and a possible fine of BRL 20 (EUR 5) million. Veracel disputes the decision and has filed an appeal against it. Veracel operates in full compliance with all Brazilian laws and has obtained all the necessary environmental and operating licences for its industrial and forestry activities from the relevant authorities. In November 2008, a Federal Court suspended the effects of the decision. No provisions have been recorded in Veracel's or Stora Enso's accounts for the reforestation or the possible fine.

In June 2017, Veracel received a tax infringement note referring to year 2012 with a total amount of BRL 224 (EUR 50) million including interest and fines. The dispute is limited to fiscal year 2012 for which the tax authority applied another transfer pricing method due to a different interpretation of a transition rule. Veracel acts in full compliance with Brazilian transfer pricing law and has filed an administrative defense against the tax note in July 2017. In June 2018 Veracel received a positive decision from Federal Revenue Judgement, which has been confirmed by the Administrative Council For Fiscal Resources in January 2019. The total exposure at year end is BRL 241 (EUR 54) million considering interest until 31 December 2018. Stora Enso's share of the exposure is BRL 120 (EUR 27) million. No provisions have been recorded in Veracel's or Stora Enso's accounts for this tax dispute.

Legal proceedings in Finland
Roundwood claim
In December 2009, the Finnish Market Court fined Stora Enso for competition law infringements in the market for roundwood in Finland from 1997 to 2004. Stora Enso did not appeal against the ruling. In March 2011, Metsähallitus of Finland initiated legal proceedings against Stora Enso, UPM and Metsäliitto claiming compensation for damage allegedly suffered due to the competition infringement. In its judgement rendered in June 2016, the Helsinki District Court dismissed Metsähallitus' claim for damages against Stora Enso, UPM and Metsäliitto. Metsähallitus appealed against the District Court's judgment to the Helsinki Court of Appeal, which rendered its judgement in the matter in May 2018. In its judgement, the Court of Appeal dismissed Metsähallitus' appeal and upheld the District Court's judgement. The total amount of Metsähallitus' claim jointly and severally against Stora Enso, UPM and Metsäliitto in the Court of Appeal was approximately EUR 125 million and the secondary claim against Stora Enso was approximately EUR 68 million. Metsähallitus applied for a leave of appeal from the Supreme Court. The Supreme Court decided on 29 January 2019 that the application to appeal is denied. This concludes the case without Stora Enso having any payment obligation towards Metsähallitus. Further the entire round woodclaim case can be now considered closed without any material financial effects on Stora Enso. The quarterly reporting will discontinue.

Legal proceedings in Sweden
Insurance claim
In July and August 2016, six Swedish insurance companies filed lawsuits in the Environmental Court and the District Court of Falun against Stora Enso, due to damage caused by the forest fire in Västmanland, Sweden, in 2014. The claimed amount is approximately SEK 300 (EUR 30) million. Stora Enso denies liability. So far the Environmental Court and thereafter the Environmental Court of Appeal has found that the Environmental code is not applicable on damage caused by fire.

Company fine
In January 2018, a Swedish prosecutor filed a lawsuit against Stora Enso and its supplier, due to the forest fire in Västmanland, Sweden in 2014, claiming a company fine of SEK 5 million each. Both Stora Enso and the supplier have disputed the claim.

Share capital

Stora Enso Oyj's shares are divided into A and R shares. The A and R shares entitle holders to the same dividend but different voting rights. Each A share and each ten R shares carry one vote at a shareholders' meeting. However, each shareholder has at least one vote.

During 2018, a total of 79 648 A-shares converted into R-shares were recorded in the Finnish Trade Register. On 31 December 2018, Stora Enso had 176 312 672 A shares and 612 307 315 R shares in issue. The company did not hold its own shares. The total number of Stora Enso shares in issue was 788 619 987 and the total number votes at least 237 543 403.

The Board of Directors is not currently authorised to issue, acquire or dispose of shares in the Company.

Major shareholders as of 31 December 2018

By voting power	A shares	R shares	% of shares	% of votes
1 Solidium Oy[1]	62 655 036	21 792 540	10.7%	27.3%
2 FAM AB[2]	63 123 386	17 000 000	10.2%	27.3%
3 Social Insurance Institution of Finland	23 825 086	973 982	3.1%	10.1%
4 Varma Mutual Pension Insurance Company	8 513 018	1 140 874	1.2%	3.6%
5 Ilmarinen Mutual Pension Insurance Company	3 352 286	17 778 548	2.7%	2.2%
6 MP-Bolagen i Vetlanda AB, (Werner von Seydlitz dödsbo)	4 818 000	1 390 000	0.8%	2.1%
7 Erik Johan Ljungberg's Education Foundation	1 780 540	2 336 224	0.5%	0.8%
8 Swedbank Robur Funds	0	10 674 443	1.4%	0.4%
9 Bergslaget's Healthcare Foundation	626 269	1 609 483	0.3%	0.3%
10 The State Pension Fund	0	7 200 000	0.9%	0.3%
11 Nordea Investment Funds	0	5 913 015	0.7%	0.2%
12 Keva (Local Government Pension Institution)	0	5 251 101	0.7%	0.2%
13 Elo Mutual Pension Insurance Company	0	4 680 000	0.6%	0.2%
14 Unionen (Swedish trade union)	0	3 477 750	0.4%	0.1%
15 SEB Investment Management	0	3 157 906	0.4%	0.1%
Total	**168 693 621**	**104 375 866**	**36.1%[3]**	**75.9%[3]**
Nominee-registered shares	74 382 979	473 956 786	69.5%[3, 4]	51.3%[3, 4]

[1] Entirely owned by the Finnish State.
[2] As confirmed to Stora Enso.
[3] As some of the shareholdings on the list are nominee registered, the percentage figures do not add up to 100%.
[4] According to Euroclear Finland.

The list has been compiled by the Company on the basis of shareholder information obtained from Euroclear Finland, Euroclear Sweden and a database managed by Citibank, N.A (Citi). This information includes only directly registered holdings, thus certain holdings (which may be substantial) of shares held in nominee or brokerage accounts cannot be included. The list is therefore incomplete.

Ownership distribution as at 31 December 2018

	% of shares	% of votes
Solidium Oy[1]	10.7%	27.3%
FAM AB[2]	10.2%	27.3%
Social Insurance Institution of Finland (KELA)	3.1%	10.1%
Finnish institutions (excl. Solidium and KELA)	11.6%	8.6%
Swedish institutions (excl. FAM)	4.9%	4.6%
Finnish private shareholders	4.2%	2.5%
Swedish private shareholders	3.1%	2.2%
ADR holders	2.0%	0.7%
Under nominee names (non-Finnish/non-Swedish shareholders)	50.2%	16.7%
Total	**100.0%**	**100.0%**

[1] Entirely owned by the Finnish State.
[2] As confirmed to Stora Enso.

Share distribution as at 31 December 2018

By size of holding, A share	Shareholders	%	Shares	%
1–100	4 740	49.57%	220 209	0.13%
101–1 000	4 185	43.76%	1 511 244	0.86%
1 001–10 000	605	6.33%	1 396 829	0.79%
10 001–100 000	27	0.28%	513 702	0.29%
100 001–1 000 000	0	0.00%	0	0.00%
1 000 001–	6	0.06%	172 670 688	97.93%
Total	**9 563**	**100.00%**	**176 312 672**	**100.00%**

By size of holding, R share	Shareholders	%	Shares	%
1–100	10 889	27.61%	624 069	0.10%
101–1 000	21 563	54.67%	9 141 510	1.49%
1 001–10 000	6 367	16.14%	16 998 021	2.78%
10 001–100 000	519	1.32%	14 249 726	2.33%
100 001–1 000 000	79	0.20%	23 597 005	3.85%
1 000 001 –	23	0.06%	547 696 984	89.45%
Total	**39 440**	**100.00%**	**612 307 315**	**100.00%**

According to Euroclear Finland.

Outlook and short-term risks

Stora Enso introduces new way of giving annual outlook and quarterly guidance. The Group starts to guide absolute range for quarterly operational EBIT, instead of comparing quarterly sales and operational EBIT to the previous quarter qualitatively.

Stora Enso's year 2019 is expected to be largely in line with 2018, provided that the current trading conditions do not significantly change. Demand growth is expected to continue for Stora Enso's other businesses except for European Paper, for which demand is forecast to continue to decline in 2019. Group's sales are expected to be higher and costs are forecast to increase in 2019 compared to 2018. Stora Enso will implement measures to mitigate these cost increases and the increased uncertainties with the profit protection programme.

Stora Enso publishes the quarterly guidances in its interim reports.

Increasing competition, and supply and demand imbalances in the paper, pulp, packaging, wood products and roundwood markets may affect Stora Enso's market share and profitability. Changes in the global economic and political environment, sharp market corrections, increasing volatility in foreign exchange rates and deteriorating economic conditions in the main markets could all affect Stora Enso's profits, cash flows and financial position.

With reference to current geopolitical circumstances, there is an increasing risk of an escalation in protectionist measures to the extent that global trade could materially shrink. This would have major knock-on effects for inflation, business sentiment, consumer sentiment and ultimately global economic growth.

Furthermore, as the global economy is moving into a new phase where the main central banks will begin to reduce or reverse their lenient monetary policy positions, such developments may give rise to significant uncertainty and negatively affect Stora Enso's business conditions.

Other risks and uncertainties include, but are not limited to, general industry conditions, such as changes in the cost or availability of raw materials, energy and transportation costs, unanticipated expenditures related to the cost of compliance with existing and new environmental and other governmental regulations and to actual or potential litigation, material disruption at one of our manufacturing facilities, risks inherent in conducting business through joint ventures, and other factors that can be found in Stora Enso's press releases and disclosures.

Energy sensitivity analysis: the direct effect of a 10% increase in electricity, heat, oil and other fossil fuel market prices would have a negative impact of approximately EUR 12 million on operational EBIT for the next 12 months, after the effect of hedges.

Wood sensitivity analysis: the direct effect of a 10% increase in wood prices would have a negative impact of approximately EUR 203 million on operational EBIT for the next 12 months.

Pulp sensitivity analysis: the direct effect of a 10% increase in pulp market prices would have a positive impact of approximately EUR 130 million on operational EBIT for the next 12 months.

Chemical and filler sensitivity analysis: the direct effect of a 10% increase in chemical and filler prices would have a negative impact of approximately EUR 62 million on operational EBIT for the next 12 months.

A decrease of energy, wood, pulp or chemical and filler prices would have the opposite impact.

Foreign exchange rates sensitivity analysis for the next twelve months: the direct effect on operational EBIT of a 10% strengthening in the value of the US dollar, Swedish krona and British pound against the euro would be approximately positive EUR 184 million, negative EUR 99 million and positive EUR 38 million annual impact, respectively. Weakening of the currencies would have the opposite impact. These numbers are before the effect of hedges and assuming no changes occur other than a single currency exchange rate movement.

The Group incurs annual unhedged net costs worth approximately EUR 120 million in Brazilian real (BRL) in its operations in Brazil and approximately EUR 110 million in Chinese Renminbi (CNY) in its operations in China. For these flows, a 10% strengthening in the value of a foreign currency would have a EUR 12 million and EUR 11 million negative impact on operational EBIT, respectively.

Events after the balance sheet date

On 29 January the Supreme Court denied the Finnish Metsähallitus' application to appeal in the roundwood claim case.

On 1 February Stora Enso announced a profit protection programme to strengthen competitiveness. The intention is to achieve annual cost reduction of EUR 120 million as well as reduction of capital expenditure by about EUR 50 million compared to the earlier forecast.

Proposal for the distribution of dividend

The Board of Directors proposes to the AGM that a dividend of EUR 0.50 per share be distributed for the year 2018.

The dividend would be paid to shareholders who on the record date of the dividend payment, 18 March 2019, are recorded in the shareholders' register maintained by Euroclear Finland Oy or in the separate register of shareholders maintained by Euroclear Sweden AB for Euroclear Sweden registered shares. Dividends payable to Euroclear Sweden registered shares will be forwarded by Euroclear Sweden AB and paid in Swedish crowns. Dividends payable to ADR holders will be forwarded by Citibank N.A. and paid in US dollars.

The Board of Directors proposes to the AGM that the dividend be paid on or about 25 March 2019.

Annual General Meeting

Stora Enso Oyj's Annual General Meeting (AGM) will be held on Thursday 14 March 2019 at 4.00 p.m. Finnish time at Finlandia Hall, Mannerheimintie 13 e, Helsinki, Finland.

Non-IFRS measures

The Group's key non-IFRS performance metric is operational EBIT, which is used to evaluate the performance of its operating segments and to steer allocation of resources to them. Operational EBIT comprises the operating profit excluding items affecting comparability (IAC) and fair valuations from the segments and Stora Enso's share of the operating profit of equity accounted investments (EAI), also excluding items affecting comparability and fair valuations.

Items affecting comparability are exceptional transactions that are not related to recurring business operations. The most common IAC are capital gains and losses relating to disposal of fixed assets, impairments or impairment reversals, disposals gains and losses relating to Group companies, environmental provisions, provisions for planned restructurings, other provisions and penalties. Items affecting comparability are normally disclosed individually if they exceed one cent per share.

Fair valuations and non-operational items include equity incentive schemes and related hedges, CO_2 emission rights, valuations of biological assets and the Group's share of income tax and net financial items of EAI.

Cash flow from operations (non-IFRS) is a group specific way to present operative cash flow without hedging result from OCI and starting from operational EBITDA instead of operating profit.

Cash flow after investing activities (non-IFRS) is calculated as follows: cash flow from operations (non-IFRS) excluding cash spent on intangible assets, property, plant and equipment, and biological assets and acquisitions of EAIs.

The full list of the non-IFRS measures is presented at the end of this report.

Calculation of key figures

Operational return on capital employed, operational ROCE (%)

$$100 \times \frac{\text{Annualised operational EBIT}}{\text{Capital employed}^{1,2}}$$

Operational return on operating capital, operational ROOC (%)

$$100 \times \frac{\text{Annualised operational EBIT}}{\text{Operating capital}^{1,2}}$$

Return on equity, ROE (%)

$$100 \times \frac{\text{Net profit/loss for the period}}{\text{Total equity}^{2}}$$

Net interest-bearing liabilities

Interest-bearing liabilities – interest-bearing assets

Net debt/equity ratio

$$\frac{\text{Net interest-bearing liabilities}}{\text{Equity}^{3}}$$

Earnings per share (EPS)

$$\frac{\text{Net profit/loss for the period}^{3}}{\text{Average number of shares}}$$

Payout ratio, excl. IAC, %

$$100 \times \frac{\text{Dividend distribution / share}}{\text{EPS excl. IAC}}$$

Dividend and distribution yield, %

$$100 \times \frac{\text{Dividend distribution / share}}{\text{Closing price of share}}$$

Price/earnings ratio (P/E), excl. IAC

$$\frac{\text{Closing price of share}}{\text{EPS excl. IAC}}$$

Operational EBIT

Operating profit/loss excluding items affecting comparability (IAC) and fair valuations of the segments and Stora Enso's share of operating profit/loss excluding IAC and fair valuations of its equity accounted investments (EAI)

Operational EBITDA

Operating profit/loss excluding operational decrease in the value of biological assets, fixed asset depreciation and impairment, IACs and fair valuations. The definition includes the respective items of subsidiaries, joint arrangements and equity accounted investments.

Net debt/last 12 months' operational EBITDA ratio

$$\frac{\text{Net interest-bearing liabilities}}{\text{LTM operational EBITDA}}$$

Fixed costs

Maintenance, personnel and other administrative type of costs, excluding IAC and fair valuations

Last 12 months (LTM)

12 months prior to the end of reporting period

TRI

Total recordable incident rate = number of incidents per one million hours worked

[1] Capital employed = Operating capital – Net tax liabilities
[2] Average for the financial period
[3] Attributable to owners of the Parent

List of non-IFRS measures

Operational EBITDA
Operational EBITDA margin
Operational EBIT
Operational EBIT margin
Capital expenditure
Capital employed
Operational ROCE
Earnings per share (EPS), excl. IAC
Operational ROOC
Net debt/last 12 months' operational EBITDA ratio
Cash flow from operations
Cash flow after investing activities

Consolidated financial statements

Consolidated income statement

EUR million	Note	Year Ended 31 December 2018	2017
Sales	3	**10 486**	**10 045**
Other operating income	5	92	147
Changes in inventories of finished goods and work in progress		125	28
Materials and services		-6 157	-5 945
Freight and sales commissions		-932	-968
Personnel expenses	6	-1 330	-1 331
Other operating expenses	5	-526	-551
Share of results of equity accounted investments	13	181	66
Change in net value of biological assets	12	-68	-72
Depreciation, amortisation and impairment charges	10	-479	-515
Operating Profit	3	**1 390**	**904**
Financial income	8	27	38
Financial expense	8	-207	-200
Profit before Tax		**1 210**	**742**
Income tax	9	-221	-128
Net Profit for the Year		**988**	**614**
Attributable to:			
Owners of the Parent	18	1 013	625
Non-controlling Interests	19	-24	-11
Net Profit for the Year		**988**	**614**
Earnings per Share			
Basic and diluted earnings per share, EUR	32	1.28	0.79

Consolidated statement of comprehensive income

EUR million	Note	Year Ended 31 December 2018	2017
Net profit for the year		**988**	**614**
Other Comprehensive Income (OCI)			
Items that will Not be Reclassified to Profit and Loss			
Equity instruments at fair value through other comprehensive income	14	97	0
Actuarial losses/gains on defined benefit plans	20	-24	61
Income tax relating to items that will not be reclassified	9	5	-10
		78	**51**
Items that may be Reclassified Subsequently to Profit and Loss			
Share of OCI of equity accounted investments that may be reclassified	27	4	5
Currency translation movements on equity net investments (CTA)	28	-36	-288
Currency translation movements on non-controlling interests	19	0	-3
Net investment hedges	28	-14	40
Cash flow hedges	27	-24	32
Cost of hedging - time value of options	27	-2	0
Non-controlling interests' share of cash flow hedges	19	-2	0
Available-for-sale investments	14	0	39
Income tax relating to items that may be reclassified	9	7	-10
		-68	**-185**
Total Comprehensive Income		**999**	**480**
Attributable to:			
Owners of the Parent		1 025	494
Non-controlling interests	19	-27	-14
Total Comprehensive Income		**999**	**480**

The accompanying Notes are an integral part of these Consolidated financial statements.

Consolidated statement of financial position

EUR million		Note	As at 31 December 2018	2017
Assets				
Goodwill	O	11	243	237
Other intangible assets	O	11	254	229
Property, plant and equipment	O	11	5 234	5 310
		11	**5 731**	**5 776**
Biological assets	O	12	457	448
Emission rights	O		26	12
Equity accounted investments	O	13	1 729	1 600
Listed securities	I	14	13	21
Unlisted securities	O	14	422	318
Non-current loan receivables	I	25	54	55
Deferred tax assets	T	9	120	154
Other non-current assets	O	15	48	50
Non-current Assets			**8 601**	**8 434**
Inventories	O	16	1 567	1 321
Tax receivables	T	9	9	9
Operative receivables	O	17	1 487	1 319
Interest-bearing receivables	I	25	55	80
Cash and cash equivalents	I		1 130	607
Current Assets			**4 248**	**3 336**
Total Assets			**12 849**	**11 770**

EUR million		Note	As at 31 December 2018	2017
Equity and Liabilities				
Share capital		18	1 342	1 342
Share premium			77	77
Fair value reserve		27	290	210
Cumulative translation adjustment		28	-335	-288
Invested non-restricted equity fund			633	633
Retained earnings			3 694	3 409
Net profit for the year			1 013	625
Equity Attributable to Owners of the Parent			**6 714**	**6 008**
Non-controlling Interests		19	18	47
Total Equity			**6 732**	**6 055**
Post-employment benefit provisions	O	20	401	377
Other provisions	O	22	101	111
Deferred tax liabilities	T	9	168	166
Non-current debt	I	26	2 265	2 046
Other non-current operative liabilities	O	23	34	52
Non-current Liabilities			**2 970**	**2 752**
Current portion of non-current debt	I	26	403	370
Interest-bearing liabilities	I	26	675	596
Bank overdrafts	I	26	1	4
Other provisions	O	22	16	23
Other operative liabilities	O	23	1 960	1 888
Tax liabilities	T	9	92	82
Current Liabilities			**3 147**	**2 963**
Total Liabilities			**6 117**	**5 715**
Total Equity and Liabilities			**12 849**	**11 770**

Items designated “O” comprise Operating Capital, items designated “I” comprise Interest-bearing Net Liabilities, items designated “T” comprise Net Tax Liabilities. The accompanying Notes are an integral part of these Consolidated financial statements.

Consolidated cash flow statement

EUR million	Note	Year Ended 31 December 2018	2017
Cash Flow from Operating Activities			
Net profit for the year		988	614
Adjustments and reversal of non-cash items:			
Taxes	9	221	128
Depreciation and impairment charges	10	479	515
Change in value of biological assets	12	68	72
Change in fair value of share awards and TRS		2	10
Share of results of equity accounted investments	13	-181	-66
Profits and losses on sale of fixed assets and investments	5	20	7
Net financial items	8	180	162
Other adjustments		-9	-7
Dividends received from equity accounted investments	13	24	20
Interest received		3	3
Interest paid		-116	-143
Other financial items, net		-9	-53
Income taxes paid	9	-152	-97
Change in net working capital, net of businesses acquired or sold		-428	37
Net Cash Provided by Operating Activities		**1 092**	**1 202**
Cash Flow from Investing Activities			
Acquisition of subsidiary shares and business operations, net of disposed cash	4	-4	0
Acquisition of shares in equity accounted investments	13	-29	-9
Acquisition of unlisted securities	14	-3	-8
Proceeds from disposal of subsidiary shares and business operations, net of disposed cash	4	42	-4
Proceeds from disposal of shares in equity accounted investments	13	3	5
Proceeds from disposal of unlisted securities	14	1	0
Proceeds from disposal of intangible assets and property, plant and equipment	11	9	45
Income taxes paid on disposal of property		0	-15
Capital expenditure	3, 11	-442	-578
Investment in biological assets	12	-83	-80
Proceeds from/payment of non-current receivables, net		8	-52
Net Cash Used in Investing Activities		**-497**	**-696**

EUR million	Note	Year Ended 31 December 2018	2017
Cash Flow from Financing Activities			
Proceeds from issue of new long-term debt	26	578	425
Repayment of long-term debt	26	-358	-1 034
Change in short-term borrowings	26	39	76
Dividends paid		-323	-292
Buy-out of interest in subsidiaries from non-controlling interests	19	-2	0
Equity injections from, less dividends to, non-controlling interests	19	-2	-1
Purchase of own shares		-5	-3
Net Cash Used in Financing Activities		**-73**	**-829**
Net Change in Cash and Cash Equivalents		**521**	**-323**
Translation adjustment		4	-23
Net Cash and cash equivalents at beginning of year		603	949
Net Cash and Cash Equivalents at Year End		**1 128**	**603**
Cash and Cash Equivalents at Year End[1]		**1 130**	**607**
Bank Overdrafts at Year End		**-1**	**-4**
Net Cash and Cash Equivalents at Year End		**1 128**	**603**

[1] Cash and cash equivalents comprise cash-in-hand, deposits held at call with banks and other liquid investments with original maturity of less than three months. Bank overdrafts are included in current liabilities.
The accompanying Notes are an integral part of these Consolidated financial statements.

Consolidated cash flow statement

Supplemental cash flow information

		Year Ended 31 December	
EUR million	**Note**	**2018**	**2017**
Change in Net Working Capital consists of:			
Change in inventories		-267	-25
Change in interest-free receivables:			
Current		-183	-137
Non-current		-1	1
Change in interest-free liabilities:			
Current		36	200
Non-current		-13	-2
Change in Net Working Capital, Net of Businesses Acquired or Sold		**-428**	**37**
Cash and Cash Equivalents consist of:			
Cash on hand and at banks		801	592
Cash equivalents		328	15
Cash and Cash Equivalents		**1 130**	**607**
Non-Cash Investing Activities			
Total capital expenditure		491	560
Amounts paid		-442	-578
Non-Cash Part of Additions to Intangible Assets and Property, Plant and Equipment		**49**	**-18**
Cash Flow on Acquisitions of Subsidiaries and Business Operations			
Purchase consideration on acquisitions, cash part	4	5	0
Cash and cash equivalents in acquired companies, net of bank overdraft	4	-1	0
Net Cash Flow on Acquisition		**4**	**0**
Cash Flow on Disposals of Subsidiaries and Business Operations			
Cash part of the consideration	4	44	0
Cash and cash equivalents in divested companies	4	-2	-7
Net Cash Flow from Disposal		**42**	**-7**
Non-cash part of the consideration		0	1
Total Consideration, net of Cash and Cash Equivalents in Divested Companies		**42**	**-6**
Cash Received Regarding Previous year disposals		0	3

The accompanying Notes are an integral part of these Consolidated financial statements.

Statement of changes in equity

					Fair Valuation Reserve									
EUR million	Share Capital	Share Premium and Reserve Fund	Invested Non-Restricted Equity Fund	Treasury Shares	Step Acquisition Revaluation Surplus	Equity instruments through OCI	Available for Sale Investments	Cash Flow Hedges	OCI of Equity Accounted Investments	CTA and Net Investment Hedges	Retained Earnings	Attributable to Owners of the Parent	Non-controlling Interests	Total
Balance at 31 December 2016	**1 342**	**77**	**633**	**0**	**4**	**0**	**162**	**-11**	**-19**	**-32**	**3 650**	**5 806**	**62**	**5 868**
Profit/loss for the year	0	0	0	0	0	0	0	0	0	0	625	625	-11	614
OCI before tax	0	0	0	0	0	0	39	32	5	-248	61	-111	-3	-114
Income tax relating to components of OCI	0	0	0	0	0	0	4	-6		-8	-10	-20		-20
Total Comprehensive Income	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**26**	**5**	**-256**	**676**	**494**	**-14**	**480**
Dividend	0	0	0	0	0	0	0	0	0	0	-292	-292	-1	-293
Purchase of treasury shares	0	0	0	-3	0	0	0	0	0	0	0	-3		-3
Share-based payments	0	0	0	3	0	0	0	0	0	0	0	3		3
Balance at 31 December 2017	**1 342**	**77**	**633**	**0**	**4**	**0**	**205**	**15**	**-14**	**-288**	**4 034**	**6 008**	**47**	**6 055**
Adoption of IFRS 2 and IFRS 9[1]						205	-205				8	8		8
Balance at 1 January 2018	**1 342**	**77**	**633**	**0**	**4**	**205**	**0**	**15**	**-14**	**-288**	**4 042**	**6 016**	**47**	**6 063**
Profit/loss for the year	0	0	0	0	0	0	0	0	0	0	1 013	1 013	-24	988
OCI before tax	0	0	0	0	0	97	0	-26	4	-50	-24	0	-2	-2
Income tax relating to components of OCI	0	0	0	0	0	1	0	5	0	3	4	13	0	13
Total Comprehensive Income	**0**	**0**	**0**	**0**	**0**	**98**	**0**	**-22**	**4**	**-47**	**993**	**1 026**	**-27**	**999**
Dividend	0	0	0	0	0	0	0	0	0	0	-323	-323	-2	-326
Acquisitions and disposals	0	0	0	0	0	0	0	0	0	0	0	0	-2	-2
NCI buy-out	0	0	0	0	0	0	0	0	0	0	-2	-2	2	0
Purchase of treasury shares	0	0	0	-5	0	0	0	0	0	0	0	-5	0	-5
Share-based payments	0	0	0	5	0	0	0	0	0	0	-3	2	0	2
Balance at 31 December 2018	**1 342**	**77**	**633**	**0**	**4**	**304**	**0**	**-7**	**-11**	**-335**	**4 706**	**6 714**	**18**	**6 732**

[1] See Basis of Preparation relating to new and amended standards applied to annual periods beginning in January 2018.

CTA = Cumulative Translation Adjustment, NCI = Non-controlling Interests, OCI = Other Comprehensive Income, EAI = Equity Accounted Investments

Notes to the Consolidated financial statements

Note 1 Accounting principles

Principal activities

Stora Enso Oyj ("the Company") is a Finnish public limited liability company organised under the laws of the Republic of Finland and with its registered address at Kanavaranta 1, 00160 Helsinki. Its shares are currently listed on Nasdaq Helsinki and Stockholm. The operations of Stora Enso Oyj and its subsidiaries (together "Stora Enso" or "the Group") are organised into the following divisions: Consumer Board, Packaging Solutions, Biomaterials, Wood Products, Paper and the segment Other. Segment Other includes the Nordic forest equity accounted investments, Stora Enso's shareholding in Pohjolan Voima, operations supplying wood to the Nordic and Baltic mills, plantations not connected to any mill site and group shared services and administration. The Group's main market is Europe, with an expanding presence in Asia and South America.

The Financial Statements were authorised for issue by the Board of Directors on 31 January 2019.

Basis of preparation

The Consolidated Financial Statements of Stora Enso Oyj have been prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the European Union, including International Accounting Standards (IAS) and interpretations issued by the IFRS Interpretations Committee (IFRIC). The Consolidated Financial Statements of Stora Enso Oyj have been prepared according to the historical cost convention, except as disclosed in the accounting policies. The detailed accounting principles are explained in the related notes with a few exceptions where the accounting principles are presented in this note. The Consolidated financial statements are presented in euros, which is the parent company's functional currency.

All figures in this Annual Report have been rounded to the nearest million, unless otherwise stated. Therefore, figures in this report may not add up precisely to the totals presented and may vary from previously published financial information.

New and amended standards and interpretations adopted in 2018

The Group has applied the following amendments which are effective from 1 January 2018:

- **IFRS 9 Financial Instruments**. The Group has adopted IFRS 9 Financial Instruments standard effective from 1 January 2018. The standard replaced IAS 39 Financial instruments: Recognition and Measurement. The standard includes revised requirements for recognition and measurement of financial assets and liabilities, impairment and general hedge accounting.

The new impairment model for financial assets requires recognition of loss allowances based on the expected credit loss model. At the adoption of IFRS 9, the Group has updated its impairment methodology to be in line with IFRS 9. For trade receivables, simplified approach has been implemented and loss allowances are recognised based on expected lifetime credit losses. For receivables measured at amortised cost or fair value through other comprehensive income, general approach has been implemented with the loss allowance being recognised based on 12-month expected credit losses if there has not been a significant increase in credit risk since the initial recognition. As a result of the new impairment methodology, the Group recognised EUR 3 million negative pre-tax transition adjustment to the opening balance of retained earnings for 2018.

The Group has evaluated its financial assets and liabilities based on the new classification and measurement criteria under IFRS 9. Stora Enso has categorised its financial assets to be measured at amortised cost, at fair value through other comprehensive income and at fair value through Income statement. For financial liabilities, the classification is based on amortised cost and fair value through income statement categories. On the date of initial application, 1 January 2018, the financial assets and liabilities of the Group were as follows:

Classification changes of financial instruments

	Measurement category		Carrying amount		
	Classification under IAS 39	**Classification under IFRS 9**	**Original**	**New**	**Difference**
Non-current financial assets					
Listed securities	Available-for-sale financial assets	Fair value through other comprehensive income (FVTOCI)	21	21	0
Unlisted securities	Available-for-sale financial assets	Fair value through Other comprehensive income (FVTOCI) and Fair value through Income Statement (FVTPL)	318	318	0
Non-current loan receivables	Loans and receivables (amortised cost)	Amortised cost	55	55	0
Current financial assets					
Trade and other operative receivables	Loans and receivables (amortised cost)	Amortised cost and Fair value through Other comprehensive income (FVTOCI)	965	962	-3
Interest-bearing receivables	Loans and receivables (amortised cost)	Amortised cost	15	15	0
Derivatives (under hedge accounting)	Fair value through other comprehensive income (FVTOCI)	Fair value through Other comprehensive income (FVTOCI)	49	49	0
Derivatives (not under hedge accounting)	Fair value through Income Statement (FVTPL)	Fair value through Income Statement (FVTPL)	16	16	0
Cash and cash equivalents	Loans and receivables (amortised cost)	Amortised cost	607	607	0
Total financial assets			**2 046**	**2 043**	**-3**
Non-current financial liabilities					
Non-current debt	Amortised cost	Amortised cost	2 046	2 046	0
Current financial liabilities					
Current portion of non-current debt	Amortised cost	Amortised cost	370	370	0
Interest-bearing liabilities	Amortised cost	Amortised cost	560	560	0
Derivatives (under hedge accounting)	Fair value through other comprehensive income (FVTOCI)	Fair value through other comprehensive income (FVTOCI)	32	32	0
Derivatives (not under hedge accounting)	Fair value through Income Statement (FVTPL)	Fair value through Income Statement (FVTPL)	4	4	0
Bank overdrafts	Amortised cost	Amortised cost	4	4	0
Contingent consideration	Fair value through Income Statement (FVTPL)	Fair value through Income Statement (FVTPL)	20	20	0
Trade and other operative payables	Amortised cost	Amortised cost	1 576	1 576	0
Total financial liabilities			**4 612**	**4 612**	**0**

The Group has elected to classify its equity investments in Pohjolan Voima shares and certain listed shares held by the Group, earlier classified as available-for-sale investments (AFS) under IAS 39, at fair value through other comprehensive income (FVTOCI) under IFRS 9. The gains and losses resulting from changes in the fair value of equity investments under FVTOCI are not recycled to the Income Statement upon impairment or disposal, with only dividend income being recognised in the Income Statement.

Under IFRS 9 the changes in the time value of currency options used as hedges of foreign currency sales will be recognised in other comprehensive income to the extent that they relate to the hedged items, and will be reclassified from equity to profit or loss in the same period or periods during which the expected future cash flows will affect the profit or loss. The change will reduce income statement volatility compared to IAS 39. The outstanding option time value as at the date of adoption amounted to EUR 1 million negative and was recognised as a transition adjustment to the opening balance of retained earnings for 2018.

Figures in the comparison periods have not been restated.

- **IFRS 15 Revenue from Contracts with Customers**. The Group has adopted IFRS 15 standard and related clarifications effective from 1 January 2018. The standard replaced IAS 18 Revenue and IAS 11 Construction Contracts standards and related interpretations. The new standard specifies how and when revenue is recognised. The standard is based on the principle that revenue is recognised when control of a good or service transfers to a customer. The Group has reviewed its performance obligations, main customer contracts for each division and evaluated the impact of IFRS 15 based on the amount and timing of revenue recognition.

In conclusion, the adoption of IFRS 15 has no significant impact on the substance of the principles applied by the Group to the amount and timing of revenue recognition. The revenue recognition principles and delivery terms applied by the Group remain generally unaltered.

The Group has adopted the modified retrospective application of IFRS 15 from 1 January 2018, without adjusting prior reporting periods. The new guidance is applied only to contracts that are not completed at the adoption date. No adjustment to the opening balance of retained earnings has been made as there are no changes in the timing of the revenue recognition. As from 1 January 2018 non-significant amounts of transport and freight sales and silviculture services previously presented under other operating income have been reclassified to the sales line in the consolidated income statement. In 2018 the amount of these items was EUR 56 million. The previous year's figures have not been restated due to immateriality.

- Amendments to IFRS 2 Classification and Measurement of Share-based Payment Transactions effective from 1 January 2018 were adopted prospectively without restatement of comparative periods. Tax laws or regulations may require the Group to withhold an amount for an employee's tax obligation associated with a share-based payment and transfer that amount, normally in cash, to the tax authority on the employee's behalf. To fulfil this obligation, the Group withholds the number of equity instruments equal to the monetary value of the employee's tax obligation from the total number of equity instruments that otherwise would have been issued to the employee upon vesting of the share-based payment. According to the IFRS 2 amendments, such transactions are to be classified in their entirety as equity-settled share-based payment transactions, even though the tax obligation is paid in cash on behalf of the employee. Resulting from the application of the amendments, the Group recognised EUR 9 million positive transition adjustment to the opening balance of retained earnings for 2018.

- Other amended IFRS standards and interpretations are not relevant to the Group.

Consolidation principles

The Consolidated financial statements include the parent company, Stora Enso Oyj, and all companies controlled by the Group. Control is defined as when the Group:

- has power over the investee,
- is exposed, or has rights, to variable returns from its involvement with the investee; and
- has the ability to use its power to affect its returns.

If facts and circumstances indicate that there are changes to the three elements of control listed above the Group reassess whether or not it controls an investee. Acquired companies are accounted for under the purchase method whereby they are included in the consolidated financial statements from the date the control over the subsidiary is obtained, whereas, conversely, divestments are included up to the date when the control is lost. The principal subsidiaries and joint operations are listed in Note 30 Principal subsidiaries and joint operations.

All intercompany transactions, receivables, liabilities and unrealised profits, as well as intragroup profit distributions, are eliminated. Accounting policies for subsidiaries, joint arrangements and all equity accounted investments are adjusted where necessary to ensure consistency with the policies adopted by Stora Enso. Non-controlling interests are presented as a separate component of equity.

Associated companies over which Stora Enso exercises significant influence are accounted for using the equity method, which involves recognising the Group's share of the equity accounted investment profit or loss for the year less any impaired goodwill in the consolidated income statement. These companies are undertakings in which the Group has significant influence, but which it does not control. Significant influence means the power to participate in the financial and operating policy decisions of the company without control or joint control over those policies. The most significant of such companies are listed in Note 13 Equity accounted investments.

The Group's interest in an associated company is carried in the consolidated statement of financial position at an amount that reflects its share of the net assets of the associate together with any remaining goodwill upon acquisition. When the Group share of losses exceeds the carrying amount of an investment, the carrying amount is reduced to zero and any recognition of further losses ceases unless the Group is obliged to satisfy obligations of the investee that it has guaranteed or which it is otherwise committed to.

Joint control is the contractually agreed sharing of control of the joint arrangement, which exists only when decisions on relevant activities require the unanimous consent of the parties sharing control.

Joint operations are joint arrangements whereby the partners who have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint venture is a joint arrangement whereby the partners who have joint control of the arrangement have rights to the net assets of the joint arrangement.

The Group has two joint operations: Veracel and Montes del Plata. In relation to its interest in joint operations, as a joint operator, the Group recognises assets, liabilities, revenues and expenses using the line-by-line method.

- Veracel is a jointly (50%/50%) owned company of Stora Enso and Fibria located in Brazil. The pulp mill produces 1.2 million tonnes of bleached eucalyptus hard wood pulp per year and both owners are entitled to half of the mill's output. The eucalyptus is sourced mostly from the company's own forestry plantations. The mill commenced production in May 2005 and the group's share of the pulp shipments are sent primarily to Stora Enso mills in Europe and China.
- Montes del Plata is a jointly (50%/50%) owned company of Stora Enso and Arauco located in Uruguay. The Montes del Plata Pulp Mill's annual capacity is 1.4 million tonnes of bleached eucalyptus hard wood pulp and Stora Enso's part, 700 000 tonnes, is sold entirely as market pulp. The eucalyptus is sourced mostly from the company's own forestry plantations. The mill started in June 2014.

Revenue recognition

Sales comprise products, raw materials and services less indirect sales tax and discounts, and are adjusted for exchange differences on sales in foreign currencies. Sales are recognised after Stora Enso has transferred the control of goods and services to a customer and the Group retains neither a continuing right to dispose of the goods, nor effective control of those goods; usually, this means that sales are recorded upon the delivery of goods to customers in accordance with the agreed terms of delivery.

Stora Enso's terms of delivery are based on Incoterms 2010, which are the official rules for the interpretation of trade terms as issued by the International Chamber of Commerce (ICC). The main categories of the terms covering Group sales are:

- "D" terms, under which the group is obliged to deliver the goods to the buyer at the agreed place in the manner specified in the chosen rule, in which case the Point of Sale is the moment of delivery to the buyer.
- "C" terms, whereby the Group arranges and pays for the external carriage and certain other costs, though the Group ceases to be responsible for the goods once they have been handed over to the carrier in accordance with the relevant term. The Point of Sale is thus the handing over of the goods to the carrier contracted by the seller for the carriage to the agreed destination.
- "F" terms, being where the buyer arranges and pays for the carriage, thus the Point of Sale is the handing over of the goods to the carrier contracted by the buyer at the agreed point.

Where local rules may result in invoices being raised in advance of the above, the effect of this revenue advancement is quantified, and an adjustment is made for it.Stora Enso's sales mainly comprise sales of products and the revenue is typically recognised at a point in time when Stora Enso transfers control of these products to a customer. Revenues from services are recognised over time once the service has been performed. More detailed information regarding Stora Enso's principal activities from which the Group generates its revenue and disaggregation of revenue is presented in Note 3 Segment information.

Shipping and handling costs

When Stora Enso is responsible for arranging transport for its sales, such costs are not billed separately but are included in revenue in the value of the goods billed to customers; the shipping costs incurred are shown in materials and services.

Foreign currency transactions

Transactions in foreign currencies are recorded at the rate of exchange prevailing at the transaction date, but at the end of the month foreign-currency-denominated receivables and liabilities are translated using the month-end exchange rate. Foreign exchange differences for operating items are recorded in the appropriate income statement account in the operating profit, and, for financial assets and liabilities, they are entered in the financial items of the consolidated income statement, except when deferred in equity as qualifying net investment hedges. Translation differences on non-monetary financial assets, such as equities classified at fair value through other comprehensive income (FVTOCI), are included in equity.

Foreign currency translations

The Group operates internationally and is thus exposed to currency risks arising from exchange rate fluctuations on the value of its net investment in non-euro area foreign subsidiaries and equity accounted investments. The Income Statements of subsidiaries with functional and presentational currencies other than the euro are translated into the Group reporting currency using the average exchange rates for the year, whereas the statements of financial position of these subsidiaries are translated using the exchange rates at the reporting date. Exchange differences arising from the retranslation of net investments in foreign entities that are non-euro foreign subsidiaries, joint arrangements or equity accounted investments, and of financial instruments that are designated as and are hedges of such investments, are recorded directly in the shareholders' equity in the cumulative translation adjustment (CTA), as shown in the consolidated statement of comprehensive income and Note 28 Cumulative translation adjustments and equity hedging. The cumulative translation differences of divestments and liquidations are combined with their gain or loss on disposal. The CTA is also recycled in the consolidated income statement upon the repayment of share capital, return of investment and any partial disposal of a business unit.

Future standard changes endorsed by the EU but not yet effective in 2018

- **IFRS 16 Leases**. This standard replaces the current guidance in IAS 17 and related interpretations and is a significant change in accounting by lessees in particular. IFRS 16 requires lessees to recognize a lease liability reflecting future lease payments and a right-of-use (ROU) asset for virtually all lease contracts. In accordance IFRS 16, at inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. Amendment in lease definition have no material effect to the Group.

Stora Enso will adopt IFRS 16 on 1 January 2019, using the modified retrospective approach and therefore the comparative information will not be restated and continues to be reported under IAS 17 and IFRIC 4. Effect of initial application of IFRS 16 is recognised in balance sheet at 1 January 2019. At transition, lease liabilities are measured at the present value of the remaining lease payments, discounted at the Group's incremental borrowing rates. ROU assets are measured an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments. The Group allocates the consideration in the contract to each lease component and will separate non-lease components if these are identifiable.

ROU assets are initially measured at cost, which comprises the initial amount of the lease liability adjusted mainly for lease payments made at or before the commencement date. The ROU assets are subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the ROU asset or the end of the lease term. In addition, the ROU asset is adjusted for certain remeasurements of the lease liability.

Lease liabilities are initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the Group's incremental borrowing rates. The lease liabilities are measured at amortised cost using the effective interest method. Lease liabilities are remeasured mainly when there is a change in future lease payments arising from a change in an index or rate, or if there is a change in the Group's assessment whether it will exercise an extension option. When lease liability is remeasured, a corresponding adjustment is generally made to the carrying amount of the ROU asset.

The Group has elected not to recognise ROU assets and lease liabilities for short-term leases that have a lease term of 12 months or less and leases of low value assets. The Group has also applied the exemption not to recognise contracts which are ending in 2019. The Group has defined low value asset exemption to include leases in which the underlying asset is not material to Stora Enso. The assessment of whether the underlying asset is material and is within the scope or excluded from the recognition requirements of IFRS 16 is based on the concept of materiality in the Conceptual Framework and IAS 1. Leases of low value assets are mainly including IT and office equipment, certain vehicles and machinery and other low value items. The Group recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

Undiscounted operating lease commitments at the end of 2018 are EUR 731 million. In accordance with the current assessment of the impact of implementing IFRS 16 indicates that a lease liability in the range of EUR 500-550 million will be recognised. It is expected that operating profit (IFRS) / operational EBIT will somewhat increase since the interest component of leasing payments will be presented in financial expenses. Operational EBITDA will also increase, since both depreciation and interest expenses will be presented below EBITDA. Impact on EPS is not expected to be material. Operating cash flow will increase and financing cash flow will decrease since most of the lease payments are shown in financing cash flow, with no additional impact to total cash flow.

In addition certain land use contracts, amounting to EUR 76 million, before IFRS 16 transition accounted as intangible assets will be classified on transition to IFRS 16 as leases. All the liabilities related to the arrangements have already been settled in previous periods and therefore there is no effect on the lease liability or income statement.

- Other amended IFRS standards and interpretations are not relevant to the Group.

Future standard changes not yet effective and not yet endorsed by the EU in 2018

- Amendments to IAS 28: Long-term Interests in Associates and Joint Ventures. These amendments clarify that an entity should apply IFRS 9 Financial Instruments to long-term interests in an associate or joint venture that form part of the net investment in the associate or joint venture but to which the equity method is not applied. The effective date for these amendments is 1 January 2019. The amendment does not have a significant effect on the Group's financial statement.
- Amendments to IAS 19: Plan Amendment, Curtailment or Settlement. The amendments clarify the accounting when a plan amendment, curtailment or settlement occurs. The amendments require a company to use the updated assumptions from this remeasurement to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. Until now, IAS 19 did not specify how to determine these expenses for the period after the change to the plan. The effective date for these amendments is 1 January 2019. The amendments are not expected to be material for the Group.
- Amendments to IFRS 3 Business combinations. The amendments will help companies determine whether an acquisition made is of a business or a group of assets. The amended definition emphasises that the output of a business is to provide goods and services to customers, whereas the previous definition focused on returns in the form of dividends, lower costs or other economic benefits to investors and others. The effective date for these amendments is 1 January 2019. The amendments are not expected to have material effect for the Group.
- Amendments to References to the Conceptual Framework in IFRS Standards. The revised Conceptual Framework includes: a new chapter on measurement; guidance on reporting financial

performance; improved definitions and guidance—in particular the definition of a liability; and clarifications in important areas, such as the roles of stewardship, prudence and measurement uncertainty in financial reporting. The effective date for these amendments is 1 January 2020. The amendments are not expected to have material effect for the Group.
- Amendments to IAS 1 and IAS 8: Definition of Material. Amendments will clarify the definition of material and to align the definition used in the Conceptual Framework and the standards themselves. The effective date for these amendments is 1 January 2020. The Group is assessing the impact of these amendments.
- IFRS 17 Insurance Contracts: This standard replaces IFRS 4, which currently permits a wide variety of practices in accounting for insurance contracts. The effective date for these amendments is 1 January 2021. The standard is not relevant for the Group.
- Other published standard changes or interpretations are not expected to have a significant effect on the Group's consolidated financial statements or disclosures.

Note 2 Critical accounting estimates and judgements

Use of estimates

The preparation of consolidated financial statements conforming to IFRS requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, as well as the disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the period. The estimates are based on historical experience and various other assumptions that are believed to be reasonable, though actual results and timing could differ from the estimates. Management believes that the accounting policies below represent those matters requiring the exercise of judgement where a different opinion could result in the greatest changes to reported results.

Intangible assets and property, plant and equipment

For material intangible assets and property, plant and equipment in an acquisition, an external advisor makes a fair valuation of the acquired intangible assets and property, plant and equipment and assists in determining their remaining useful lives. Management believes that the assigned values and useful lives, as well as the underlying assumptions, are reasonable, though different assumptions and assigned lives could have a significant impact on the reported amounts.

The carrying amounts of Intangible assets and property, plant and equipment are reviewed at each reporting date or whenever events or changes in circumstances indicate that the carrying amount of an asset may be impaired. The recoverable amount of an asset is estimated as the higher of fair value less the cost of disposal and the value in use, with an impairment charge recognised whenever the carrying amount exceeds the recoverable amount. The value in use is calculated using a discounted cash flow model which is most sensitive to the discount rate as well as the expected future cash flows. The key assumptions used in the impairment testing, including sensitivity analysis, are explained further in Note 10 Depreciation, amortisation and impairment charges.

Goodwill

Goodwill is tested per Cash Generating Unit (CGU) or by group of CGUs at least on an annual basis and any impairment is measured using the discounted cash flow valuation method. This method uses future projections of cash flows from each of the reporting units in a CGU or group of CGUs and includes, among other estimates, projections of future product pricing, production levels, product costs, market supply and demand, projected maintenance capital expenditures and an assumption of the weighted average cost of capital. A pre-tax discount rate used for the net present value calculation of projected cash flows reflects the weighted average cost of capital.

The Group has evaluated the most sensitive estimates which when changed could have a material effect on the fair value of the assets or goodwill and therefore could lead to an impairment. These estimates are expected sales prices of the products, expected operating costs and discount rate. The key assumptions used in the impairment testing, including sensitivity analysis, are explained further in Note 10 Depreciation, amortisation and impairment charges.

Control assessment of joint operations and associates

Note 1 Accounting principles describes Veracel and Montes del Plata as joint operations. In both companies Stora Enso's ownership is 50%. The interpretations as joint operations are based on shareholders' agreements which give Stora Enso rights to a share of the returns and make the Group liable indirectly for the liabilities, as our ability to pay for the pulp is used to finance the debts. Joint operations are consolidated with the proportionate line-by-line method.

The forest holding companies Bergvik Skog Ab and Tornator Oyj are equity accounted investments. Stora Enso does not control the companies alone or jointly with other parties and thus retains its significant minority interest as equity accounted investments. Equity accounted investments are accounted for using the equity method. These companies are presented in Note 13 Equity accounted investments.

Fair value of financial instruments

Where the fair value of financial assets and liabilities cannot be derived directly from publicly quoted market prices, other valuation techniques such as discounted cash flow models, transaction multiples, the Black and Scholes model and the Gordon model are employed. The key judgements include future cash flows, credit risk, volatility and changes in assumptions about these factors which could affect the reported fair value of the financial instruments. Investments in debt and equity instruments of unlisted entities, such as Pohjolan Voima Oy (PVO), represent a significant portion of the group's assets and require significant management judgement, as explained in more detail in Notes 14 Equity instruments and 24 Financial risk management.

Income taxes

Tax assets and liabilities are reviewed on a periodic basis and balances are adjusted appropriately. Management considers that adequate provision has been made for future tax consequences based on the current facts, circumstances and tax law. However, should any tax positions be challenged and not prevail, different outcomes could result and have a significant impact on the amounts reported in the consolidated financial statements.

Post-retirement benefits

The determination of the Group pension obligation and expense is subject to the selection of certain assumptions used by actuaries in calculating such amounts, including, among others, the discount rate, the annual rate of increase in future compensation levels and estimated lifespans. Amounts charged in the Income statement are determined by independent actuaries, however, where actual results differ from the initial estimates, together with the effect of any change in assumptions or other factors, these differences are recorded directly in equity, as disclosed in the statement of comprehensive income. See Note 20 Post-employment benefits for detailed information on the assumptions used in the pension liability calculations.

Biological assets

The Group has biological assets in equity accounted investment companies, joint operation companies and in subsidiaries. Biological assets, in the form of standing trees, are accounted for under IAS 41, which requires that the assets are measured at fair value less the costs to sell them. Fair value is determined using discounted cash flows from continuous operations based on sustainable forest management plans taking into account the growth potential of one cycle. These discounted cash flows require estimates of growth, harvest, sales price and costs, and changes in these premises are included in the consolidated income statement, for directly owned interests and for joint operations, on the line for change in Net Value of Biological assets. For those assets shown in the Consolidated statement of financial position of equity accounted investments, changes are included on the line for Share of results of equity accounted investments. It is therefore important that the Group's, joint operation companies' and the equity accounted investments' management makes appropriate estimates of future price levels and trends for sales and costs, and undertakes regular surveys of the forest to establish the volumes of wood available for cutting and their current growth rates. See Note 12 Biological assets for more detailed information.

Environmental provisions

The Group has made provisions for known environmental liabilities where legal or constructive obligation exists, based on management's best estimate of the remediation costs. There is some uncertainty regarding the timing and amount of these costs and therefore the final liability could differ significantly from the original estimate.

Note 3 Segment information

Stora Enso's reportable segments are formed by five divisions, Consumer Board, Packaging Solutions, Biomaterials, Wood Products, Paper and segment Other.

The activities of the reportable segments are:

Consumer Board

The ambition of the Consumer Board division is to be the global leader in high-quality virgin fibre cartonboard. We aim to be the preferred partner of customers and brand owners in premium end-use packaging and graphical segments. Our wide board and barrier coating selection is suitable for consumer packaging for liquid, food, pharmaceutical and luxury goods.

Packaging Solutions

The Packaging Solutions division provides fibre-based board materials and corrugated packaging products and services that are designed for a wide array of applications. Our renewable high-end packaging solutions serve leading converters, brand owners and retailers - including those in e-commerce that are looking to optimise performance, drive innovation and improve their sustainability.

Biomaterials

The Biomaterials division offers a variety of pulp grades to meet the demands of paper, board, tissue, textile and hygiene product producers. We are maximising the business potential of the by-products extracted in our processes, such as tall oil and turpentine from biomass. Based on our strong innovation approach, all fractions of biomass, like sugars and lignin, hold potential for use in various applications.

Wood Products

The Wood Products division is a leading provider of innovative wood-based solutions. The product range covers all areas of construction, including massive wood elements and wood components. It also includes a variety of sawn timber goods and pellets for sustainable heating. The emerging product range of biocomposites addresses the opportunities to replace plastics in consumer goods and creates potential in various demanding exterior applications in a cost-competitive way.

Paper

Stora Enso is the second largest paper producer in Europe with an established customer base and a wide product portfolio for print and office use. Customers benefit from Stora Enso's broad selection of papers made from recycled and virgin fibre as well as our valuable industry experience, know-how and customer support.

Other

The segment Other includes the Nordic forest equity-accounted investments, Stora Enso's shareholding in the energy company Pohjolan Voima, operations supplying wood to the Nordic and Baltic mills, plantations not connected to any mill site, and Group shared services and administration.

Sales by segment

	External	Internal	Total	External	Internal	Total
EUR million		**2018**			**2017**	
Consumer Board	2 608	14	2 622	2 501	15	2 516
Packaging Solutions	1 318	26	1 344	1 230	25	1 255
Biomaterials	1 233	402	1 635	1 096	387	1 483
Wood Products	1 497	125	1 622	1 573	96	1 669
Paper	3 004	62	3 066	2 857	63	2 920
Other	826	2 599	3 425	788	1 702	2 490
Elimination of internal sales		-3 228	-3 228	0	-2 288	-2 288
Total	**10 486**	**0**	**10 486**	**10 045**	**0**	**10 045**

Disaggregation of revenue

EUR million	**2018**	**2017**
Product sales	10 346	9 957
Service sales	140	88
Total	**10 486**	**10 045**

Product and Service sales by segment

EUR million		**2018**	**2017**
Consumer board	Product sales	2 611	2 505
	Service sales	11	11
Packaging solutions	Product sales	1 340	1 251
	Service sales	4	4
Biomaterials	Product sales	1 610	1 453
	Service sales	25	30
Wood Products	Product sales	1 619	1 667
	Service sales	3	2
Paper	Product sales	3 043	2 910
	Service sales	23	10
Other	Product sales	2 430	2 240
	Service sales	995	250
Inter-segment sales	Product sales	-2 307	-2 069
	Service sales	-922	-219
Total		**10 486**	**10 045**

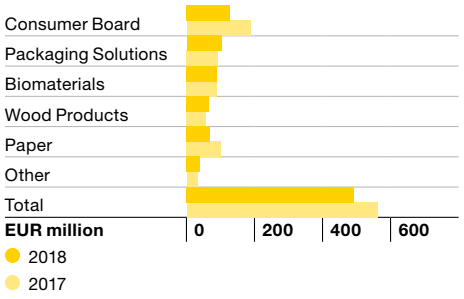
Segment share of operating profit/loss

	Year Ended 31 December	
	Operating Profit/Loss	
EUR million	**2018**	**2017**
Consumer Board	230	253
Packaging Solutions	244	166
Biomaterials	425	254
Wood Products	164	102
Paper	234	106
Other	93	23
Total	**1 390**	**904**
Net financial items	-180	-162
Profit before Tax	1 210	742
Income tax expense	-221	-128
Net Profit	**988**	**614**

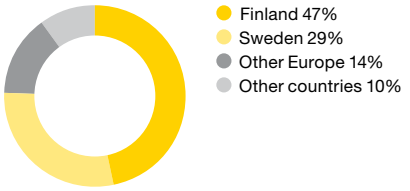
Intangible asset and property, plant and equipment (PPE), depreciations, impairments and reversals, disposal gains and losses and capital expenditure by segment

	Year Ended 31 December					
	Intangible Assets and PPE		Depreciations/ Impairments/Reversals/ Disposal gains and losses		Capital Expenditure	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Consumer Board	1 557	1 611	154	160	128	187
Packaging Solutions	799	783	67	68	102	92
Biomaterials	1 857	1 825	94	109	89	90
Wood Products	454	429	34	35	65	58
Paper	901	951	111	114	68	101
Other	163	177	19	29	39	32
Total	**5 731**	**5 776**	**479**	**515**	**491**	**560**

Capital expenditure by segment



Capital expenditure by location



Goodwill by segment

	Year Ended 31 December			
	Goodwill		Impairment	
EUR million	**2018**	**2017**	**2018**	**2017**
Consumer Board	0	0	0	0
Packaging Solutions	19	19	0	0
Biomaterials	34	28	0	0
Wood Products	107	107	0	0
Paper	83	83	0	0
Other	0	0	0	0
Total	**243**	**237**	**0**	**0**

Average personnel

	Year Ended 31 December	
Segment	**2018**	**2017**
Consumer Board	4 156	4 168
Packaging Solutions	7 750	7 901
Biomaterials	1 731	1 768
Wood Products	4 038	4 031
Paper	4 957	5 022
Other	3 435	3 316
Total	**26 067**	**26 206**
Location		
Austria	970	939
Baltic States	1 270	1 211
Belgium	525	525
Czech Republic	929	875
Finland	6 596	6 675
France	34	42
Germany	990	1 063
Poland	2 103	2 033
Russia	1 108	1 088
Spain	15	16
Sweden	5 168	5 127
Other Europe	222	216
Total Europe	**19 930**	**19 810**
Brazil	431	421
China (incl. Hong Kong)	5 092	5 341
India	0	0
USA	89	96
Uruguay	317	327
Other countries	208	211
Total	**26 067**	**26 206**
Year-End Personnel	**26 129**	**25 657**

External sales by destination and origin

	Sales by Destination		Sales by Origin		Balance of Trade	
EUR million	2018	2017	2018	2017	2018	2017
Austria	295	278	408	375	113	97
Baltic States	258	243	316	273	58	30
Belgium	140	144	259	265	119	121
Czech Republic	149	151	262	257	113	106
Denmark	133	134	21	26	-112	-108
Finland	583	699	3 511	3 634	2 928	2 935
France	506	465	16	14	-490	-451
Germany	1 385	1 282	461	455	-924	-827
Italy	400	343	0	0	-400	-343
Netherlands	282	261	0	0	-282	-261
Poland	552	528	579	492	27	-36
Russia	300	300	222	209	-78	-91
Spain	282	284	0	0	-282	-284
Sweden	1 003	965	3 037	2 733	2 034	1 768
UK	491	456	15	15	-476	-441
Other Europe	903	879	83	91	-820	-788
Total Europe	**7 662**	**7 412**	**9 190**	**8 839**	**1 528**	**1 427**
Australia / New Zealand	192	156	2	18	-190	-138
Brazil	70	62	360	300	290	238
China (incl. Hong Kong)	932	918	498	478	-434	-440
Japan	285	303	0	0	-285	-303
Middle East	261	238	0	0	-261	-238
Uruguay	23	28	424	399	401	371
USA	236	236	12	7	-224	-229
Other countries	825	692	0	4	-825	-688
Total	**10 486**	**10 045**	**10 486**	**10 045**	**0**	**0**

North America

4%

2018 Sales by destination

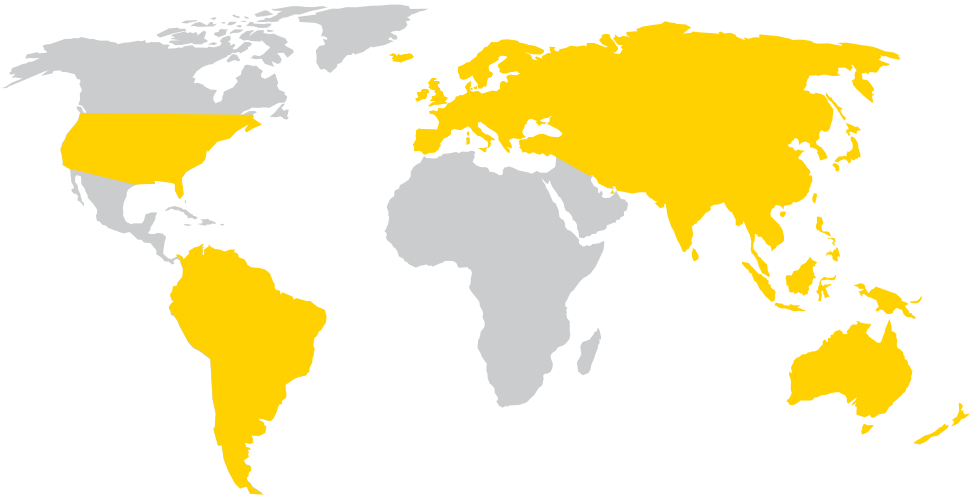
Europe

73%

2018 Sales by destination

88%

2018 Sales by origin



South America

2%

2018 Sales by destination

7%

2018 Sales by origin

Asia Pacific

18%

2018 Sales by destination

5%

2018 Sales by origin

Total assets, capital employed and shareholders' equity by location

	As at 31 December					
	Total Assets		Capital Employed		Shareholders' Equity	
EUR million	2018	2017	2018	2017	2018	2017
Austria	169	171	96	99	132	106
Baltic States	121	106	108	87	140	169
Belgium	235	256	143	167	188	188
Czech Republic	148	158	121	132	135	125
Finland	4 347	3 552	2 623	2 279	1 454	1 281
Germany	362	369	15	21	117	63
Poland	585	588	435	455	360	306
Russia	161	174	104	94	104	141
Sweden	2 958	2 743	1 992	1 795	1 913	1 372
Other Europe	111	112	77	64	236	221
Total Europe	**9 197**	**8 229**	**5 714**	**5 193**	**4 779**	**3 972**
Brazil	377	455	353	433	314	391
China (incl. Hong Kong)	1 433	1 326	1 082	1 100	269	400
Uruguay	1 609	1 556	1 543	1 473	1 214	1 106
USA	147	138	115	105	112	118
Other countries	86	66	17	4	26	21
Total	**12 849**	**11 770**	**8 824**	**8 308**	**6 714**	**6 008**

Total capital employed represents operating capital less net tax liabilities

Reconciliation of operating capital to total asset

	As at 31 December	
EUR million	2018	2017
Operating Capital	**8 955**	**8 393**
Operative liabilities	2 512	2 451
Interest-bearing receivables	1 252	763
Tax receivables	129	163
Total Assets	**12 849**	**11 770**

Operating capital ("O" items) is designated thus on the Balance Sheet and represents the sum of Intangible Asset and Property, Plant and Equipment, biological assets, emission rights, unlisted shares, other non-current assets, inventories, current operative receivables and liabilities, provisions and other non-current operative liabilities.

Intangible asset and property, plant and equipment (PPE), capital expenditure and depreciations, impairments and reversals, disposal gains and losses by location

	Year Ended 31 December					
	Intangible Assets and PPE		Depreciations/ Impairments/Reversals/ Disposal gains and losses		Capital Expenditure	
EUR million	2018	2017	2018	2017	2018	2017
Austria	104	107	6	6	5	5
Baltic States	47	42	6	6	11	3
Belgium	183	202	25	25	6	5
Czech Republic	111	115	4	5	2	3
Finland	1 364	1 320	183	178	230	279
Germany	273	296	26	28	9	10
Poland	406	423	28	33	24	20
Russia	64	67	6	8	13	14
Sweden	815	787	88	103	142	150
Other Europe	3	4	2	0	0	1
Total Europe	**3 370**	**3 363**	**374**	**392**	**442**	**490**
Brazil	185	248	20	30	6	13
China (incl. Hong Kong)	790	823	49	49	23	38
Uruguay	1 268	1 227	33	40	19	13
USA	117	113	3	3	1	5
Other countries	1	2	0	1	0	1
Total	**5 731**	**5 776**	**479**	**515**	**491**	**560**

Note 4 Acquisitions and disposals

Accounting principles

Acquired companies are accounted for under the purchase method whereby they are included in the Consolidated financial statements from the date the control over the subsidiary is obtained, whereas, conversely, divestments are included up to the date when the control is lost.

Acquisition of group companies

In December 2018 Stora Enso bought out non-controlling interests in VLAR Papier NV. Stora Enso previously owned 65% of the company and with the purchase, Group's ownership has increased to 100%. The transaction did not have a material impact on the Group.

In October 2018 Stora Enso has increased its ownership up to 100% in the Sweden-based company Cellutech AB. The company specialises in the development of new materials and applications based on cellulose, micro-fibrillated cellulose and other wood-based components. Stora Enso previously owned 22% of the shares. Cellutech is included in Biomaterials division. The transaction did not have a material financial impact on the Group.

Stora Enso has not acquired any companies or business operations in 2017.

Disposal of group companies and business operations

	Year Ended 31 December	
EUR million	**2018**	**2017**
Net Assets Sold		
Cash and cash equivalents	2	7
Intangible assets and Property, plant and equipment	38	3
Working capital	-2	1
Interest-bearing assets and liabilities	0	-1
Non-controlling interest	-1	0
Net Assets in Divested Companies and Businesses	**38**	**10**
Total Disposal Consideration	**44**	**1**
CTA release	-27	0
Transaction costs	-1	0
Total Net Gain/loss	**-22**	**-9**
Attributable to the owners of the parent	**-22**	**-9**
Attributable to the non-controlling interest holders	**0**	**0**

In December 2018 Stora Enso divested 100% of the shares of its Swedish subsidiary June Emballage AB to its current management. June Emballage is a manufacturer specialized in small-batch custom-made transport packaging in corrugated board and was part of the Packaging Solutions division. The transaction did not have a material impact on the Group.

On 8 August 2018, Stora Enso disposed the shares in Dongguan E-creative Industrial Co. Ltd to Dongguan An Shen Investment Co. Ltd. Stora Enso previously had 51% ownership of the company. The transaction did not have a material impact on the Group.

On 28 March 2018, Stora Enso signed an agreement do divest of its entire 100% shareholding in the wood supply company in Rio Grande do Sul, Brazil to Copa Florestal III FIP Multiestrategia. The final consideration for the divestment of the shares was EUR 30 million. In 2017 the Group recorded writedowns in fixed assets amounting to EUR 5 million in order to reduce the value of the net assets disposed to the consideration. The disposal was completed in the second quarter of 2018. The transaction resulted in a loss of EUR 28 million, due to cumulative translation adjustment (CTA) released from equity through profit and loss at closing. Rio Grande do Sul was part of the segment Other.

In November 2017, Stora Enso signed an agreement to divest its sheeting centre business in Baienfurt, Germany to Pyroll. The sheeting centre operations started in April 2009 and was 100% owned by Stora Enso. The transaction was completed in beginning of January 2018. The transaction did not have a material impact on the Group.

On 1 November 2017, Stora Enso sold 100% of its shares in the Finnish Puumerkki Oy and the Estonian Puumerkki AS to Mimir Invest AB, a global investment firm. Puumerkki is a specialised wholesaler of wooden building materials. The transaction resulted in a loss of EUR 8 million. The divestment supports Stora Enso's Wood Products division in focusing on its growth strategy and further building on the strength of its premium portfolio of products and services.

On 5 July 2017, Stora Enso signed an agreement to divest the business and assets of its Swedish subsidiary Stora Enso Re-board AB, a producer of rigid paperboard for expositions and displays, to Culas AB. The transaction did not have a material impact on the Group.

On 24 March 2017, Stora Enso disposed of the shares of the real estate company Sunilan Kesäniemi Oy. The transaction did not have a material impact on the Group.

On 2 January 2017, Stora Enso divested its Finnish subsidiary Formeca Oy, a provider of high-quality machines for automated packaging lines, to Amitec Oy, a specialised engineering and machine construction company based in Finland. The transaction did not have a material impact on the Group.

Note 5 Other operating income and expense

Accounting principles

Research and development
Research costs are expensed as incurred in other operating expenses in the Consolidated Income Statement. Development costs are also expensed as incurred unless it is probable that future economic benefits will flow to the Group, in which case they are capitalised as intangible assets and depreciated over the period of the income streams.

Government grants
Government grants relating to the purchase of property, plant and equipment are deducted from the carrying value of the asset, while the net cost are capitalised. Other government grants are recognised as income on a systematic basis over the periods necessary to match them with the related costs which they were intended to compensate.

Emission rights and trading
The Group's participation in the European Emissions Trading Scheme, in which it has been allocated allowances to emit a fixed tonnage of carbon dioxide over a fixed period of time, gives rise to an intangible asset for the allowances, a government grant and a liability for the obligation to deliver allowances equal to the emissions that have been made during the compliance period. Emission allowances recorded as intangible assets are recognised when the Group is able to exercise control and are measured at level 1 fair value at the date of initial recognition. If the market value for the emission allowances falls significantly below the carrying amount, and the decrease is considered permanent. At that point an impairment charge is booked for allowances which the Group will not use internally. The liability to deliver allowances is recognised based on actual emissions; this liability will be settled using allowances on hand and measured at the carrying amount of those allowances, with any excess emissions measured at the market value of the allowances at the period end.

In the Consolidated Income Statement, the Group will expense emissions made at the fair value of the rights at their grant date, under materials and services, together with purchased emission rights at their purchase price. Such costs will be offset under other operating income by the income from the original grant of the rights used at their fair value at the grant date, together with income from the release or sale of surplus rights. The Consolidated Income Statement will thus be neutral in respect of all rights consumed that were within the original grant. Any net effect represents the costs of purchasing additional rights to cover excess emissions, or the sale of unused rights in the case that the realised emissions are below the allowances received free of charge or the impairment of allowances are not required for internal use.

Green certificates
Stora Enso is part of the local green energy production system which entitles selected mills in Sweden, Belgium and Poland to receive green certificates based on megawatt hours of green energy produced. Green certificates represent the environmental value of renewable energy generated. The certificates can be traded separately from the energy produced. Several countries use green certificates as a mean to make the support of green electricity generation closer to a market economy instead of more bureaucratic investment support and feed-in tariffs. The certificates are typically received free of charge and they can be traded in the local market to offset part of the production costs. Green certificates are often sold to electricity distributors which have a quota obligation to buy a certain percentage of their electricity from renewable sources. Green certificates are evidencing that the electricity has been produced from sustainable sources.

All certificates received are recognized at grant date market value only in the Balance Sheet. Certificates are posted to prepaid costs and accrued income and a corresponding liability is entered into accrued liabilities and deferred income. As such the fluctuation in market prices does not have impact on the Income statement. The income is recognised only when the certificate is sold.

Other Operating Income and expense

	Year Ended 31 December	
EUR million	**2018**	**2017**
Other Operating Income		
Emission rights granted and disposal gains	32	13
Sale of Green Certificates	32	18
Capital gains on sale of Intangible Assets and Property, Plant and Equipment	4	4
Dividend and gain on sale of unlisted shares	0	3
Insurance compensation	4	25
Rent and other[1]	14	76
Government grants	6	8
Total	**92**	**147**
Other Operating Expenses include		
Rents paid	96	98
Research and development	104	85
Credit losses, net of reversals	8	-7
CTA release	28	0
Materials and Services include		
Emissions rights to be delivered and disposal losses	**23**	**10**

[1] As from 1 January 2018, transport and freight sales and silviculture services in Finland previously presented under other operating income are presented in sales. In 2018 total sales of excess freight capacity amounted to EUR 51 (EUR 66) million. The previous periods have not been restated due to immateriality.

The Group has recorded an Other Operating Income of EUR 32 (EUR 13) million related to Emissions. Under Material and Services an expense of EUR 23 (EUR 10) million has been booked related to the cost of CO_2 emissions from production. Actual realised profits amounted to EUR 8 (EUR 3) million on the disposal of surplus rights and EUR 3 (EUR 2) million is the value of excess emission rights held at the year end.

The Group also generates income from its renewable power generation in Belgium, Sweden and Poland. The power is produced from biomass, so the Group is entitled to Green Certificates for onward sale to electricity retailers for fulfilling their renewable power quota obligations. The income from the sale of green certificates amounted to EUR 32 (EUR 18) million.

Auditor's fees and services

	Year Ended 31 December	
EUR million	**2018**	**2017**
Audit fees	4	4
Audit-related	0	0
Tax fees	0	0
Other fees	1	1
Total	**5**	**5**

In 2018, PwC was selected as the principal auditor of the group. Aggregate fees for professional services rendered to the Group principal auditor PwC amounted to EUR 5 (EUR 5) million. Audit fees relate to the auditing of the annual financial statements or ancillary services normally provided in connection with statutory and regulatory filings. Audit-related fees are incurred for assurance and associated services that are reasonably related to the performance of the audit or for the review of the financial statements.

Note 6 Personnel expenses

Personnel expenses

	Year Ended 31 December	
EUR million	**2018**	**2017**
Wages and salaries	1 000	999
Pensions (see below)	170	166
Share-based remuneration (Note 21)	7	10
Total return swaps	0	-2
Other statutory employer costs	134	136
Other voluntary costs	19	22
Total	**1 330**	**1 331**

Pensions

	Year Ended 31 December	
EUR million	**2018**	**2017**
Defined benefit plans	10	13
Defined contribution plans	160	153
Total	**170**	**166**

The average number of employees in 2018 amounted to 26 067 compared with 26 206 in 2017. Pension costs are discussed further in Note 20 Post-employment benefits.

In 2018, the expense of the share-based remuneration was EUR 7 (EUR 10) million. The expense of share-based remuneration net of Total Return Swaps (TRS) in 2018 amounted to EUR 7 (EUR 8) million. Income of EUR 0 (EUR 2) million was recorded in respect to TRS.

Share-based remuneration comprising of share awards and related hedges are described in more detail in Note 21 Employee variable compensation and equity incentive schemes.

Remuneration of the Group Leadership Team and Board are described in Note 7 Board and executive remuneration.

Note 7 Board and executive remuneration

Board and committee remuneration

	Year Ended 31 December				
	2018			2017	
EUR thousand (before taxes)	Cash	Value of shares	Total	Total	Committee Memberships
Board Members at 31 December 2018					
Jorma Eloranta, Chairman	130	70	200	194	Remuneration, Nomination[2,3], Financial and Audit
Hans Stråberg, Vice Chairman	68	41	109	106	Remuneration, Nomination[2,3]
Anne Brunila	54	29	82	80	Sustainability and Ethics
Elisabeth Fleuriot	49	29	78	76	Remuneration
Hock Goh	49	29	78	76	Sustainability and Ethics
Christiane Kuehne	58	29	86	84	Financial and Audit
Antti Mäkinen	58	29	86	0	Financial and Audit
Richard Nilsson	64	29	93	90	Financial and Audit
Göran Sandberg	49	29	78	76	Sustainability and Ethics
Former Board members					
Mikael Mäkinen (until 28 March 2018)	-	-	-	84	
Total Remuneration as Directors[1]	**578**	**313**	**891**	**866**	

[1] 40% of the Board remuneration in 2018 was paid in Stora Enso R shares purchased from the market and distributed as follows: to Chairman 4 221 R shares, Vice Chairman 2 484 R shares, and members 1 737 R shares each. The Company has no formal policy requirements for the Board members to retain shares received as remuneration.
[2] Shareholders at the Annual General Meeting (AGM) have established a Shareholders' Nomination Board to exist until otherwise decided. The Shareholders' Nomination Board according to its Charter as approved by the AGM comprises of four members: the Chairman and Vice Chairman of the Board of Directors, as well as two members appointed by the two largest shareholders (one each) as of 31 August each year.
[3] Marcus Wallenberg appointed by FAM AB is Chairman of the Nomination Board. Harri Sailas is the member of the Shareholders' Nomination Board appointed by Solidium Oy. Jorma Eloranta and Hans Stråberg were appointed as members of the Shareholders' Nomination Board in their roles as Chairman and Vice Chairman of the Board of Directors.

Shareholders at the Annual General Meeting (AGM) have established a Shareholders' Nomination Board to exist until otherwise decided and to annually prepare proposals for the AGM's approval concerning the number of members of the Board of Directors, the Chairman, Vice Chairman and other members of the Board as well as the remuneration for the Chairman,Vice Chairman and members of the Board and its committees.

Board share interests at 31 December 2018

	Shares held[1]	
	A	R
Board Members at 31 December 2018		
Jorma Eloranta, Chairman	1 150	18 381
Hans Stråberg, Vice Chairman		37 490
Anne Brunila		20 121
Elisabeth Fleuriot		21 151
Hock Goh		25 904
Christiane Kuehne		5 712
Antti Mäkinen		2 137
Richard Nilsson		18 254
Göran Sandberg		4 212
Total Shares Held	**1 150**	**153 362**

[1] Board members' related parties hold no Stora Enso shares.

The following Board members also served in 2018

	Shares Held when Board Membership Ended	Effective Date of Board Membership Ending
Mikael Mäkinen	31 060	28 March 2018

Group Leadership Team (GLT) remuneration and share interests

The table below includes the remuneration paid to GLT members during the year, including the shares vested in that year. The company recommends and expects the CEO and GLT members to hold Stora Enso shares at a value corresponding to at least one annual base salary. Stora Enso shares received as remuneration are therefore recommended not to be sold until this level has been reached.

The aggregate cost of remuneration for GLT in 2018 amounted to EUR 12.2 (EUR 11.1) million. The total number of GLT members was twelve (twelve) at year end in 2018.

In accordance with their respective pension arrangements, GLT members may retire at sixty-five years of age with pensions consistent with local practices in their respective home countries. Contracts of employment provide for six months' notice prior to termination with severance compensation of twelve months basic salary if the termination is at the Company's request.

The outcome of the financial targets relating to the Short term incentive programmes for the performance year 2017, and Long term incentive programmes for the performance years 2015 to 2017 were reviewed and confirmed by the Remuneration Committee in the ordinary February meeting, and approved by the Board of Directors in February.

Note 21 Employee variable compensation and equity incentive schemes includes details of incentive schemes and share opportunity programmes for the management and staff of Stora Enso.

Group Leadership Team remuneration

	Year Ended 31 December					
	2018			2017		
EUR thousand	**CEO**	**Others[1]**	**GLT Total**	**CEO**	**Others**	**GLT Total**
Remuneration						
Annual salary	905	3 589	4 494	913	3 583	4 496
Local housing (actual costs)	0	22	22	0	70	70
Other benefits	20	385	405	20	610	630
Termination benefits	0	0	0	0	531	531
Short Term Incentive programme	611	1 089	1 700	532	643	1 175
Long Term Incentive programme[1]	845	2 431	3 276	549	1 403	1 952
	2 381	**7 516**	**9 897**	**2 014**	**6 840**	**8 854**
Pension Costs						
Mandatory plans	66	1 296	1 362	69	1 029	1 098
Stora Enso voluntary plans[2]	478	447	925	555	544	1 099
	544	**1 743**	**2 287**	**624**	**1 573**	**2 197**
Total Compensation	**2 925**	**9 259**	**12 184**	**2 638**	**8 413**	**11 051**

[1] The 2018 amounts relate to the vesting of programme started in 2015 and ended on 31 December 2017. The 2017 amounts relate to the vesting of programme started in 2014 and ended on 31 December 2016.
[2] The CEO participates in the Swedish Executive Pension Plan where pension accruals are unfunded for all participants, the liability is calculated and insured in accordance with Swedish legislation. The unfunded liability for the CEO amounts to EUR 2 483 thousand.

Executives other than CEO

Short Term Incentive (STI) programmes for management

In 2018, GLT members have STI programmes with up to a maximum of 50% or 60% of their annual fixed salary, payable the year after the performance period. 70% of the STI for 2017 and 2018 was based on financial measures and 30% on Individual Key Targets.

Long Term Incentive (LTI) programmes for management

Since 2014 the LTI programmes have had three-year targets and vest in one portion only after three years, and the absolute maximum vesting level is 100% of the number of shares granted. Three quarters (75%) of the opportunity under the 2015-2017 programmes is in Performance Shares, where the shares are vested in accordance with performance criteria proposed by the Remuneration Committee and approved by the Board of Directors. One quarter (25%) of the opportunity under the 2015-2017 programmes is in Restricted Shares, for which vesting is only subject to continued employment.

The 2018 LTI programme was changed to Performance shares only for GLT members.

Under the 2018 LTI programme, GLT members (in GLT at year end) can potentially receive a value corresponding to 211 410 shares before taxes, assuming the maximum vesting level during the three-year vesting period (2018-2020) is achieved. Total number of shares actually transferred will be lower because a portion of shares corresponding to the tax obligation will be withheld to cover the income tax.

The fair value of employee services received in exchange for share-based compensation payments is accounted for in a manner that is consistent with the method of settlement and is either cash or equity settled as described in more detail in Note 21. For the equity settled part, it is possible that the actual cash cost does not agree with the accounting charges because the share price is not updated at the time of the vesting. The figures in the Group Leadership Team Remuneration table refer to individuals who were executives at the time of settlement.

During the year, the 2015 programme vested in one portion after three years, dependent on Economic Value Added (EVA) for the Stora Enso Group. The number of shares settled on executives (GLT members at settlement date) from previous Restricted Share programmes and Performance Share programmes amounted to 168 179 with a cash value of EUR 2 451 209 before taxes based on the share price of EUR 14.58 on the 1 March 2018 settlement date.

Chief Executive Officer – Karl-Henrik Sundström

The CEO has been employed by Stora Enso since 1 August 2012 and assumed the position as CEO on 1 August 2014. He has a notice period of six months with a severance payment of twelve months salary on termination by the company but with no contractual payments on any change of control. The CEO's benefits include pension provisions. The CEO's pension plan consists of a collectively agreed pension plan in Sweden (ITP2) and a defined contribution (DC) top up pension plan. Contributions to the DC plan in the 20-30 interval Income Base Amounts (IBA; one IBA was 62 500 SEK in 2018) is 23%, contributions above 30 IBA are 35% for the salary the CEO had prior to assuming this position and 39% of the salary increase amount received when assuming the position as CEO. The retirement age is sixty-five years.

Short Term Incentive (STI) programme for CEO

In 2018, the CEO is entitled to an STI programme decided by the Board each year giving a maximum of 75% of the annual fixed salary. The STI for 2017 and 2018 was 70% based on financial measures and 30% on Individual Key Targets.

Long Term Incentive (LTI) programmes for CEO

The CEO participates in 2016, 2017 and 2018 share based LTI programmes. The programmes have three year targets and vest in only one portion after three years. Three quarters (75%) of the opportunity in the 2016-2017 programmes is in Performance Shares, where shares will vest in accordance with performance criteria proposed by the Remuneration Committee and approved by the Board of Directors. One quarter (25%) of the opportunity is in Restricted Shares, for which vesting is only subject to continued employment. In the 2018 programme, the CEO was granted all (100%) of the opportunity in Performance Shares.

The CEO has the potential to receive a value corresponding to a maximum of 65 762 shares before taxes under the 2018 LTI programme. The grant value of EUR 958 481 is based on the share price at the grant date and assuming maximum vesting level during the three-year vesting period is achieved. During the year, the 2015 programme vested in one portion after three years, dependent on Economic Value Added (EVA) for the Stora Enso Group. The actual gross number of shares settled amounted to 59 522 with a cash value of EUR 867 533 before taxes based on the share price EUR 14.58 on the 1 March 2018 settlement date. Total number of shares actually transferred was lower because a portion of shares corresponding to the tax obligation was withheld to cover the income tax.

Group Leadership Team share interests

Executives in Office at the Year End	**R Shares Held[1]**	**Performance Share Opportunity 2018–2020[2]**	**Restricted Share Opportunity 2018–2020[2]**
Johanna Hagelberg	11 258	45 339	9 899
Kati ter Horst	30 318	71 660	15 763
Malin Bendz	17 422	33 686	6 289
Ulrika Lilja	21 534	39 681	8 693
Annica Bresky	0	49 401	8 397
Per Lyrvall[3]	53 245	57 330	12 601
Markus Mannström	32 350	40 803	7 057
Noel Morrin	26 588	48 665	11 095
Gilles van Nieuwenhuyzen	11 308	77 367	17 145
Seppo Parvi	25 585	57 429	12 497
Karl-Henrik Sundström[4]	143 505	185 912	40 050
Jari Suominen	31 553	54 349	11 995
Total, Serving Officers[5]	**404 666**	**761 622**	**161 481**

[1] None of the GLT members holds A shares.
[2] Potential shares to GLT members listed here are gross of taxes
[3] Spouse holds 1 257 of the shares
[4] 41 700 of the shares are held by a related party (Alma Patria AB).
[5] The Company recommends and expects GLT members to hold Stora Enso shares at a value corresponding to at least one annual base salary. Stora Enso shares received as remuneration are therefore recommended not to be sold until this level has been reached.

Note 8 Net financial items

Accounting principles

Net financial items comprise of net interest expenses, foreign exchange gains and losses and other financial income and expenses mainly arising from interest-bearing assets and liabilities.

Financial income and expense

	Year Ended 31 December	
EUR million	**2018**	**2017**
Net Financial Expense in the Income Statement		
Financial income	27	38
Financial expense	-207	-200
Total	**-180**	**-162**
Represented by		
Interest expense		
Interest expense from borrowings measured at amortised cost	-126	-140
Net interest from interest rate derivatives measured at fair value through OCI	-6	-2
Interest expense on finance leases	-1	-1
Interest income on loans and receivables measured at amortised cost	4	3
Net interest on net defined benefit liabilities	-6	-6
Foreign exchange gains and losses		
Currency derivatives	22	24
Borrowings and deposits	-55	10
Other financial income	1	1
Other financial expense		
Bond buybacks	0	-29
Financial fees	-10	-22
Fair valuation losses	-3	0
Total	**-180**	**-162**

Gains and losses on derivative financial instruments are shown in Note 27 Derivatives.

In 2018, the net interest expense on borrowings decreased due to lower average gross debt level and fee amortisations. There were no capitalised borrowing costs in 2018 (EUR nil). Costs on long-term debt issues capitalised as part of non-current debt amounted to EUR 14 (EUR 17) million in the Statement of financial position. During the year EUR 5 (EUR 7) million was amortised through interest expense by using the effective interest rate method.

Exchange gains and losses for currency derivatives mainly relate to non-hedge accounted instruments fair valued in the Income statement.

In 2017 the Group recorded a net expense of EUR 29 million due to repurchases of bond notes with the impact recorded under other financial expense. In addition, the Group recorded a net expense of EUR 10 million under financial fees related to an early loan repayment in 2017. The transactions are explained in more detail in Note 26 Debt.

The amount reported under financial fees in the table above mainly relates to net financial fees for unused committed credit facilities, guarantees and rating agencies.

Note 9 Income taxes

Accounting principles

The Group income tax expense/benefit includes taxes of group companies based on taxable profit/loss for the period, together with tax adjustments for previous periods and the change in deferred income taxes.

Deferred income taxes are provided using the liability method, as measured with enacted, or substantially enacted, tax rates, to reflect the net tax effects of all temporary differences between the tax bases and the accounting bases of assets and liabilities. No deferred tax is recognised for the initial recognition of goodwill and the initial recognition of an asset or liability in a transaction which is not a business combination and at the time of the transaction it affects neither accounting profit nor taxable profit. Deferred tax assets reduce income taxes payable on taxable income in future years. The deferred tax assets, whether arising from temporary differences or from tax losses, are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised.

Tax expense

	Year Ended 31 December	
EUR million	**2018**	**2017**
Current Tax	-166	-123
Deferred Tax	-55	-5
Total Tax	**-221**	**-128**

Income tax rate reconciliation

	Year Ended 31 December	
EUR million	**2018**	**2017**
Profit before tax	1 210	742
Tax at statutory rates applicable to profits in the country concerned[1]	-247	-147
Non-deductible expenses and tax exempt income[2]	13	6
Valuation of deferred tax assets	-17	-22
Taxes from prior years	-23	-6
Changes in tax rates and tax laws	9	5
Impairment of goodwill	0	0
Profits from equity accounted investments	39	18
Other[3]	3	18
Total Tax	**-221**	**-128**
Effective Tax Rate	**18.3%**	**17.3%**
Statutory Tax Rate (blended)	**20.4%**	**19.8%**

[1] Includes a EUR 21 million impact from countries with tax holidays and tax benefits in 2018 and a EUR 9 million impact from tax holidays and other tax benefits in 2017.
[2] The tax value of non-deductible expenses of EUR 26 million has been netted against tax exempt income of EUR 39 million in 2018, and tax value of non-deductible expenses of EUR 17 million has been netted against tax exempt income of EUR 23 million in 2017.
[3] The 2017 figure includes a EUR 19 million release of deferred tax liabilities in relation to subsidiary dividend distribution as the distribution is not probable within the foreseeable future.

The statutory tax rate is a weighted average of the statutory tax rates prevailing in jurisdictions where Stora Enso operates.

Change in deferred taxes in 2018

EUR million	Value at 1 Jan 2018	Income Statement	OCI	Acquisitions/ Disposals	Translation difference	Value at 31 Dec 2018
Fixed assets	-163	-14	0	0	2	-175
Financial instruments	-7	0	6	0	0	-1
Untaxed reserves	-15	-6	0	0	2	-19
Pensions and provisions	46	13	4	0	-1	62
Tax losses and tax credits carried forward	127	-39	0	1	1	90
Other deferred taxes	0	-6	0	0	1	-5
Total	**-12**	**-52**	**10**	**1**	**5**	**-48**
Equity hedges (CTA)		-3	3			
Change in Deferred Tax	**-12**	**-55**	**13**	**1**	**5**	**-48**
Assets[1]	154					120
Liabilities[1]	-166					-168

[1] Deferred tax assets and liabilities have been offset in accordance with IAS 12.

Change in deferred taxes in 2017

EUR million	Value at 1 Jan 2017	Income Statement	OCI	Acquisitions/ Disposals	Translation difference	Value at 31 Dec 2017
Fixed assets	-176	12	0	0	1	-163
Financial instruments	-5	0	-2	0	0	-7
Untaxed reserves	-30	13	0	0	2	-15
Pensions and provisions	46	10	-10	0	0	46
Tax losses and tax credits carried forward	193	-64	0	0	-2	127
Other deferred taxes	-17	16	0	0	1	0
Total	**11**	**-13**	**-12**	**0**	**2**	**-12**
Equity hedges (CTA)		8	-8	0	0	0
Change in Deferred Tax	**11**	**-5**	**-20**	**0**	**2**	**-12**
Assets[1]	214					154
Liabilities[1]	-203					-166

[1] Deferred tax assets and liabilities have been offset in accordance with IAS 12.

The recognition of deferred tax assets is based on the Group's estimations of future taxable profits available against which the group can utilise the benefits.

Tax losses

	As at 31 December					
	Tax losses carried forward		Recognised tax values		Unrecognised tax values	
EUR million	2018	2017	2018	2017	2018	2017
Expiry within five years	703	856	71	118	58	47
Expiry after five years	131	104	5	3	27	22
No expiry	1 030	1 059	13	6	202	234
Total	**1 864**	**2 019**	**89**	**127**	**287**	**303**

Tax losses of EUR 332 (EUR 573) million relate to Finland.

Non-recognised deferred tax assets on deductible temporary differences amounted to EUR 39 (EUR 51) million. There is no expiry date for these differences. Taxable temporary differences in respect of investments in subsidiaries, branches and associates and interests in joint ventures for which deferred tax liabilities have not been recognised amounted to EUR 224 (EUR 214) million.

Note 10 Depreciation, amortisation and impairment charges

Accounting principles

Depreciation, amortisation and impairment charges

Depreciation or amortisation of an asset begins when it is available for use in the location and condition necessary for it to be operated in the manner intended by management. Depreciation or amortisation ceases when the asset is derecognised or classified as held for sale in accordance with IFRS 5. Depreciation or amortisation does not cease when the asset becomes idle. Tangible and intangible assets are depreciated and amortised on a straight-line basis over their useful lives. Useful lives are reviewed periodically. If an asset is disposed of, proceeds exceeding the carrying value of the asset up to its historical cost are netted against depreciation, amortisation and impairment charges. Only disposal proceeds exceeding the historical cost of an asset are presented as other operating income (Note 5). If the asset's book value is higher than the disposal proceeds, the difference is recognised as an impairment in the period when a binding sales contract is signed.

The carrying amounts of intangible assets and property, plant and equipment are reviewed at each reporting date to determine whether there is any indication of impairment, whereas goodwill is tested annually. If any such indication exists, the recoverable amount is estimated as the higher of the fair value less costs of disposal and the value in use, with an impairment loss being recognised whenever the carrying amount exceeds the recoverable amount.

A previously recognised impairment loss on property, plant and equipment is reversed if there has been a change in the estimates used to determine the recoverable amount, however, not to an extent higher than the carrying amount that would have existed had no impairment loss been recognised in prior years. For goodwill, however, a recognised impairment loss is not reversed.

Whilst intangible assets and property, plant and equipment are subject to impairment testing at the cash generating unit (CGU) level, goodwill is subject to impairment testing at the CGU level for groups of CGUs, which represents the lowest level within the group at which goodwill is monitored for internal management purposes.

Depreciation, amortisation and impairment charges

	Year Ended 31 December	
EUR million	**2018**	**2017**
Depreciation and Amortisation		
Intangible assets	23	18
Buildings and structures	78	82
Plant and equipment	368	382
Other tangible assets	10	11
Total	**479**	**493**
Impairment and Disposal Gains/Losses		
Goodwill	0	0
Intangible assets	0	11
Land	0	5
Buildings and structures	0	0
Plant and equipment	1	7
Other tangible assets	0	4
Gain on sale of fixed assets	-4	-2
Loss on sale of fixed assets	4	3
Total	**1**	**28**
Reversal of Impairment		
Intangible assets	0	-3
Buildings and structures	0	0
Plant and equipment	0	-3
Total	**0**	**-6**
Depreciation, Amortisation and Impairment Charges	**479**	**515**

Depreciation and amortisation

The total depreciation and amortisation charge amounted to EUR 479 million and was EUR 14 million less than in 2017. A breakdown of depreciation, amortisation and impairment charges by divisions is set out in Note 3 Segment information.

Disposal gains and losses

There were no material disposal gains or losses relating to fixed assets in 2018 or 2017.

Impairment testing

The recoverable amount for the cash generating units (CGUs) has been determined based on a value-in-use calculation using cash flow projections from financial budgets approved by the Board of Directors and management. The pre-tax discount rates are calculated for each cash generating unit taking into account the tax and risk profile of the country in which the cash flow is generated. The table in the goodwill impairment testing section below sets out the pre-tax discount rates used for goodwill impairment testing, which are similar to those used in the impairment testing of other intangible assets and property, plant and equipment.

Impairments were calculated using a value-in-use method for each CGU based on the following main assumptions:

- Sales price estimates in accordance with internal and external specialist analysis
- Cash flows and discount rates were prepared in real terms
- Current cost structure to remain unchanged
- For goodwill testing a four-year future period was used after which the perpetuity value was based on zero growth rates, whereas for intangible assets, property, plant and equipment testing the period was the remaining expected economic life of the assets.

Other intangible assets and property, plant and equipment impairment

The total impairment charges on other intangible assets and property, plant and equipment in 2018 amounted to EUR 1 (EUR 27) million and resulted mainly from impairment testing.

Newsprint Europe and Wood Free Uncoated CGU's in Paper division were tested for fixed asset impairment reversal in 2018 and the testing did not result in reversal of previous impairments. These CGU's in Paper division were not tested for fixed asset impairment or impairment reversal in 2017.

Goodwill impairment testing

In 2018 or 2017 the Goodwill testing did not result in any impairments.

Groups of cash generating units containing goodwill

	Year Ended 31 December									
	2018					2017				
EUR million	Goodwill at Year End	Intangible Assets and Property, Plant and Equipment at Year End	Recoverable Amount at Year End	Impairment Charge	Pre-tax Discount Rate	Goodwill at Year End	Intangible Assets and Property, Plant and Equipment at Year End	Recoverable Amount at Year End	Impairment Charge	Pre-tax Discount Rate
Packaging Solutions - Europe	19	721	2 726	0	8.2%	19	712	2 117	0	8.8%
Biomaterials - Innovation and Nordic Operations	34	369	2 927	0	6.2%	28	348	1 916	0	6.1%
Wood Products - Central Europe	107	155	1 155	0	5.7%	107	159	937	0	5.4%
Paper - Newsprint and Book Paper	43	238	492	0	5.7%	43	245	528	0	5.4%
Paper - Uncoated Magazine Paper	40	242	477	0	5.7%	40	263	492	0	5.4%
Total	**243**	**1 725**	**7 777**	**0**		**237**	**1 727**	**5 990**	**0**	

Segment impairments and impairment reversals, disposal gains and losses

	Year Ended 31 December	
EUR million	2018	2017
Consumer Board	1	0
Packaging Solutions	-1	3
Biomaterials	1	1
Wood Products	0	0
Paper	2	7
Other	-1	11
Total (impairment/disposal loss +) / (reversal/disposal gain -)	**1**	**22**

The calculation of value-in-use is highly sensitive to discount rates, sales prices and costs. The Sensitivity Analysis table below summarises what effect a 1% change in the discount rate, 1% decrease in sales prices and 1% increase in costs would have had on the recoverable amounts of the groups of CGUs carrying the most of the group's total goodwill.

Goodwill testing sensitivity analysis, impact on recoverable amount

EUR million	Wood Products - Central Europe	Paper - Newsprint and Book	Paper - Uncoated Magazine Paper
1% increase in the discount rate	-216	-61	-77
1% annual decrease in the sales price	-150	-129	-91
1% annual increase in the costs	-134	-122	-84

Note 11 Intangible assets and property, plant and equipment

Accounting principles

Computer software development costs
The cost of development or acquisition of new software clearly associated with an identifiable and unique product that will be controlled by the group and has probable benefit exceeding its cost beyond one year and is recognised as an intangible asset and will be amortised over the expected useful life of the software between 3 to 10 years. Website costs are expensed as incurred.

Goodwill
Goodwill represents future economic benefits arising from assets that are not capable of being individually identified and separately recognised by the group on an acquisition. Goodwill is computed as the excess of the cost of an acquisition over the fair value of the group's share of the fair value of net assets of the acquired subsidiary at the acquisition date, and is allocated to those groups of cash generating units expected to benefit from the acquisition for the purpose of impairment testing. In compliance with IFRS 3, the cost of an acquisition is equal to the sum of the consideration transferred, the value of the non-controlling interest in the acquisition, and the fair value of the previously held interest in the acquired subsidiary. Goodwill arising on the acquisition of non-euro foreign entities is treated as an asset of the foreign entity denominated in the local currency and translated at the closing rate.

Goodwill is not amortised but tested for impairment on an annual basis, or more frequently if there is an indication of impairment. Gains and losses on the disposal of a group entity include any goodwill relating to the entity sold.

Goodwill arising from the acquisition of an equity accounted investment or joint arrangement is included in the carrying amount of the investment and is assessed for impairment as part of that investment. Any excess of the group's share of the net fair value over the cost of the acquisition, after reassessment, is recognised immediately in the income statement.

Intangible assets
Intangible assets are stated at their historical cost and amortised on a straight-line basis over their expected useful lives, which usually varies from 3 to 10 years and up to 20 years for patents. An adjustment is made for any impairment. Intangible items acquired must be recognised as assets separately from goodwill if they meet the definition of an asset, are either separable or arise from contractual or other legal rights, and their fair value can be measured reliably.

Intangible assets recognised separately from goodwill in acquisitions consist of marketing and customer-related or contract and technology-based intangible assets. Typical marketing and customer-related assets include trademarks, trade names, service marks, collective marks, certification marks, customer lists, order or production backlogs, customer contracts and the related customer relationships. The contract and technology-based intangible assets are normally licensing and royalty agreements or patented technology and trade secrets such as confidential formulas, processes or recipes. The fair value determination of customer contracts and related relationships is derived from expected retention rates and cash flow over the customers' remaining estimated lifetime. The value of trademarks is derived from a discounted cash flow analysis using the relief from royalty method.

Property, plant and equipment
Property, plant and equipment acquired by group companies are stated at their historical cost, augmented where appropriate by asset retirement costs. Assets arising on the acquisition of a new subsidiary are stated at fair value at the date of acquisition. Depreciation is computed on a straight-line basis, and adjusted for any impairment and disposal charges. The Consolidated statement of financial position value represents the cost deducted by received grants and subsidies and less the accumulated depreciation and any impairment charges. Interest costs on borrowings to finance the construction of these assets are capitalised as part of the cost during the construction period the requirements are fulfilled.

Land and water areas are not depreciated as these are deemed to have an indefinite life, but otherwise depreciation is based on the following expected useful lives:

Asset Class	Depreciation Years
Buildings, industrial	10–50
Buildings, office & residential	20–50
Groundwood mills	15–20
Hydroelectric power	40
Paper, board and pulp mills, main machines	20
Heavy machinery	10–20
Converting factories	10–15
Sawmills	10–15
Computers	3–5
Vehicles	5
Office equipment	3–5
Railway, harbours	20–25
Forest roads	10–35
Roads, fields, bridges	15–20

Ordinary maintenance and repair charges are written as expensed as incurred, but the costs of significant renewals and improvements are capitalised and depreciated over the remaining useful lives of the related assets. Retirements, sales and disposals of property, plant and equipment are recorded by deducting the cost and accumulated depreciation from the accounting records with any resulting terminal depreciation adjustments reflected in impairment charges in the Consolidated income statement. Capital gains are shown in other operating income.

Spare parts are accounted for as property, plant and equipment if they are major and used over more than one period, or if they are used only in connection with an item of property, plant and equipment. In all other cases, spare parts are carried as part of the inventory and recognised in profit or loss as consumed items.

Intangible assets

EUR million	Year Ended 31 December Computer Software	Other Intangible Assets	Assets in Progress	Goodwill	Total
Acquisition Cost					
At 1 January 2017	228	175	0	1 193	1 596
Translation difference	-2	-9	0	-3	-14
Reclassifications	21	6	0	0	27
Additions	7	13	39	0	59
Disposals[1]	-5	-9	0	0	-14
At 31 December 2017	**249**	**176**	**39**	**1 190**	**1 654**
Translation difference	-1	0	0	-1	-2
Reclassifications	26	-1	-28	0	-3
Additions[2]	13	21	16	5	55
Disposals[1]	-62	-19	0	0	-81
At 31 December 2018	**225**	**177**	**27**	**1 194**	**1 623**
Accumulated Amortisation and Impairment					
At 1 January 2017	200	23	0	955	1 178
Translation difference	-4	0	0	-2	-6
Disposals[1]	-5	-5	0	0	-10
Amortisation	10	8	0	0	18
Impairment	8	0	0	0	8
At 31 December 2017	**209**	**26**	**0**	**953**	**1 188**
Translation difference	-1	-1	0	-2	-4
Disposals[1]	-62	-19	0	0	-81
Amortisation	12	11	0	0	23
At 31 December 2018	**158**	**17**	**0**	**951**	**1 126**
Net Book Value at 31 December 2018	**67**	**160**	**27**	**243**	**497**
Net Book Value at 31 December 2017	**40**	**150**	**39**	**237**	**466**

[1] Company disposals are included in Disposals line. Company disposals are discussed in more detail in Note 4 Acquisitions and disposals.
[2] Company acquisitions are included in Additions line. Company acquistitions are discussed in more detail in Note 4 Acquisitions and disposals.

Property, plant and equipment

EUR million	Year Ended 31 December Land and Water	Buildings and Structures	Plant and Equipment	Other Tangible Assets	Assets in Progress	Total
Acquisition Cost						
At 1 January 2017	395	3 542	13 836	442	314	18 529
Translation difference	-33	-175	-421	-7	-30	-666
Reclassifications	0	5	97	1	-130	-27
Reclassifications to biological assets	0	0	-1	0	0	-1
Additions	1	20	190	3	287	501
Disposals[1]	-2	-43	-355	-11	0	-411
At 31 December 2017	**361**	**3 349**	**13 346**	**428**	**441**	**17 925**
Translation difference	-1	-29	-201	-8	-1	-240
Reclassifications	0	43	207	2	-249	3
Reclassifications to biological assets	0	-1	-2	0	0	-3
Additions	0	19	171	2	249	441
Disposals[1]	-31	-46	-108	-4	0	-189
At 31 December 2018	**329**	**3 335**	**13 413**	**420**	**440**	**17 937**
Accumulated Depreciation and Impairment						
At 1 January 2017	6	2 096	10 445	366	5	12 918
Translation difference	-1	-96	-293	-7	0	-397
Disposals[1]	0	-42	-342	-10	0	-394
Depreciation	0	82	382	11	0	475
Impairment	5	0	4	0	4	13
At 31 December 2017	**10**	**2 040**	**10 196**	**360**	**9**	**12 615**
Translation difference	-1	-32	-177	-6	0	-216
Disposals[1]	-5	-41	-103	-4	0	-153
Depreciation	0	77	368	11	0	456
Impairments and reversals	0	0	1	0	0	1
At 31 December 2018	**4**	**2 044**	**10 285**	**361**	**9**	**12 703**
Net Book Value at 31 December 2018	**325**	**1 291**	**3 128**	**59**	**431**	**5 234**
Net Book Value at 31 December 2017	**351**	**1 309**	**3 150**	**68**	**432**	**5 310**

[1] Company disposals are included in Disposals line. Company disposals are discussed in more detail in Note 4 Acquisitions and disposals.

Intangible assets and property, plant and equipment additions

Total capital expenditure for the year in Stora Enso Oyj and its subsidiaries amounted to EUR 491 (EUR 560) million. Details of ongoing projects and future plans are discussed in more detail in the Report of the Board of Directors.

Note 12 Biological assets

Accounting principles

The biological assets of Stora Enso consist of standing trees to be used as raw material in pulp and mechanical wood production and as bio fuels.

IAS 41 Agriculture standard requires that biological assets are shown in the Consolidated Statement of financial position at fair value. Group forests are thus accounted for at level 3 of fair value less the estimated point-of-sale costs at harvest, there being a presumption that fair values can be measured for these assets.

The valuation of forest assets is based on discounted cash flow models whereby the fair value of the biological assets is calculated using cash flows from continuous operations, that is, based on sustainable forest management plans taking into account growth potential. The yearly harvest from the forecasted tree growth is multiplied by wood prices and the cost of silviculture and harvesting is then deducted. The fair value of the biological assets are measured as the present value of the harvest from one growth cycle based on the productive forestland, taking into consideration environmental restrictions and other reservations. Young standing timber less than two years old (less than three years in Montes del Plata) is considered to be an immature asset and is accounted at cost. At harvesting, biological assets are transferred to inventory.

Fair value is deemed to approximate the cost when little biological transformation has taken place or the impact of the transformation on the price is not expected to be material, which varies according to the location and species of the assets.

Stora Enso also ensures that the Group's share of the valuation of forest holdings in equity accounted investments and joint operations are consistent with Group accounting policies.

The Group has biological assets in its own subsidiaries in China and Laos, as well as in joint operations in Brazil and Uruguay and in equity accounted investments in Finland, Sweden and Brazil.

The value of biological assets disclosed in the group Consolidated statement of financial position from subsidiary companies and from joint operations amounts to EUR 457 (EUR 448) million as shown below. The Group's indirect share of biological assets held by equity accounted investments amounts to EUR 2 871 (EUR 2 906) million.

Biological assets

	Year Ended 31 December	
EUR million	**2018**	**2017**
Subsidiaries and Joint Operations		
Fair Value at 1 January	**448**	**489**
Translation differences	-2	-51
Change in fair value[1]	-2	-6
Additions (cost based)	83	80
Harvesting[1]	-60	-57
Other operative changes[1]	-7	-9
Other changes	-7	0
Reclassification from Property, plant and equipment	2	2
Fair Value of biological assets at 31 December	**457**	**448**
Equity accounted investments		
Bergvik Skog Ab (49.79%)	2 262	2 326
Tornator Oyj (41%)	595	562
Arauco Florestal Arapoti S.A. (20%)	14	18
Fair value of biological assets of Associated companies at 31 December	**2 871**	**2 906**

[1] Items are recorded in profit and loss lines.

Valuation and standing stock of forest assets in main subsidiaries and joint operations

	As at 31 December 2018				
	Fair value, MEUR	**Fair value per hectare, EUR/ha**	**Productive forest land, ha**	**Standing stock, million m³ sub**	**Harvesting, million m³ sub**
Guangxi (100%)	166	2 147	77 300	6.4	1.1
Veracel (50%)	75	1 715	43 700	2.9	1.7
Montes del Plata (50%)	199	2 450	81 200	8.1	1.4

Subsidiaries and joint operations:

At the end of 2018, the fair value of the biological assets in Guangxi, China amounted to EUR 166 (EUR 168) million. The biological assets included young standing timber with a value of EUR 29 (EUR 33) million. The decrease is driven by lower sales prices, which decreased by 4%. The discount rate of 8.7% (8.6%) used in the discounted cash flows (DCF) is determined using the weighted average cost of capital method. The productive land in Guangxi, China totals 77 thousand hectares with standing stock of 6.4 million m³ solid under bark (sub). The annual harvesting is on average 1.1 million m³ sub.

Veracel Celulose S.A. (Veracel), a 50% joint operation company in Brazil, had biological assets fair valued at EUR 150 (EUR 164) million, of which Stora Enso's share was EUR 75 (EUR 82) million. The decrease is driven by foreign exchange movements, the local value increased by 3%. The biological assets included young standing timber with a value of EUR 33 (EUR 31) million. The discount rate of 8.3% (7.3%) used in the DCF is determined using the weighted average cost of capital method. Stora Enso's share (50%) of the land area is 113 (113) thousand hectares.

Stora Enso's 50% share of the productive land in Veracel, Brazil totals 44 thousand hectares with share of standing stock of 2.9 million m³ sub. The ownership share of annual harvesting is on average 1.7 million m³ sub.

Montes del Plata (MdP), a 50% joint operation company in Uruguay, had biological assets with a fair value of EUR 398 (EUR 354) million, of which Stora Enso's share was EUR 199 (EUR 177) million.

The biological assets included young standing timber with a value of EUR 55 (EUR 43) million. The discount rate of 8.0% (8.0%) used in the DCF is determined using the weighted average cost of capital method. Stora Enso's share (50%) of the land area is 126 (123) thousand hectares.

Stora Enso's 50% share of the productive land in Montes del Plata, Uruguay totals 81 thousand hectares with share of standing stock of 8.1 million m^3 sub. The ownership share of annual harvesting is on average 1.4 million m^3 sub.

Sensitivities of significant assumptions of a +/- 10% movement

	Wood market prices	Growth rate
Guangxi	+/-35	+/-19
Veracel	+/-7	+/-7
Montes del Plata	+/-18	+/-18

At 31 December 2018 biological assets by value were located in China 36% (38%), Brazil 16% (20%), Uruguay 44% (39%) and other areas 4% (3%). The land area comes to 325 (363) thousand hectares of which 37% (31%) is leased and 2% (4%) is restricted. The harvested wood amounted to 4 (4) million m^3. The changes were mainly driven by disposal of Rio Grande do Sul. The MdP and Veracel amounts are taken into account in the ownership share and number of hectares.

Equity accounted investments:

The Group has three equity accounted investments holding biological assets:

- Bergvik Skog Ab (Bergvik Skog), a 49.79% (49.28%) owned Swedish associated company, had biological assets with a fair value of EUR 4 543 (EUR 4 719) million, of which Stora Enso's share was EUR 2 262 (EUR 2 326) million. The fair value change of Bergvik is mainly due to foreign exchange movement. Wood sales margin had a slightly increasing effect on the fair value.
- Tornator Oyj (Tornator), a 41% owned Finnish associated company, had biological assets with a fair value of EUR 1 451 (EUR 1 371) million, of which Stora Enso's share was EUR 595 (EUR 562) million. The increase in fair value is mainly due to increased harvesting volume and sales prices. Growing costs had a slight reducing impact on fair value.
- Arauco Florestal Arapoti S.A., the 20% owned Southern Brazilian associated company, had biological assets with a fair value of EUR 73 (EUR 90) million, of which Stora Enso's share was EUR 14 (EUR 18) million.

Valuation and standing stock of forest assets in main subsidiaries and joint operations

	As at 31 December 2018				
	Fair value, MEUR	Fair value per hectare, EUR/ha	Productive forest land, ha	Standing stock, million m^3 sub	Harvesting, million m^3 sub
Bergvik Skog AB (49.79%)	2 262	2 416	936 000	79.3	3.1
Tornator Oyj (41.00%)	595	2 665	223 198	24.6	1.2

Stora Enso's 49.79% share of the productive forest land in Bergvik, Sweden totals 936 thousand hectares with share of standing stock of 79.3 million m^3 solid under bark (sub). The ownership share of annual harvesting is on average 3.1 million m^3 sub.

Stora Enso's 41% share of the productive forest land in Tornator totals 223 thousand hectares with share of standing stock of 24.6 million m^3 sub. The ownership share of annual harvesting is on average 1.2 million m^3 sub.

For information about the amount of wood delivered to Stora Enso mills and share of wood sourced from plantations, please see Stora Enso's Sustainability report 2018, section Forests, plantations and land use.

Note 13 Equity accounted investments

Accounting principles

Consolidation principles

Associated companies over which Stora Enso exercises significant influence are accounted for using the equity method, which involves recognising the Group's share of the equity accounted investment profit or loss for the year in the Consolidated income statement. The Group's interest in an associated company is carried in the Consolidated statement of financial position at an amount that reflects its share of the net assets of the associate.

The Group's share of results in equity accounted investments is reported in operating profit to reflect the operational nature of these investments, especially those in wood supply. There is no material goodwill in the Statements of financial position for equity accounted investments.

Principal equity accounted investments

			As at 31 December			
			Proportion of ownership interest/voting rights held %		EUR million	
Company	Reportable segment	Domicile and principal place of operations	2018	2017	2018	2017
Bergvik Skog AB: forest[1]	Other	Sweden	49.79/36.70	49.28/36.70	1 400	1 287
Tornator Oyj: forest	Other	Finland	41	41	288	267
Arauco Florestal Arapoti S.A.: plantation	Other	Brazil	20	20	19	22
					1 707	1 576
Others					23	24
Carrying Value at 31 December					**1 729**	**1 600**

[1] The group's shareholding in Bergvik Skog AB is 49.79%, however, the voting rights are limited to 36.7%.

Group share of equity accounted investments income statements

	Year Ended 31 December	
EUR million	2018	2017
Sales	249	279
Net operating expenses	-119	-210
IAS 41 valuation	90	33
Operating Profit	**220**	**102**
Net financial items	-37	-28
Net Profit before Tax	**183**	**74**
Income tax	-2	-8
Net Profit for the Year	**181**	**66**

All of the above companies are accounted for using the equity method in the Consolidated financial statements.

The average number of personnel in the equity accounted investments was 1 727 in 2018, compared with 1 698 in 2017.

A summary of the financial information in respect of the Group's material associates, Bergvik Skog AB and Tornator Oyj, is set out below. The Group's share of these associated companies is reported under segment Other and covers the majority of the Group's total share of results of equity accounted investments. The summarised financial information below represents amounts shown in the associate's financial statements prepared in accordance with IFRS.

Bergvik Skog AB

EUR million	2018	2017
Current assets	152	57
Non-current assets	4 705	4 969
Current liabilities	157	403
Non-current liabilities	971	991
Tax liabilities	955	1 034
Sales	245	243
Net profit for the year	295	111
Other comprehensive income	7	8
Total comprehensive income	302	119
Dividends received from the associate during the financial year	11	7
Net assets of the associate	2 774	2 598
Proportion of the Group's ownership interest in Bergvik Skog AB	49.79%	49.28%
Goodwill	19	7
Carrying amount of the Group's interest in Bergvik Skog AB	**1 400**	**1 287**

In November 2018, Stora Enso announced that the shareholders of Bergvik Skog AB have signed a binding agreement regarding restructuring of their ownership in Bergvik Skog. Currently, Bergvik Skog's Swedish forest assets are owned by its subsidiaries Bergvik Väst AB and Bergvik Öst AB, representing approximately 83% and 17% of these assets respectively. With this agreement, Stora Enso will transform its current ownership of 49.8% in Bergvik Skog, to a direct holding of 69.8% of the value of the forest assets in Bergvik Väst. After the transaction, Stora Enso's forest holdings in Sweden will increase to 1.4 million hectares, of which 1.15 million hectares is productive forest land. Stora Enso's 49.8% share of the productive forest land in Bergvik totalled 0.9 million hectares at end of December 2018. The transaction is estimated to increase Stora Enso's balance sheet by approximately EUR 1.0 billion. The restructuring is planned to be completed during the first half of 2019. Bergvik Skog is currently reported as equity accounted investment. As a result of the restructuring, Stora Enso's Swedish forest assets will be placed in a fully owned subsidiary and then consolidated line by line in Stora Enso's results.

Stora Enso's shareholding in the company was valued at EUR 1 400 (EUR 1 287) million at the year-end in 2018. In 2018, the Group's share of Bergvik Skog's net profit was EUR 147 (EUR 55) million, including a forest valuation gain of EUR 80 (gain EUR 26) million.

Tornator Oyj

EUR million	2018	2017
Current assets	34	32
Non-current assets	1557	1478
Current liabilities	376	121
Non-current liabilities	351	586
Tax liabilities	161	151
Sales	113	102
Net profit for the year	79	78
Other comprehensive income	0	-1
Total comprehensive income	79	77
Dividends received from the associate during the financial year	12	11
Net assets of the associate	702	652
Proportion of the Group's ownership interest in Tornator Oyj	41.00%	41.00%
Carrying amount of the Group's interest in Tornator Oyj	**288**	**267**

Stora Enso's Finnish forest holdings were divested into an equity accounted investment, Tornator, in 2002. The Group's current 41% ownership is valued at EUR 288 (EUR 267) million at the year-end for 2018. In 2018, the Group's share of Tornator's net profit was EUR 32 (EUR 32) million, including a forest valuation gain of EUR 13 (gain EUR 8) million.

Aggregate information of equity accounted investments that are not individually materia

	As at 31 December	
EUR million	**2018**	**2017**
PPE1, goodwill and other intangible assets	21	28
Biological assets	14	18
Operative receivables:		
Non-current	0	0
Current	16	16
Inventories	1	1
Cash	8	7
Total Assets	**61**	**70**
Operative Liabilities:		
Non-current	2	4
Current	11	12
Debt:		
Non-current	1	1
Current	0	0
Tax liabilities	4	7
Total Liabilities	**19**	**24**
Net Equity in the Group Statement of Financial Position	42	46
Represented by		
Capital and Reserves	42	45
OCI	0	1
Equity Accounting Value	**42**	**46**
Equity Accounting Value for Bergvik Skog AB	1 400	1 287
Equity Accounting Value for Tornator Oyj	288	267
Total Equity Accounting Value	**1 729**	**1 600**

[1] PPE = Property, Plant and Equipment

Equity accounted investment company balances

	As at 31 December	
EUR million	**2018**	**2017**
Receivables from Equity Accounted Investments		
Non-current loan receivables	2	3
Trade receivables	6	3
Current loan receivables	0	0
Liabilities due to Equity Accounted Investments		
Trade payables	39	40

Equity accounted investment transactions

	Year Ended 31 December	
EUR million	**2018**	**2017**
Sales to equity accounted investments	53	53
Purchases from equity accounted investments	219	215

The Group engages in transactions with equity accounted investments such as sales and purchases of wood. All agreements are negotiated at arm's length and are conducted on terms that the Group considers customary in the industry and generally no less favourable than would be available from independent third parties.

Total loans including interest receivable to equity accounted investments at the year-end 2018 amounted to EUR 2 (EUR 3) million.

Note 14 Equity instruments

Accounting principles

The Group has elected to classify its equity investments in Pohjolan Voima shares and certain listed shares held by the Group, earlier classified as available-for-sale investments (AFS) under IAS 39, at fair value through other comprehensive income (FVTOCI) under IFRS 9 by applying the irrevocable election for equity instruments under the standard. The gains and losses resulting from changes in the fair value of equity investments under FVTOCI are not recycled to the Income Statement upon impairment or disposal, only dividend income is recognised in the Income Statement. In addition, the Group also has certain equity investments in unlisted shares that are classified as fair value through Income statement.

Summary of values

	Year Ended 31 December	
EUR million	**2018**	**2017**
Acquisition cost at 1 January		
Listed shares	4	4
Unlisted shares	126	121
Investments classified as equity instruments (previously available-for-sale)	**130**	**125**
OCI in opening balance	209	170
Equity Instruments at 1 January	**339**	**295**
Translation difference	-1	-1
Additions	3	8
Change in fair values accounted for as OCI	97	39
Disposals	-1	0
Income Statement - gains and losses	-2	-2
Carrying Amount at 31 December	**435**	**339**

Unrealised gains and losses on listed and unlisted shares

	Year Ended 31 December	
EUR million	**2018**	**2017**
Net unrealised holding gains (OCI)	306	209
Cost	129	130
Fair Value	**435**	**339**
Net unrealised holding gains (OCI)	306	209
Deferred tax	-2	-4
Net Unrealised Holding Gains Shown in Equity as OCI	**304**	**205**
Change in Net Unrealised Holding Gains Shown in Equity as OCI	**98**	**43**

PVO shares

The Group holds a 15.6% (15.6%) interest in Pohjolan Voima Oy (PVO), a privately-owned group of companies in the energy sector that produces electricity and heat for its shareholders in Finland. Each subsidiary of the PVO group has its own class of shares that entitle the shareholder to the energy produced in proportion to its ownership of that class of share. The shareholders then have an obligation to cover the costs of production, which are generally lower than market prices. The holding is fair valued quarterly using an average of two methods: the discounted cash flow model and trading multiples. The valuation is categorised at level 3 in the fair value hierarchy according to IFRS 13, levels are explained in Note 25 Fair values.

The electricity prices in the model are based on Nordpool prices. Liquid future derivative prices are used for the available years in the model and thereafter increased by an inflation factor. The historical financial statements provide the basis for the cost structure for each of the power assets, which are adjusted by the inflation factor in future years. The discount rate of 4.06% used in the DCF is determined using the weighted average cost of capital method. The trading multiples are derived from a peer group of European companies operating power assets similar to PVO's. A +/- 5% change in the electricity price used in the DCF would change the valuation by EUR +54 million and EUR -41 million, respectively. A +/- 1% absolute change in the discount rate would change the valuation by EUR -34 million and EUR +100 million, respectively.

As an outcome of the arbitration proceedings, a settlement agreement was signed during 2018 between the plant owner Teollisuuden Voima Oyj (TVO) and the plant supplier AREVA-Siemens Consortium concerning the costs and losses caused by the delay of the Olkiluoto 3 project. As a result, the plant supplier agreed to compensate EUR 450 million to the plant owner TVO. The supplier is entitled to receive an incentive payment, in a maximum amount of EUR 150 million, upon timely completion of the Olkiluoto 3 project. In November 2018 TVO announced that the regular electricity production will start in January 2020 based on the updated start-up schedule. The arbitration proceeding outcome has been taken into account in the valuation. Stora Enso's indirect share of the capacity of Olkiluoto 3 is approximately 8.9%, through its PVO B2 shares.

PVO shareholding at 31 December 2018

EUR million	Share Series	% Holding	Asset Category	Fair Value 2018	Fair Value 2017
PVO-Vesivoima Oy	A	20.6	Hydro	166	155
Teollisuuden Voima Oyj	B	15.7	Nuclear	243	148
Teollisuuden Voima Oyj	B2	14.8	Nuclear under construction	0	0
Other	C,C2,V,M	Various	Various	6	5
Total				**415**	**308**

The valuation in 2018 amounted to EUR 415 (EUR 308) million against cost value of EUR 118 (EUR 116) million, with the revaluation of EUR 297 (EUR 192) million being taken to other comprehensive income. The change in PVO's value is mainly caused by increase in electricity market prices. No deferred tax is appropriate as under Finnish tax regulations holdings above 10% are exempt from tax on disposal proceeds.

Principal equity instruments

	31 December 2018			
EUR million	**Holding %**	**Number of Shares**	**Acquisition Cost**	**Fair Value**
Packages Ltd, Pakistan - listed shares		5 396 650	4	13
Total Listed Shares			**4**	**13**
Pohjolan Voima Oy - unlisted shares	15.6	5 073 972	118	415
Others - unlisted shares			7	7
Total Unlisted Shares			**125**	**422**
Total Equity instruments at 31 December 2018			**129**	**435**
Total Available-for-sale Investments at 31 December 2017			**130**	**339**

The difference of EUR 306 (EUR 209) million between the initial acquisition cost and reporting date fair value of the equity instruments (previously available-for-sale investments) represents the OCI reserve as shown in the Statement of changes in equity.

Note 15 Other non-current assets

	As at 31 December	
EUR million	**2018**	**2017**
Prepaid expenses and accrued income	19	18
Tax credit	16	17
Other non-current operative assets	13	15
Total	**48**	**50**

Note 16 Inventories

Accounting principles

Inventories are reported at lower of cost and net realisable value with the cost determined by the first-in first-out (FIFO) method or, alternatively, by the weighted average cost where it approximates FIFO. The cost of finished goods and work in progress comprises raw material, direct labour, depreciation, other direct costs and related production overheads but excludes interest expenses. Net realisable value is the estimated selling price in the ordinary course of business, less the costs of completion and sale.

Where market conditions result in the manufacturing costs of a product exceeding its net realisable value, a valuation allowance is made. Valuation allowances are also made for old, slow moving and obsolete finished goods and spare parts. Such valuation allowances are deducted from the carrying value of the inventories in the consolidated statement of financial position.

	As at 31 December	
EUR million	**2018**	**2017**
Materials and supplies	438	308
Work in progress	98	81
Finished goods	752	649
Spare parts and consumables	298	279
Other inventories	17	15
Advance payments and cutting rights	83	97
Obsolescence allowance - spare parts and consumables	-98	-94
Obsolescence allowance - finished goods	-15	-10
Net realisable value allowance	-5	-4
Total	**1 567**	**1 321**

EUR 4 872 (EUR 4 675) million of inventories have been expensed during the year, which are included in materials and supplies line and relate to materials. EUR 16 (EUR 15) million of inventory write-downs have been recognised as an expense. EUR 3 (EUR 18) million have been recognised as a reversal of previous write-downs.

Note 17 Operative receivables

Accounting principles

Trade receivables
Trade receivables are recognised initially at fair value and subsequently at their anticipated realisable value with an estimate made for loss allowance on expected credit losses based on a forward-looking and objective review of all outstanding amounts at period end. Simplified approach under IFRS 9 has been implemented for trade receivables and loss allowances are recognised based on expected lifetime credit losses in the Consolidated income statement within other operating expenses. For non-defaulted receivables, expected credit losses are estimated based on externally generated customer level probability of default data that is used in the forward-looking loss allowance calculation model. The rebuttable presumption that default does not occur later than when a financial asset is 90 days past due has been applied in the calculation model and default is normally estimated to happen when trade receivables are at least 90 days overdue or there is otherwise objective evidence supporting the conclusion that default has occurred. Trade receivables are presented in current assets under Operative receivables in the Consolidated statement of financial position.

Stora Enso uses factoring arrangements as one of the working capital management tools. Sold trade receivables are derecognised once significant related risks and rewards of ownership have been transferred to the buyer. Outstanding balances for trade receivables that were not yet sold at period end but qualify to be sold under factoring programs in the next period, are classified as trade receivables fair valued through other comprehensive income in accordance with business model and contractual cash flow characteristics tests under IFRS 9. Please refer to Note 25 Fair values for further details.

Current operative receivables

	As at 31 December	
EUR million	**2018**	**2017**
Trade receivables - gross carrying amount	1 172	993
Loss allowance	-36	-28
Prepaid expenses and accrued income	96	119
Other receivables	254	235
Total	**1 487**	**1 319**

Age analysis of trade receivables

	As at 31 December	
EUR million	**2018**	**2017**
Not overdue	1 027	844
Less than 30 days overdue	77	61
31 to 60 days overdue	7	41
61 to 90 days overdue	2	1
91 to 180 days overdue	4	2
Over 180 days overdue	55	44
Total	**1 172**	**993**

As at 31 December 2018, a gross amount of EUR 145 (EUR 149) million of trade receivables were overdue. These relate to a number of countries and unrelated customers that have no recent history of default. At 31 December 2018 lifetime expected credit losses for trade receivables amounted to EUR 36 million. At 31 December 2017 allowances related to overdue trade receivables calculated in accordance with IAS 39 totalled EUR 28 million. The age analysis of the loss allowance recognised is shown in the table below.

Age analysis of loss allowance

	As at 31 December	
EUR million	**2018**	**2017**
Not overdue and less than 90 days overdue	3	0
More than 90 days overdue	33	28
Total	**36**	**28**

Reconciliation of loss allowance

	As at 31 December	
EUR million	**2018**	**2017**
Opening balance at 1 January	28	51
Adoption of IFRS 9 standard	3	0
Change in loss allowance booked through Income Statement	8	-7
Write-downs	-3	-15
Other	0	-1
Closing Balance at 31 December	**36**	**28**

The actual credit losses during 2018 amounted to EUR 3 (EUR 15) million. Loss allowances for trade receivables are estimated on an individual basis based on a forward-looking model where estimated

probabilities of default for customers are used in the model. If the Group has concerns regarding the financial status of a customer, an advance payment or an irrevocable letter of credit drawn from a bank is required. At the year end, the letters of credit awaiting maturity totalled EUR 62 (EUR 17) million. Please refer to Note 24 Financial risk management for details of customer credit risk management.

Stora Enso has entered into factoring agreements to sell trade receivables in order to accelerate cash conversion. These agreements resulted in full derecognition of receivables of a nominal value of EUR 240 (EUR 355) million by the end of the year. The continuing involvement of Stora Enso in the sold receivables was estimated as being insignificant.

Note 18 Shareholders' equity

Accounting principles

Dividend and capital repayments
Any dividend or capital repayment proposed by the Board is not deducted from distributable shareholders' equity until approved by the shareholders at the Annual General Meeting.

At 31 December 2018 shareholders' equity amounted to EUR 6 714 (EUR 6 008) million, compared to the market capitalisation on Nasdaq Helsinki of EUR 8 123 (EUR 10 422) million. The market values of the shares were EUR 11.05 (EUR 13.20) for A shares and EUR 10.09 (EUR 13.22) for R shares.

The A shares entitle the holder to one vote per share, whereas R shares entitle the holder to one vote per ten shares with a minimum of one vote, though the accountable par of both shares is the same. A shares may be converted into R shares at any time at the request of a shareholder. At 31 December 2018 the company's fully paid-up share capital as entered in the Finnish Trade Register was EUR 1 342 million (EUR 1 342 million). The current accountable par of each issued share is EUR 1.70 (EUR 1.70).

At 31 December 2018, Directors and Group Leadership Team members owned 1 150 (1 150) A shares and 558 028 (458 526) R shares representing 0.02% of the total voting rights of the company. Full details of Director and Executive interests are shown in Note 7 Board and executive remuneration. A full description of company share award programmes is shown in Note 21 Employee variable compensation and equity incentive schemes. However, none of these have any impact on the issued share capital.

Change in share capital and number of shares

	A shares	R shares	Total
At 1 January 2017	**176 507 090**	**612 112 897**	**788 619 987**
Conversion of A shares to R shares 15 Feb	-20	20	-
Conversion of A shares to R shares 15 May	-750	750	-
Conversion of A shares to R shares 15 Aug	-40 000	40 000	-
Conversion of A shares to R shares 14 Sep	-20 000	20 000	-
Conversion of A shares to R shares 16 Oct	-34 000	34 000	-
Conversion of A shares to R shares 14 Dec	-20 000	20 000	-
At 31 December 2017	**176 392 320**	**612 227 667**	**788 619 987**
Conversion of A shares to R shares 16 Jan	-40 710	40 710	-
Conversion of A shares to R shares 8 Feb	-400	400	-
Conversion of A shares to R shares 16 Apr	-10 418	10 418	-
Conversion of A shares to R shares 15 May	-300	300	-
Conversion of A shares to R shares 15 Jun	-250	250	-
Conversion of A shares to R shares 16 Jul	-13 070	13 070	-
Conversion of A shares to R shares 14 Sep	-125	125	-
Conversion of A shares to R shares 15 Oct	-55	55	-
Conversion of A shares to R shares 14 Dec	-14 320	14 320	-
At 31 December 2018	**176 312 672**	**612 307 315**	**788 619 987**
Number of votes as at 31 December 2018	**176 312 672**	**61 230 731**[1]	**237 543 403**
Share Capital at 31 December 2018, EUR million	**300**	**1 042**	**1 342**
Share Capital at 31 December 2017, EUR million	**300**	**1 042**	**1 342**

[1] R share votes are calculated by dividing the number of R shares by 10.
The issued shares by 4 March 2019 will represent the total shares eligible to vote at the forthcoming Annual General Meeting.

Note 19 Non-controlling interests

Accounting principles

Non-controlling interests are presented within the equity of the Group in the Consolidated statement of financial position. The proportionate shares of profit or loss attributable to non-controlling interests and to equity holders of the parent company are presented in the Consolidated income statement after the profit for the period. Transactions between non-controlling interests and Group shareholders are transactions within equity and are thus shown in the Statement of changes in equity. The measurement type of non-controlling interests is decided separately for each acquisition.

Non-controlling interests

	Year Ended 31 December	
EUR million	**2018**	**2017**
At 1 January	47	62
Acquisitions	-2	0
Disposals	-1	0
NCI buy-out	2	0
Share of profit for the period	-24	-11
Share of other comprehensive income	-2	-3
Dividends	-2	-1
At 31 December	**18**	**47**

Principal non-controlling interests

		As at 31 December		
		2018	**2018**	**2017**
Company	**Principal Place of Business**	**Proportion of Ownership Interests Held by Non-controlling Interests, %**	**EUR million**	
Stora Enso Pulp and Paper Asia AB Group[1]	Sweden and China	See separate table below	11	37
Stora Enso Inpac Packaging Group	China	10.00	8	10
Stora Enso Huatai Paper Co Ltd	China	40.00	-7	-5
Others	-		5	5
			18	**47**

[1] Consist of non-controlling interests in Guangxi Integrated Project and Operations

Non-controlling interests in Stora Enso Pulp and Paper Asia AB Group

		31 December 2018			31 December 2017		
Company	**Principal Place of Business**	**Direct-% of NCI**	**Indirect-% of NCI**	**Total-% of NCI**	**Direct-% of NCI**	**Indirect-% of NCI**	**Total-% of NCI**
Stora Enso Pulp and Paper Asia AB	Sweden and China	5.79	0.00	5.79	5.79	0.00	5.79
Guangxi Stora Enso Forestry Co Ltd	China	5.00	5.50	10.50	5.00	5.50	10.50
Stora Enso (Guangxi) Packaging Company Ltd	China	15.00	4.92	19.92	15.00	4.92	19.92
Stora Enso (Guangxi) Forestry Company Ltd	China	15.00	4.92	19.92	15.00	4.92	19.92

In 2018 non-controlling interest in Stora Enso decreased by EUR 29 million primarily due to negative result in Stora Enso Pulp and Paper Asia AB Group. Net loss in Stora Enso Pulp and Paper Asia AB Group was EUR 128 (EUR 75) million. Net result decreased by EUR 53 million compared to last year mainly due losses on revaluation of foreign currency debt and increased interest expenses.

Summarised financial information in respect of the subsidiaries that have material non-controlling interests is set out below.

Stora Enso Pulp and Paper Asia AB Group

EUR million	**2018**	**2017**
Assets	1 127	1 155
Shareholders' equity attributable to the owners of the parent	18	131
Non-controlling interests[1]	11	37
Total Equity	**29**	**168**
Liabilities	1 097	987
Net loss for the year	-128	-75
Attributable to:		
Owners of the parent	-104	-61
Non-controlling interests	-24	-14
Net Loss for the Year	**-128**	**-75**
Net cash outflow from operating activities	-28	-61
Net cash outflow from investing activities	-61	-81
Net cash inflow from financing activities	62	140
Net Cash Outflow/Inflow	**-27**	**-2**

[1] No dividends were paid to non-controlling interests in 2018 or 2017.

Note 20 Post-employment benefits

Accounting principles

Employee benefits
The Group operates a number of defined benefit and contribution plans throughout the world, the assets of which are generally held in separate trustee administered funds. Such pension and post-retirement plans are generally funded by payments from employees and by the relevant group companies, taking into account the recommendations of independent qualified actuaries. Employer contributions to the defined contribution pension plans are charged to the Consolidated income statement in the year they relate to.

For defined benefit plans, accounting values are assessed using the projected unit credit method. Under this method, the cost of providing pensions is charged to the Consolidated Income Statement to spread the regular cost over the service lives of employees in accordance with the advice of qualified actuaries who carry out a full valuation of the plan every year in all major pension countries. The pension obligation is measured as the present value of the estimated future cash outflows using interest rates of highly rated corporate bonds or government securities, as appropriate, that match the currency and expected duration of the related liability.

The Group immediately recognises all actuarial gains and losses arising from defined benefit plans directly in equity, as disclosed in its Consolidated Statement of Comprehensive Income. Past service costs are identified at the time of any amendments to the plans and are recognised immediately in the Consolidated income statement regardless of vesting requirements. In the group's Consolidated statement of financial position, the full liability for all plan deficits is recorded.

The Group has established a number of pension and other benefit plans for its operations throughout the world, the cost amounted to EUR 170 (EUR 166) million in 2018, as shown in Note 6 Personnel expenses. The majority of the plans are defined contribution schemes and the charge amounted to EUR 160 (EUR 154) million.

In accordance with their respective pension arrangements, Group Leadership Team members may retire at 65 years of age with pensions consistent with local practices in their respective home countries. The retirement age for other management teams in companies in the Stora Enso Group follows local law and practices, though some management team members have older agreements with the right to retire earlier, between 60 and 65 years. The retirement age for other staff either follows national retirement ages or is determined by local labour agreements. In the latter case, there may be certain pre-retirement liabilities accruing to the company to cover the income of the early retirees between the age at which they ceased working and the national retirement age.

Stora Enso's total defined benefit obligations for current and former members of staff amount to EUR 1 115 (EUR 1 139) million, though assets of EUR 714 (EUR 762) million have been put aside in various pension schemes to cover these liabilities. The net funding position of the defined benefit plans is shown in full in the Statement of Financial Position and amounted to EUR 401 million in 2018, an increase of EUR 24 million on the previous year's liability of EUR 377 million. This increase is mainly caused by the actuarial losses which result from the change in financial assumptions regarding present value of the defined benefit obligations. Interest costs are entered under financial costs. The 2018 defined benefit expense in the Income Statement amounts to EUR 16 million and the actuarial losses recorded in other comprehensive income amount to EUR 24 million. The 2017 defined benefit expense in the Income Statement amounted to EUR 19 million and the actuarial gains recorded in other comprehensive income amounted to EUR 61 million.

Actuarial gains/losses recognised directly in equity

	Year Ended 31 December	
	Total Operations	
EUR million	2018	2017
Actuarial gains/losses	-24	61
Deferred tax thereon	4	-10
Total	**-20**	**51**

Group policy for funding deficits is intended to satisfy local statutory funding requirements for tax deductible contributions together with adjusting the discount factors used in the actuarial calculations for market rates. However, the emphasis of the Group is to provide defined contribution schemes for its post-employment benefits, thus all aspects of the provision and accounting for defined benefit schemes are evaluated. The net liability in the Group Statement of financial position reflects the actual deficits in the defined benefit plans. Details of the pension arrangements, assets and investment policies in the Group's main operating countries are shown below.

Finland

The Group funds its Finnish pension obligations mainly through defined contribution schemes, the charge in the Income Statement being EUR 73 (EUR 72) million. By contrast, the remaining obligations covered by defined benefit schemes resulted in a charge of EUR 1 (EUR 1) million excluding finance costs. Pension cover since 2001 has been organised entirely through local insurance companies. The total defined benefit obligation amounts to EUR 302 (EUR 318) million and the assets to EUR 278 (EUR 294) million, leaving a net liability of EUR 25 (EUR 24) million. As state pensions in Finland provide by far the greatest proportion of pensions, Group liabilities are proportionately much smaller than in comparable countries.

Plan assets in Finland are managed by insurance companies. Details of the exact structure and investment strategy surrounding plan assets are not available to participating employers as the assets actually belong to the insurance companies themselves. The assets are managed in accordance with EU regulations, and also national requirements, under which there is an obligation to pay guaranteed benefits irrespective of market conditions.

Germany

German pension costs amounted to EUR 8 (EUR 7) million, of which EUR 7 (EUR 6) million related to defined contribution schemes and EUR 1 (EUR 1) million to defined benefits excluding finance costs. The total defined benefit obligation is EUR 245 (EUR 258) million, nearly all of which is unfunded as total assets come to only EUR 7 (EUR 7) million. The net liability decreased from EUR 251 million to EUR 238 million. The decrease in net liability arose mainly from an increase in the discount rate and changes in experience. Defined benefit pension plans are mainly accounted for in the Statement of financial position through book reserves with some minor plans using insurance companies or independent trustees. Retirement benefits are based on years worked and salaries received during the pensionable service and the commencement of pension payments are linked to the national pension scheme's retirement age. Pensions are paid directly by the companies themselves to their former employees, the security for the pensioners is provided by the legal requirement that the book reserves held in the Statement of financial position are insured up to certain limits.

Sweden

In Sweden, most blue-collar workers are covered by defined contribution schemes, the charge in the Income statement being EUR 56 (EUR 56) million, with defined benefit schemes covering mainly white-collar staff.

Total defined benefit obligations amounted to EUR 370 (EUR 352) million and the assets came to EUR 278 (EUR 298) million, leaving a net liability of EUR 92 million at the year end, compared with a net liability of EUR 54 million the year before. This increase in net liability arose from a decrease in the discount

rate and changes in financial assumptions and experience. Stora Enso has undertaken to pay all local legal pension liabilities for the main ITP scheme to the foundation, thus the remaining liability relates to other small schemes.

The long-term investment return target for the foundation is a 3% real return after tax. Stora Enso's Swedish pension fund conducts an annual asset/liability study to optimise its risk parameters.

Other countries

Total defined benefit obligations in the remaining countries amounted to EUR 198 (EUR 211) million and the assets to EUR 151 (EUR 163) million. The net liability came to EUR 46 (EUR 48) million. Obligations and assets were material only in the United Kingdom, at EUR 132 (EUR 145) million and EUR 121 (EUR 129) million, respectively, leaving a net liability of EUR 11 (EUR 16) million at the end of 2018. The reduction in net liability arose from changes in actuarial assumptions.

Group

Net defined benefit obligation reconciliation

	Year Ended 31 December	
EUR million	**2018**	**2017**
Present Value of Defined Benefit Obligation		
Defined benefit obligation at 1 January	1 139	1 223
Translation difference	-15	-17
Interest on liabilities	21	20
Current service cost	11	13
Past service cost	-2	0
Actuarial gains and losses on defined benefit obligation arising from changes in demographic assumptions	-3	-3
Actuarial gains and losses on defined benefit obligation arising from changes in financial assumptions	27	-10
Actuarial gains and losses on defined benefit obligation arising from experience adjustments	2	-24
Benefit payments	-61	-63
Net disposals/acquisitions	-1	-1
Other	-2	1
Defined benefit obligation at 31 December	**1 115**	**1 139**
Fair Value of Plan Asset		
Fair value of plan asset at 1 January	-762	-787
Translation difference	13	13
Expected return on plan assets	-15	-14
Actuarial gain/loss on plan assets	-1	-24
Employer contributions	3	3
Benefit payments	45	47
Other	3	0
Fair value of plan asset at 31 December	**-714**	**-762**
Net Defined Benefit Obligation	**401**	**377**

Amounts Recognised on the Statement of Financial Position – Defined Benefit Plans

	As at 31 December					
	Total Defined Benefit Plans		**Defined Benefit Pension Plans**		**Other Post-Employment Benefits**	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Present value of funded obligations	841	851	841	851	0	0
Present value of unfunded obligations	274	288	249	264	25	24
Defined benefit obligations (DBO)	**1 115**	**1 139**	**1 090**	**1 115**	**25**	**24**
Fair value of plan assets	714	762	714	762	0	0
Net Liability in Defined Benefit Plans	**401**	**377**	**376**	**353**	**25**	**24**

Amounts Recognised in the Income Statement

	Year Ended 31 December					
	Total Defined Benefit Plans		**Defined Benefit Pension Plans**		**Other Post-Employment Benefits**	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Operating costs						
Current service cost	11	13	10	12	1	1
Past service cost	-1	0	-1	0	0	0
Finance cost						
Net interest on net defined benefit liability	6	6	6	6	0	0
Cost recognised in Income Statement	**16**	**19**	**15**	**18**	**1**	**1**

Statement of Actuarial Gains and Losses

	Year Ended 31 December	
EUR million	**2018**	**2017**
Gain/loss on pension scheme assets	1	24
Gain/loss arising on pension scheme liabilities	-25	37
Total Gain/loss	**-24**	**61**

Defined Benefit Plans: Country Assumptions Used in Calculating Benefit Obligations

	Year Ended 31 December					
	Finland		**Germany**		**Sweden**	
	2018	**2017**	**2018**	**2017**	**2018**	**2017**
Discount rate %	1.2	1.4	1.6	1.5	2.3	2.5
Future salary increase %	2.7	2.5	2.5	2.5	2.9	2.7
Future pension increase %	1.8	1.8	1.8	1.8	2.0	1.8
Average current retirement age	64.0	64.0	63.0	63.0	65.0	65.0
Weighted average life expectancy	87.0	87.0	87.0	86.0	89.3	89.3

Sensitivity of the Defined Benefit Pension Obligation

	Impact on Defined Benefit Obligation		
	Change in assumption	**Increase in assumption**	**Decrease in assumption**
Discount rate	0.50%	Decrease by 6.8%	Increase by 7.6%
Salary growth rate	0.50%	Increase by 1.7%	Decrease by 1.5%
Pension growth rate	0.50%	Increase by 5.7%	Decrease by 5.3%

	Increase by 1 year in assumption	**Decrease by 1 year in assumption**
Life expectancy	Increase by 3.6%	Decrease by 3.6%

Interest rate risk: The obligations are assessed using market rates of high-quality corporate or government bonds to discount the obligations and are therefore subject to any volatility in the movement of the market rate. The net interest income or expense recognised in profit and loss are also calculated using the market rate of interest.

Mortality risk: In the event that members live longer than assumed, the obligations may be understated originally and a deficit may emerge if funding has not adequately provided for the increased life expectancy.

Duration of Pension Plans

Years	**Finland**	**Sweden**	**Germany**	**UK**
At 31 December 2017	10.0	15.5	12.9	17.2
At 31 December 2018	10.0	16.0	12.6	15.8

Defined Benefit Plan Summary by Country as at 31 December 2018

	As at 31 December 2018				
EUR million	**Finland**	**Germany**	**Sweden**	**Other**	**Total**
Present value of funded obligations	302	20	349	170	841
Present value of unfunded obligations	0	225	21	28	274
Defined benefit obligations (DBO)	302	245	370	198	1 115
Fair value of plan assets	278	7	278	151	714
Net liability in the defined benefit plans	25	238	92	46	401
Net Liability in the Balance Sheet	**25**	**238**	**92**	**46**	**401**
Represented by					
Defined benefit pension plans	25	238	92	21	376
Other post-employment benefits				25	25
Net Liability in the Balance Sheet	**25**	**238**	**92**	**46**	**401**

Defined Benefit Plan Summary by Country as at 31 December 2017

	As at 31 December 2017				
EUR million	**Finland**	**Germany**	**Sweden**	**Other**	**Total**
Present value of funded obligations	318	18	331	184	851
Present value of unfunded obligations	0	240	21	27	288
Defined benefit obligations (DBO)	318	258	352	211	1 139
Fair value of plan assets	294	7	298	163	762
Net liability in the defined benefit plans	24	251	54	48	377
Net Liability in the Balance Sheet	**24**	**251**	**54**	**48**	**377**
Represented by					
Defined benefit pension plans	24	251	54	24	353
Other post-employment benefits	0	0	0	24	24
Net Liability in the Balance Sheet	**24**	**251**	**54**	**48**	**377**

Plan Assets

	As at 31 December			
	2018		**2017**	
EUR million	**Value**	**%**	**Value**	**%**
Equity	237	33.2	261	34.2
Government bonds	49	6.8	40	5.3
Corporate bonds	199	27.9	211	27.7
Debt	248	34.7	251	33.0
Property	71	10.0	66	8.6
Cash	39	5.4	38	5.0
Others	119	16.7	146	19.2
Total Pension Fund Assets	**714**	**100.0**	**762**	**100.0**

Plan assets do not include any real estate or other assets occupied by the group or the Company's own financial instruments. The breakdown of Finnish pension assets EUR 278 (294) million is not disclosed separately as actual asset allocations can only be estimated based on known target values published by the insurance companies concerned.

The two main financial factors affecting group pension liabilities are changes in interest rates and inflation expectations, so the aim of asset investment allocations is to neutralise these effects and maximise returns.

In 2019 contributions of EUR 21 million are expected to be paid.

In 2018 reimbursements of EUR 3 (EUR 3) million were paid.

Note 21 Employee variable compensation and equity incentive schemes

Accounting principles

Share awards

The costs of all employee-related share-based payments are charged to the Consolidated Income Statement as personnel expenses over the vesting period. The share programmes may be hedged using Total Return Swaps (TRS) which are settled with cash payments, allowing the company to receive cash compensation to partially offset any change in the share price between the grant and settlement dates. Group TRS instruments do not qualify for hedge accounting and therefore periodic changes to their fair value are recorded in the Income statement in operative costs alongside the share-based programme costs to which they relate.

As a result of IFRS 2 amendment: Classification and Measurement of Share-based Payment Transactions, effective from 1 January 2018, all share-based payment transactions are classified as equity-settled share awards. Please refer to the Note 1 Accounting principles for further details. The equity-settled share awards (net of tax), are measured at the fair value of the equity instruments on the grant date, and are adjusted for the present value of expected dividends. The fair value of the equity-settled share-based payments determined on the grant date is expensed on a straight-line basis over the vesting period, based on the estimate of equity instruments that will eventually vest, with a corresponding increase in equity.

In 2017, prior the above mentioned change, the fair value of employee services received in exchange for share awards were accounted for in a manner that was consistent with the method of settlement. The group withheld an amount from an employee's compensation to satisfy the employee's tax liability incurred as a result of the transaction. This was done by reducing the number of shares issued to the employee. This tax-related amount was accounted for as a cash-settled share-based compensation. The number of shares delivered to the employee was accounted for as an equity-settled transaction. The resulting cash-settled liability related to the expected tax to be paid was remeasured at each reporting date at its fair value using estimates of the number of share awards that were expected to be issued and the latest fair valuations by using the Stora Enso R share year-end closing price, adjusted for the present value of expected dividends, with all changes recognised immediately in the Income Statement.

Short Term Incentive (STI) programmes

Salaries for senior management are negotiated individually. Stora Enso has incentive plans that take into account the performance, development and results of both business units and individual employees. This performance-based variable compensation system is based on profitability as well as on attaining key business targets.

Group Executives, as well as division and business unit management have STI programmes in which the payment is calculated as a percentage of the annual base salary with a maximum level ranging from 8% to 75%. Non-management employees participate in an STI programme with a maximum incentive level of 7%. All incentives are discretionary. These performance-based programmes cover most employees globally, where allowed by local practice and regulations. For the performance years 2017 and 2018, the annual incentive programmes were based on financial targets as well as individually set key targets. The financial success metrics in the STI programme are: Operational EBITDA and Operative Working Capital to sales.

Long Term Incentive (LTI) programmes

Since 2005, new share based programmes for executives have been launched every year. The 2015 programme that vested in 2018 as well as the current outstanding programmes including the programme that was launched during 2018 have three year targets and vest in one portion after three years.

Three quarters (75%) of the opportunity under the 2015 to 2017 programmes are in Performance Shares, where shares will vest in accordance with performance criteria proposed by the Remuneration Committee and approved by the Board of Directors. The financial success metric is 3-year Economic Value Added (EVA) for the Stora Enso Group. One quarter (25%) of the opportunity under the programmes are in Restricted Shares, for which vesting is only subject to continued employment.

This year, the 2018 LTI programme was changed for members of the GLT in the way that all (100%) of the opportunity was granted in Performance Shares. The financial success metrics in the 2018 Performance Share Plan are 3-year Economic Value Added (EVA) and Earnings Per Share (EPS) for the Stora Enso Group. Others than the GLT were granted three quarters (75%) of the opportunity in Performance Shares and one quarter (25%) of the opportunity in Restricted Shares, as in previous years.

Outstanding restricted and performance share opportunities before taxes are shown in the table below. Total number of shares actually transferred will be less than below because a portion of shares corresponding to employees tax obligation will be withheld to cover the income tax.

Share awards at 31 December 2018

	Estimated Delivery of Outstanding Restricted and Performance Share Awards at Year End			
Number of shares	**2019**	**2020**	**2021**	**Total**
2016 programme	967 733			967 733
2017 programme		1 091 559		1 091 559
2018 programme			856 377	856 377
Total	**967 733**	**1 091 559**	**856 377**	**2 915 669**

The costs of the Stora Enso Share-based Programmes are recognised as costs over the vesting period, which is the period between the grant and vesting. The total impact of share-based programmes in the Income statement amounted to an expense of EUR 7 (EUR 10) million, all related to restricted and performance share awards. There were no Total Return Swaps (TRS) in use at the end of 2018.

Note 22 Other provisions

Accounting principles

Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, and it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount of the obligation can be made. Provisions for dismantling, removal or site restoration are measured at management's best estimate. The expenditure required to settle the obligation is added to the carrying amount of the assets at acquisition date and depreciated over the useful life of the asset. Provisions are discounted back to their current net present value if the effect of the time value of money is material.

Environmental obligations

Environmental expenditures resulting from the remediation of an existing condition caused by past operations, and which do not contribute to current or future revenues, are expensed as incurred. Environmental liabilities are recorded when it is probable, based on current interpretations of environmental laws and regulations, that a present obligation has arisen and the amount of such liability can be reliably estimated.

Restructuring obligations
A restructuring provision is recognised in the period in which the Group becomes legally or constructively committed to the plan. The relevant costs are those that are incremental to, or incurred as a direct result of, the exit plan, or are the result of a continuing contractual obligation with no ongoing economic benefit, or represent a penalty incurred to cancel the obligation.

Other obligations
Other obligatory provisions are recognised regarding different legal or constructive obligations as guarantees to customers, ongoing lawsuits, claims or similar.

Other provisions

EUR million	Environmental	Restructuring	Other Obligatory	Total Provisions
Carrying Value at 1 January 2017	**100**	**24**	**10**	**134**
Translation difference	-2	-3	0	-5
Company disposed				
Charge in Income Statement				
New provisions	8	17	0	25
Increase in existing provisions	14	1	3	18
Reversal of existing provisions	-1	-2	0	-3
Payments	-11	-20	-4	-35
Carrying Value at 31 December 2017	**108**	**17**	**9**	**134**
Translation difference	-3	0	-1	-3
Charge in Income Statement				
New provisions	3	2	1	6
Increase in existing provisions	1	0	3	4
Reversal of existing provisions	-3	-1	-1	-5
Payments	-7	-10	-2	-19
At 31 December 2018	**99**	**8**	**10**	**117**
Allocation between Current and Non-current Liabilities				
Current liabilities: Payable within 12 months	7	5	4	16
Non-current liabilities: Payable after 12 months	92	3	6	101
Total at 31 December 2018	**99**	**8**	**10**	**117**

Environmental obligation

Provisions for environmental remediation amounted to EUR 99 million at 31 December 2018, which was a net decrease of EUR 9 million compared with 31 December 2017, mainly due to payments and reversal of landfill coverage provision in Stora Enso Pulp AB.

Details of the principal provisions are:

- Following an agreement between Stora Enso and the City of Falun, the Group is obliged to purify runoff from the Kopparberg mine before releasing the water into the environment. The provision at year end amounted to EUR 39 (EUR 43) million.
- The total environmental provision in Finland amounted to EUR 24 (EUR 22) million. The largest provisions relate to the dismantling provision of EUR 13 (EUR 12) million for a closed operation at Oulu Mill and to the cleaning of aerated water basin at closed Kemijärvi Pulp Mill of EUR 5 (EUR 5) million.
- Skoghall Mill site contains ground pollutants that must be removed. The provision for this at year end amounted to EUR 15 (EUR 15) million.
- Hylte Mill and the Hylte Commune have a contract on the restoration and leakage water handling. This provision amounted to EUR 6 (EUR 7) million.
- Stora Enso Pulp AB has been removing mercury from the harbour basin at Skutskär for a number of years in co-operation with local authorities. In addition, the Company is obliged to upgrade an old landfill previously used by the mill to comply with revised environmental regulations. At year end Stora Enso Pulp AB had environmental provisions of EUR 4 (EUR 6) million.
- Baienfurt Mill real estate in Germany was divested during 2010 and there is a remaining environmental obligation related to landfills that were not disposed. This environmental provision amounted to EUR 5 (EUR 5) million.

Restructuring provisions

The Group has undergone major restructuring in recent years, from divestments to mill closures and administrative cost-saving programmes. New restructuring provisions by divisions are: Consumer Board EUR 1 million and Segment Other EUR 1 million.

The liability at the end of 2018 for restructuring provisions amounted to EUR 8 (EUR 17) million and covered the costs of closing down operations, demolition, clearance and redundancy costs for reducing staff numbers.

The total cash payments made during the year in respect of established restructuring provisions amounted to EUR 10 (EUR 20) million.

In February 2017 Stora Enso announced a plan to permanently shut down paper machine 8 at Kvarnsveden Mill in Sweden with an annual capacity of 100 000 tonnes of uncoated magazine paper due to structural weakening of magazine paper demand in Europe. The increase in provision amounted to EUR 11 million.

Other obligatory provisions

Other obligatory provisions amounted to EUR 10 million at 31 December 2018, which is an increase of EUR 1 million compared with 31 December 2017.

Note 23 Operative liabilities

Non-current operative liabilities

	As at 31 December	
EUR million	**2018**	**2017**
Post-employment benefit provisions	401	377
Other provisions	101	111
Share-based payments	2	11
Other payables	32	41
Total	**536**	**540**

Current operative liabilities

	As at 31 December	
EUR million	**2018**	**2017**
Trade payables	1 382	1 337
Payroll and staff-related accruals	245	240
Accrued liabilities and deferred income	217	200
Current portion of provisions	16	23
Advances received	22	19
Other payables	94	92
Total	**1 976**	**1 911**

Note 24 Financial risk management

Risk management principles and process

Stora Enso is exposed to several financial market risks that the Group is responsible for managing under policies approved by the Board of Directors. The objective is to ensure cost-effective funding of Group companies and manage financial risks effectively. The Stora Enso Group Financial Risk Policy governs all financial transactions in Stora Enso. This policy and any future amendments take effect once they are approved by the Board of Directors and all policies covering the use of financial instruments must comply with it. Group's joint operations companies operate under their own financial risk policies, which may not be fully similar to Group's policies.

The major financial market risks are detailed below with the main exposures for the Group being interest rate risk, currency risk, funding risk and commodity price risk, especially for fibre, pulp and energy.

Interest rate risk

The Group is exposed to interest rate risk that is the risk of fluctuating interest rates affecting interest expense of the Group. Stora Enso is exposed to interest rate risk through loans and financial instruments, but also through leasing and other commercial agreements. The Group's aim is to keep interest costs stable. The Group's aggregate duration should not exceed the average loan maturity, but should aim towards a longer duration. A duration above the average loan maturity is approved by the Board of Directors.

The total Group's floating rate net interest-bearing liability position, excluding cash and cash equivalents but including floating legs of interest rate swaps, amounts to some EUR 0.6 (EUR 0.7) billion. The average interest reset period for the Group's net interest-bearing liabilities, including all interest rate derivatives but excluding cash and cash equivalents, is some 4.9 (4.2) years.

As of 31 December 2018, one percentage point parallel change up or down in interest rates would impact annual net interest expenses by EUR 4 (EUR 5) million, assuming that the duration and the funding structure of the Group remain constant throughout the year. This simulation calculates the interest effect of a 100 basis point parallel shift in interest rates on all floating rate instruments from their next reset date to the end of the year. In addition, all short-term loans maturing during the year are assumed to be rolled over on maturity to year end using the new higher interest rate.

A one percentage point parallel change up or down in interest rates would also result in fair valuation gains or losses of EUR 20 (EUR 13) million before taxes in cash flow hedge reserve in OCI regarding interest rate and cross-currency swaps under cash flow hedge accounting. Note 27 Derivatives summarises the nominal and fair values of the outstanding interest rate derivative contracts.

Foreign exchange risk - transaction risk

The Group operates globally and is exposed to currency risk arising from exchange rate fluctuations against its reporting currency euro. The major currency transaction risk is the impact of exchange rate fluctuations on the Group's Income statement, which is the effect of currency rates on expected future cash flows. The Group standard policy to mitigate the risk is to hedge 45–55% of the highly probable forecast cash flows in major currencies for the next 12 months by using derivative financial instruments such as foreign exchange forwards and currency options. The Group may also hedge periods between 12 months and 36 months, or change the above mentioned hedging ratio for next 12 months upon discretion of the Group's management.

The principal foreign exchange transaction exposure comprises both the geographical location of Stora Enso production facilities and the sourcing of raw material and sales outside the euro area, mainly denominated in Swedish crowns, US dollars and British pounds.

The table below presents the estimated net operative foreign currency exposures for the main currencies for the next 12 months and the related foreign-currency hedges in place as at 31 December, retranslated using year end exchange rates. The net operative receivables and payable exposures, representing the balances as at 31 December, include foreign currency exposures generated by external and intercompany transactions in line with the requirements of IFRS 7. However, in practice mainly external exposures have been hedged through foreign currency hedges. A positive amount of exposure in the table below represents an estimated future inflow or receivable of a foreign currency amount.

Operative foreign currency exposure

	As at 31 December 2018						As at 31 December 2017					
EUR million	**SEK**	**USD**	**GBP**	**BRL**	**CZK**	**CNY**	**SEK**	**USD**	**GBP**	**BRL**	**CZK**	**CNY**
Estimated annual net cash flow exposure	-990	1 840	380	0	-190	0	-960	1 260	360	0	-180	0
Cash flow hedges next 12 months[1]	630	-930	-190	0	90	0	510	-630	-180	0	60	0
Estimated Annual Net Cash Flow Exposure, Net of Hedges	**-360**	**910**	**190**	**0**	**-100**	**0**	**-450**	**630**	**180**	**0**	**-120**	**0**
Hedging Percentage as at 31 December for Next 12 Months	**64%**	**51%**	**50%**	**0%**	**47%**	**0%**	**53%**	**50%**	**50%**	**0%**	**33%**	**0%**
Weighted-average hedged rate[2]	10.26	1.22	0.91	0.00	25.92	0.00	0	0	0	0	0	0
Translation exposure in Income Statement[3]	-160	-180	10	-120	30	-110	-150	-190	10	-120	0	-90
Operative receivables and payables exposure	40	250	33	-24	-24	-13	56	175	27	-17	-28	-8
Currency hedges	93	-209	-60	0	0	0	50	-138	-33	0	0	0
Statement of Financial Position Exposure, Net of Hedges	133	41	-27	-24	-24	-13	106	37	-6	-17	-28	-8
Estimated Annual Operative Exposure, Net of Hedges	-387	771	173	-144	-94	-123	-494	477	184	-137	-148	-98

[1] In SEK there are also additional cash flow hedges for months 13-18 (19% of estimated exposure is hedged for the months) that are not included to the above table.
[2] The weighted-average exchange rate is calculated based on bought leg of option collar structure and forward contracts' forward rate and therefore represents the weighted-average hedged rate based on the least favorable hedged rate from the Group's point-of-view.
[3] Includes unhedged sales, costs and depreciation invoiced or expensed in the domestic currency of non-euro based entities, retranslated using year end exchange rates.

The following table includes the estimated effect on annual operating profit of a strengthening in EUR versus SEK, USD, GBP, CZK and CNY by 5% and versus BRL by 10%, as reasonably possible changes in rates, measured against year end closing rates. A corresponding decrease in the exchange rates would have an approximately equal opposite impact. A negative amount in the table reflects a potential net loss in the income statement or equity and, conversely, a positive amount reflects a potential net gain. In practice, the actual foreign currency results may differ from the sensitivity analysis presented below since the income statements of subsidiaries with functional currencies other than the euro are translated into the Group reporting currency using the average exchange rates for the year, whereas the statements of financial position of such subsidiaries, including currency hedges, trade receivables and payable, are translated using the exchange rates at the reporting date.

The calculation includes currency hedges and assumes that no changes other than a single currency exchange rate movement have taken place in the underlying risk exposure. The currency effects are based on estimated operative foreign currency flows for the next twelve months, hedging levels at the year end and the assumption that the currency cash flow hedging levels, translation exposure in Income statement and all other variables will remain constant during the next twelve months. Hedging instruments include foreign exchange forward contracts and foreign exchange options. Indirect currency effects with an impact on prices and product flows, such as a product becoming cheaper to produce elsewhere, have not been considered in this calculation.

Estimated currency effects of strengthening of euro

	As at 31 December 2018						As at 31 December 2017					
EUR million	**SEK**	**USD**	**GBP**	**BRL**	**CZK**	**CNY**	**SEK**	**USD**	**GBP**	**BRL**	**CZK**	**CNY**
Currency change versus EUR	-5%	-5%	-5%	-10%	-5%	-5%	-5%	-5%	-5%	-10%	-5%	-5%
Effect on estimated annual net cash flow and translation exposure	58	-83	-20	12	8	6	56	-54	-19	12	9	5
Effect on hedging reserve before taxes as at year end[1]	-32	47	10	0	-5	0	-26	32	9	0	-3	0
EBIT impact as at year end[2]	-7	-2	1	2	1	1	-5	-2	0	2	1	0
Estimated Annual EBIT Impact[3]	19	-38	-9	14	4	7	25	-24	-10	14	7	5

[1] The effect on hedging reserve (other comprehensive income) before taxes at year end is related to the fair value change in derivatives contracts qualifying as cash flow hedges of highly probable forecast cash flows.
[2] The Operating Profit impact as at year end represents the estimated currency effect related to operative payables and receivables, and the net of hedges.
[3] The estimated annual Operating Profit impact includes currency effects in respect of operative exposures in the Statement of Financial Position, forecast cash flows and related hedges and translation exposure in Income Statement.

The following table presents the financial foreign currency exposure and the related hedges in place as at 31 December for the main currencies. Net debt includes loan payables and related interest rate derivatives, net of loan receivables and cash and cash equivalents. The currency derivatives mainly hedge financial exposures in the statement of financial position and from time to time they also hedge forecast cash flows not qualifying under hedge accounting. These forecast cash flows are not included in the below table. A negative amount of exposure in the table represents a net payable of a foreign currency amount.

Additionally, the table includes the estimated effect on the income statement of a strengthening in the EUR versus SEK, USD, CNY and PLN by 5% and versus BRL by 10%, as reasonably possible changes in rates, measured against year-end closing rates. A corresponding decrease in the exchange rates would have an approximately equal opposite impact. A negative amount in the table reflects a potential net loss in the Income statement and, conversely, a positive amount reflects a net potential gain. In practice, the actual foreign currency results may differ from the sensitivity analysis below as the exposure amounts may change during the year.

Financial foreign currency exposure and estimated currency effects in Income Statement

	As at 31 December 2018				As at 31 December 2017			
EUR million	**SEK**	**USD**	**CNY**	**PLN**	**SEK**	**USD**	**CNY**	**PLN**
Net debt excluding hedges	130	-213	602	112	420	-347	472	161
Currency hedges	-187	-47	-283	-4	-530	-28	-86	0
Net Financial Exposure	**-57**	**-260**	**319**	**108**	**-110**	**-375**	**386**	**161**
Currency change versus EUR	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%
Effect in the Income Statement	**3**	**13**	**-16**	**-5**	**6**	**19**	**-19**	**-8**

Foreign exchange risk - translation risk

Translation risk results from fluctuations in exchange rates affecting the value of Stora Enso's net foreign currency denominated assets and liabilities. Translation risk is reduced by funding assets, whenever economically possible, in the same currency as the asset. The Group may also enter into foreign exchange forwards, foreign exchange options or foreign currency denominated loans to hedge its net investments in foreign entities.

The balance sheets of foreign subsidiaries, equity accounted investments and foreign currency denominated equity instruments in the scope of IFRS 9 are translated into euros using exchange rates prevailing on the reporting date, thus exposing consolidated group equity to fluctuations in currency rates. The resulting translation differences, along with other movements such as the translation rate difference in the income statement, are recorded directly in shareholders' equity. These cumulative differences materialise through the Income statement on the disposal, in whole or in part, of the foreign entity. The next table shows the translation exposure on equity before and after hedges.

Translation risk and hedges: 2018

	As at 31 December 2018							
EUR million	**Euro area**	**USD area[2]**	**Sweden**	**China**	**Poland**	**Brazil**	**Other**	**Total**
Translation Exposure on Equity	**2 246**	**1 345**	**1 913**	**269**	**360**	**314**	**267**	**6 714**
EUR/USD hedges[1]	306	-306	0	0	0	0	0	0
Translation Exposure after Hedges	**2 552**	**1 039**	**1 913**	**269**	**360**	**314**	**267**	**6 714**

[1] USD denominated bonds classified as hedges of investments in foreign assets.
[2] Includes the joint operation Montes del Plata in Uruguay, which has USD as its functional currency.

Translation risk and hedges: 2017

	As at 31 December 2017							
EUR million	**Euro area**	**USD area[2]**	**Sweden**	**China**	**Poland**	**Brazil**	**Other**	**Total**
Translation Exposure on Equity	**2 011**	**1 242**	**1 372**	**400**	**306**	**391**	**286**	**6 008**
EUR/USD hedges[1]	292	-292	0	0	0	0	0	0
Translation Exposure after Hedges	**2 303**	**950**	**1 372**	**400**	**306**	**391**	**286**	**6 008**

[1] USD denominated bonds classified as hedges of investments in foreign assets.
[2] Includes the joint operation Montes del Plata in Uruguay, which has USD as its functional currency.

The table below shows the effect on consolidated equity of a strengthening in the euro against the US dollar, Swedish crown, Chinese renminbi, Polish zloty and Brazilian real at 31 December. A corresponding decrease in the exchange rates would have an approximately equal opposite impact. The calculation includes the effects of currency hedges of net investments in foreign entities and assumes that no changes take place other than a single currency exchange rate movement on 31 December each year. The exposures used in the calculations are the foreign currency denominated equity and the hedging levels at 31 December. The hedging instruments used may be foreign currency forward contracts, currency options and foreign currency denominated borrowings. Full details of actual CTA movements and hedging results are given in Note 28 Cumulative translation adjustment and equity hedging.

Consolidated equity: currency effects of strengthening of euro before tax

	As at 31 December 2018			As at 31 December 2017		
EUR million	**Before Hedges**	**Hedges**	**Net Impact**	**Before Hedges**	**Hedges**	**Net Impact**
By 5% versus SEK	-96	0	-96	-69	0	-69
By 5% versus USD	-67	15	-52	-62	15	-47
By 5% versus CNY	-13	0	-13	-20	0	-20
By 5% versus PLN	-18	0	-18	-15	0	-15
By 10% versus BRL	-31	0	-31	-39	0	-39
Total Effect from Above	**-225**	**15**	**-210**	**-205**	**15**	**-190**

Liquidity and refinancing risk

Funding risk arises from the difficulty of obtaining finance for operations at a given point in time. Stora Enso's funding policy states that the average maturity of outstanding loans and committed credit facilities covering short-term borrowings should be at least four years. The policy further states that the group must have committed credit facilities to cover planned funding needs, the current portion of long-term debt, commercial paper borrowings and other uncommitted short-term loans. At 31 December 2018 unused committed credit facilities were at EUR 600 (EUR 600) million. The EUR 600 million committed credit facility agreement with a syndicate of 13 banks matures in January 2023. The facility is used as a backup for general corporate purposes. In addition, Stora Enso has access to various long-term sources of funding up to EUR 1 000 (EUR 950) million. These mainly relate to available funding sources from Finnish pension funds.

Refinancing risk, or the risk that maturing debt is not refinanced in the markets, is mitigated by Stora Enso's target of maintaining an even maturity profile of outstanding debt. The table below shows Group's contractual undiscounted interest-bearing financial liabilities, to be settled on a net cash basis, classified under principal headings based on the remaining period to contractual maturity at the reporting date. Forward rates were used at the point of estimation for contractual finance charges.

Contractual maturity repayments of interest-bearing liabilities, settlement net: 2018

EUR million	**2019**	**2020**	**2021**	**2022**	**2023**	**2024+**	**Total**
Bond loans	220	0	0	0	298	1 005	1 523
Loans from credit institutions	181	213	167	142	399	38	1 140
Financial lease liabilities	0	0	0	0	0	1	1
Other non-current liabilities	0	4	0	0	0	0	4
Non-current Debt including Current Portion	**401**	**217**	**167**	**142**	**697**	**1 044**	**2 668**
Less fair value adjustments to carrying amounts	-2	0	0	0	1	7	6
Estimated contractual finance charges	121	81	72	64	52	318	708
Contractual Repayments on Non-Current Debt	**520**	**298**	**239**	**206**	**750**	**1 369**	**3 382**
Short-term borrowings, carrying amounts	566	0	0	0	0	0	566
Gross-settled derivatives - receipts	2 411	71	0	0	0	0	2 482
Gross-settled derivatives - payments	-2 444	-70	0	0	0	0	-2 514
Net-settled derivative liabilities	-22	-13	-11	-10	-7	0	-63
Trade payables	1 383	0	0	0	0	0	1 383
Estimated contractual finance charges	14	0	0	0	0	0	14
Bank overdrafts	1	0	0	0	0	0	1
Total Contractual Repayments at 31 December 2018	**2 429**	**286**	**228**	**196**	**743**	**1 369**	**5 251**

Contractual maturity repayments of interest-bearing liabilities, settlement net: 2017

EUR million	**2018**	**2019**	**2020**	**2021**	**2022**	**2023+**	**Total**
Bond loans	137	221	0	0	0	994	1 352
Loans from credit institutions	202	185	183	122	127	210	1 029
Financial lease liabilities	28	0	0	0	0	1	29
Other non-current liabilities	3	3	0	0	0	0	6
Non-current Debt including Current Portion	**370**	**409**	**183**	**122**	**127**	**1 205**	**2 416**
Less fair value adjustments to carrying amounts	3	7	4	3	3	8	28
Estimated contractual finance charges	98	82	63	58	51	310	662
Contractual Repayments on Non-Current Debt	**471**	**498**	**250**	**183**	**181**	**1 523**	**3 106**
Short-term borrowings, carrying amounts	525	0	0	0	0	0	525
Gross-settled derivatives - receipts	-1 982	-81					-2 063
Gross-settled derivatives - payments	1 954	86					2 040
Net-settled derivative liabilities	28	2	1	1	0	0	32
Trade payables	1 337	0	0	0	0	0	1 337
Estimated contractual finance charges	16	0	0	0	0	0	16
Bank overdrafts	4	0	0	0	0	0	4
Total Contractual Repayments at 31 December 2017	**2 353**	**505**	**251**	**184**	**181**	**1 523**	**4 997**

Financial transactions counterparty credit risk

Financial counterparty risk is Stora Enso's exposure on financial contracts arising from a deterioration in counterparties' financial health.
This risk is minimised by:

- entering into transactions only with leading financial institutions and with industrial companies that have a good credit rating;
- investing in liquid cash funds only with financial institutions or companies that have a minimum rating of BBB-, with at least 50% of liquidity investments in funds with a minimum rating of A-, using Standard and Poor's credit rating symbols;
- requiring parent company guarantees when dealing with any subsidiary of a rated company.

The Group Financial Risk Policy defines the limits for accepted counterparty risk, based on the tenor of financial contract and counterparty's credit rating.

At the year end in 2018, there were no significant concentrations of risk with respect to counterparties of derivative contracts, with the highest counterparty exposure being at EUR 8 (EUR 5) million and credit rating of A+ (A+) using Standard and Poor's credit rating symbols.

Customer credit risk

Customer credit risk is Stora Enso's exposure to contracts arising from deterioration in the financial health of customers. The Group uses various measures to reduce credit risks, including but not limited to letters of credit, prepayments and bank guarantees. The Group has also obtained export guarantees, covering both political and commercial risks, which are used in connection with individual customers outside the OECD area. Management considers that no significant concentration of credit risk with any individual customer, counterparty or geographical region exists for Stora Enso. The aging information of trade receivables and related loss allowances are given in Note 17 Operative receivables.

Commodity price risk

Outstanding commodity hedges

		As at 31 December 2018	
EUR million	**Underlying amount of commodity hedged**	**Nominal amount hedged**	**Fair value**
Coal hedges	58 500 tonnes	5	-
Electricity hedges	2 088 000 MWh	67	35
Oil hedges	65 700 barrels	15	-2

Group earnings are exposed to commodity and energy price volatility. Financial energy hedges are part of the total energy price risk management in the group, whilst other commodity risks are measured and hedged if economically possible. A 10% movement in energy and raw material prices would result in a EUR 13 (EUR 27) million change in the fair value of energy and raw material hedging contracts. The majority of these fair value changes, after taxes, are recorded directly in Equity under Hedging Reserves, until the contracts mature and the result is entered in the Income statement. These estimates represent only the sensitivity of the financial instruments to market risk and not the Group exposure to raw material and energy price risks as a whole, since the actual purchases are not financial instruments within the scope of the IFRS 7 disclosure requirements. At end of 2018, the maturities of the energy and commodity contracts ranged between 2019 and 2024. In 2017 the maturities ranged between 2018 and 2024.

The bulk of the Group energy price risk has been covered by entering into long-term physical fixed price purchase agreements. The Group also has a 15.6% holding, fair valued at EUR 415 (EUR 308) million, in Pohjolan Voima Oy (PVO), a privately owned group of companies in the energy sector. The value of these shares is dependent on energy market prices and discussed in more detail in Note 14 Equity instruments.

In addition, in an effort to mitigate other commodity price risk exposures in relation to supply of wood, the Group is a significant shareholder in major forest and wood supply companies in Finland and Sweden. Potential increase in prices for fibre in these countries would also increase profits from these group interests, mainly being Bergvik Skog in Sweden and Tornator in Finland.

Share price risk

The Group has certain investments in publicly traded securities. The market value of these equity investments was EUR 13 (EUR 21) million at the year end. Market value changes in these investments are recorded, after taxes, directly under Shareholders' Equity in the Equity instruments through OCI reserve. Detailed discussion regarding the publicly traded securities can be found from Note 14 Equity instruments.

Capital risk management

Stora Enso's debt structure is focused on capital markets, whereas banks are primarily used to provide back-up facilities. Group objectives when managing capital are to safeguard the ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders, as well as to maintain an optimal capital structure to reduce the cost of capital. In order to maintain or adjust the capital structure, the Group may, subject to shareholder approval as appropriate, vary the dividend paid to shareholders, buy its own shares on the financial markets, return capital to shareholders, issue new shares or sell assets to reduce debt. Group strives to pay stable dividends linked to the long-term performance with the aim of distributing 50% of the net income over the cycle.

As announced in 2018, the Group set new target levels for Net-debt to-Operational EBITDA and Net-debt-to-Equity ratios. Going forward the Group monitors its capital on the basis of a target net debt-to-equity ratio of 0.60 or less (earlier 0.80 or less), and ensuring that Net-debt-to-Operational EBITDA ratio remains below 2.0 (earlier below 3.0), indicating a solid financial position, and financial flexibility.

Capital structure

	As at 31 December	
EUR million	**2018**	**2017**
Interest-bearing liabilities	3 344	3 016
Interest-bearing assets	1 252	763
Net debt	**2 092**	**2 253**
Equity Attributable to Owners of the Parent	**6 714**	**6 008**
Operational EBITDA[1]	**1 878**	**1 587**
Net debt to Equity Ratio	**0.31**	**0.38**
Net Debt to Operational EBITDA	**1.10**	**1.42**

[1] Operational EBITDA definition is included in the "Non-IFRS measures" chapter in the Report of the Board of Directors.

Montes del Plata, a joint operation of Stora Enso, and the Group's subsidiary Stora Enso (Guangxi) Packaging Company Ltd. have complied with financial covenants related to debt-to-assets ratio during the reported periods.

Note 25 Fair values

Accounting principles

Investments
The Group classifies its investments in debt instruments into three categories, which are amortised cost, fair value through other comprehensive income and fair value through profit and loss. The Group's investments into equity securities, such as listed and unlisted securities, are classified as fair value through profit and loss unless the Group has at inception decided to apply the irrevocable election under IFRS 9 to classify the investments as fair value through other comprehensive income with only dividend income from the investments being recognised in the Income Statement.

The classification is made according to IFRS 9 standard, based on the business model and contractual cash flow characteristics of debt instruments. Management determines the classification of its investments at the time of the purchase. Investments in debt instruments for which the business model objective is to hold the financial instruments to collect contractual cash flows and those cash flows are solely payments of principal and interest, are classified as amortised cost and presented in current and non-current assets. Investments in debt instruments for which the business model objective is to hold the financial instruments for both to collect contractual cash flows and sell financial instruments and the cash flows are solely payments of principal and interest, are classified as fair value through other comprehensive income and presented in current and non-current assets.

Investments acquired principally for the purpose of generating profits from short-term fluctuations in price are classified as fair value through profit and loss and are therefore fair valued through the Consolidated Income Statement and presented in current and non-current assets.

Fair value of financial instruments
The fair values of publicly traded derivatives and listed securities, are based on quoted market prices at the reporting date; the fair values of interest rate swaps are calculated as the present value of the estimated future cash flows and the fair values of foreign exchange forward contracts are determined using forward exchange rates at the reporting date. The valuation principles for derivative financial instruments have been described in more detail in Note 27 Derivatives.

In assessing the fair values of non-traded derivatives and other financial instruments, the Group uses a variety of methods and makes assumptions based on the market conditions at each reporting date. Quoted market prices or dealer quotes for identical or similar instruments are used for non-current debt. Other techniques, such as option pricing models and estimated discounted value of future cash flows, are used to determine fair values for the remaining financial instruments. The face values, less any estimated credit adjustments, for financial assets and liabilities with a maturity of less than one year are assumed to approximate their fair values. The fair values of financial liabilities for disclosure purposes are estimated by discounting the future contractual cash flows at the current market interest rates available to the Group for similar financial instruments.

Purchases and sales of financial instruments are recognised based on trade date accounting, which is the date on which the Group commits to purchasing or selling the financial instrument. Financial instruments are derecognised when the rights to receive or the cash flows from the financial instruments have expired or have been transferred and the Group has substantially transferred all risks, rewards and obligations of the ownership of the financial asset or liability.

Loan receivables
Loan receivables are debt instruments with fixed or determinable payments that are not quoted on an active market. They are recorded initially at fair value and subsequently measured at amortised cost. Loss allowance for expected credit losses is calculated based on the general approach under IFRS 9 where loss allowance is recognised based on 12-month expected credit losses if there has not been a significant increase in credit risk since the initial recognition. Significant increase in the credit risk will be evaluated based on comparison of the risk of a default occurring on the financial instrument as at the reporting date with the risk of default occurring on the financial instrument as at the date of initial recognition. The Group may use, for example, rates of credit default swaps (CDS) observable on financial markets to produce the risk assessment.

Interest income on loan receivables is included in Financial income and expense. Loan receivables with a maturity less than 12 months are included in current assets under interest-bearing receivables and those with maturities greater than 12 months, in non-current loan receivables.

Fair value hierarchy
The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

- Level 1: quoted (unadjusted) prices in active markets for identical assets or liabilities;
- Level 2: other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly;
- Level 3: techniques which use inputs which have a significant effect on the recorded fair values that are not based on observable market data.

See Note 14 Equity instruments for more information on Level 3 fair value measurement of listed and unlisted securities.

Carrying amounts of financial assets and liabilities by measurement category: 2018

EUR million	Amortised cost	Fair value through OCI	Fair value through Income Statement	Hedge accounted derivatives	Total carrying amount	Fair Value	Note
Financial assets							
Listed securities	-	13	-	-	13	13	14
Unlisted securities	-	415	8	-	422	422	14
Non-current loan receivables	54	-	-	-	54	54	25
Trade and other operative receivables	1 092	44	-	-	1 136	1 136	17
Interest-bearing receivables	1	-	5	49	55	55	25
Cash and cash equivalents	1 130	-	-	-	1 130	1 130	
Total	**2 277**	**472**	**13**	**49**	**2 811**	**2 811**	

EUR million	Amortised cost	Fair value through Income Statement	Hedge accounted derivatives	Total carrying amount	Fair Value	Note
Financial liabilities						
Non-current debt	2 265	-	-	2 265	2 541	26
Current portion of non-current debt	403	-	-	403	403	26
Interest-bearing liabilities	604	7	63	675	675	26
Trade and other operative payables	1 627	21	-	1 648	1 648	23
Bank overdrafts	1	-	-	1	1	
Total	**4 901**	**28**	**63**	**4 992**	**5 268**	

Carrying amounts of financial assets and liabilities by measurement category: 2017

EUR million	Loans and Receivables	Financial Items at Fair Value through Income Statement	Hedging Derivatives	Available-for-Sale Investments	Carrying Amounts	Fair Value	Note
Financial assets							
Available-for-sale	-	-	-	339	339	339	14
Non-current loan receivables	55	-	-	-	55	55	25
Trade and other operative receivables	965	-	-	-	965	965	17
Interest-bearing receivables	15	16	49	-	80	80	25
Cash and cash equivalents	607	-	-	-	607	607	
Total	**1 642**	**16**	**49**	**339**	**2 046**	**2 046**	

EUR million	Financial Items at Fair Value through Income Statement	Hedging Derivatives	Measured at Amortised cost	Carrying Amounts	Fair Value	Note
Financial liabilities						
Non-current debt	-	-	2 046	2 046	2 357	26
Current portion of non-current debt	-	-	370	370	370	26
Interest-bearing liabilities	4	32	560	596	596	26
Trade and other operative payables	20	-	1 576	1 596	1 596	23
Bank overdrafts	-	-	4	4	4	
Total	**24**	**32**	**4 556**	**4 612**	**4 923**	

In the previous tables, fair value is estimated to be equal to the carrying amount for short-term financial assets and financial liabilities such as trade receivables and payables due to their short time to maturity and limited credit risk. The fair value of non-current debt, considered as a level 2 fair value measurement, is estimated based on a discounted cash flow analysis in which the yield curves observable at commonly quoted intervals are used as a discount factor in the model.

In 2014, Stora Enso acquired 100% of the shares of the US-based company Virdia Inc. The transaction included potential pay-outs depending on the completion of specific technical and commercial milestones. The present value of the estimated pay-outs, considered as a level 3 fair value measurement, is estimated based on certain probability criteria and discounted cash flow analysis. At year end, the fair value amounted to EUR 21 (EUR 20) million and is presented in the above table under trade and other operative payables.

Fair value measurements recognised in the statement of financial position: 2018

	As at 31 December			
EUR million	**Level 1**	**Level 2**	**Level 3**	**Total**
Listed securities				
Listed securities through OCI	13	-	-	13
Unlisted securities				
Unlisted securities through OCI	-	-	415	415
Unlisted securities through profit and loss	-	-	8	8
Trade and other operative assets				
Operative receivables through OCI	-	44	-	44
Derivative financial assets				
Hedge accounted derivatives	-	49	-	49
Derivatives at fair value through profit and loss	-	5	-	5
Total financial assets	**13**	**98**	**422**	**533**
Trade and other operative liabilities				
Operative payables through profit and loss	-	-	21	21
Derivative financial liabilities				
Hedge accounted derivatives	-	63	-	63
Derivatives at fair value through profit and loss	-	7	-	7
Total financial liabilities	**-**	**70**	**21**	**91**

Fair value measurements recognised in the statement of financial position: 2017

	As at 31 December			
EUR million	**Level 1**	**Level 2**	**Level 3**	**Total**
Derivative financial assets				
Hedging derivatives	-	49	-	49
Derivatives at fair value through profit and loss	-	16	-	16
Available-for-sale investments				
Listed securities	21	-	-	21
Unlisted shares	-	-	318	318
Trade and other operative assets				
Operative receivables through profit and loss	-	-	-	-
Total financial assets	**21**	**65**	**318**	**404**
Derivative financial liabilities				
Hedging derivatives	-	32	-	32
Derivatives at fair value through profit and loss	-	4	-	4
Trade and other operative liabilities				
Operative payables through profit and loss	-	-	20	20
Total financial liabilities	**-**	**36**	**20**	**56**

Interest-bearing receivables

	As at 31 December	
EUR million	**2018**	**2017**
Derivatives	54	65
Loans to equity accounted investments	2	3
Other loan receivables	53	67
Total	**110**	**135**
Current assets: Receivable within 12 months	55	80
Non-current assets: Receivable after 12 months	54	55
Total	**110**	**135**

Annual interest rates for loan receivables at 31 December 2018 ranged from 0% (0%) to 4% (8%). Current interest-bearing receivables did not include any accrued interest at 31 December 2018. The Group has evaluated that there has not been significant increase in credit risk related to interest-bearing receivables after the initial recognition. Accordingly, they are considered to have low credit risk and loss allowance is recognised based on 12-month expected credit losses.

Reconciliation of level 3 fair value measurement of financial assets and liabilities

EUR million	2018	2017
Financial assets		
Opening balance at 1 January	318	253
Gains/losses recognised in income statement	-2	-2
Gains/losses recognised in other comprehensive income	104	60
Additions	3	7
Disposals	-1	0
Closing Balance at 31 December	**422**	**318**

EUR million	2018	2017
Financial liabilities		
Opening balance at 1 January	20	23
Gains/losses recognised in income statement	1	-3
Closing Balance at 31 December	**21**	**20**

Note 26 Debt

Accounting principles

Debt

Debt is recognised initially at fair value, net of transaction costs incurred. In subsequent periods, it is stated at amortised cost using the effective interest method; any difference between proceeds, net of transaction costs, and redemption value is recognised in the Consolidated income statement over the period of the borrowings. Interest expenses are accrued for and recorded in the Consolidated income statement for each period.

Debt with an original maturity greater than 12 months is classified as non-current debt in the Consolidated statement of financial position, though repayments falling due within 12 months are presented in current liabilities under the current portion of non-current debt. Short-term commercial paper, bank and other interest-bearing borrowings for which the original maturity is less than 12 months are presented in current liabilities under interest-bearing liabilities.

Finance leases

Leases of property, plant and equipment for which the Group has substantially all the rewards and risks of ownership are classified as finance leases. Finance leases are capitalised at the commencement of the lease at the lower of the fair value of the leased property or the estimated present value of the minimum lease payments. Each lease payment is allocated between the capital liability and finance charges so as to achieve a constant interest rate on the outstanding finance balance. The corresponding rental obligations, and net of finance charges are included in interest-bearing liabilities with the interest element of the finance charge being taken onto the Consolidated income statement over the lease period. Property, plant and equipment acquired under finance leasing contracts are depreciated over the lesser of the useful life of the asset or lease period.

The below table includes a breakdown of the Group's interest-bearing liabilities and the related changes in the balances.

Interest-bearing liabilities

	As at 31 December	
EUR million	**2018**	**2017**
Bond loans	1 523	1 352
Loans from credit institutions	1 140	1 029
Finance lease liabilities	1	29
Other non-current liabilities	4	6
Non-current Debt including Current Portion	**2 668**	**2 416**
Short-term borrowings	566	525
Interest payable	40	35
Derivative financial liabilities (see Note 25)	68	36
Bank overdrafts	1	4
Total Interest-bearing Liabilities	**3 344**	**3 016**

EUR million	2018	2017
Carrying Value at 1 January	3 016	3 774
Proceeds of new long-term debt	578	425
Repayment of long-term debt	-358	-1 034
Change in short-term borrowings and interest payable	46	54
Change in derivative financial liabilities	32	-21
Translation differences and other	30	-182
Total Interest-bearing Liabilities	**3 344**	**3 016**

During 2018 Stora Enso successfully issued a new EUR 300 million bond under its EMTN (Euro Medium Term Note) programme. The bond matures in March 2028 and pays a fixed coupon of 2.5%. In 2018 Stora Enso also repurchased 2019 fixed rate euro notes with a nominal value of EUR 3 million.

In the third quarter of 2018 Fitch Ratings assigned Stora Enso Oyj an investment grade credit rating of BBB- with stable outlook highlighting Stora Enso's improved cash flow generation and strengthened balance sheet. In the fourth quarter of 2018, Moody's Investors Service also assigned Stora Enso Oyj an investment grade credit rating by upgrading the long-term issuer rating from Ba1 to Baa3 with stable outlook.

During 2018 Stora Enso launched a Green Bond Framework as part of its Sustainable Finance approach. The ambition is to offer a loan-format to support sustainability-focused fixed income investors and to report the direct environmental impacts of some investments and business activities.

Stora Enso's borrowings maturities are ranging from 2019 to the longest borrowing maturing in 2036. Borrowings have either fixed or floating interest rates ranging from 0.9% (0.6%) to 8.6% (8.6%). The majority of Group loans are denominated in euros, US dollars or Chinese renminbis. Detailed maturity analysis of the Group's borrowings are set out in Note 24 Financial risk management.

During 2018 Stora Enso's total repayments of EUR bond notes amounted to a nominal of EUR 159 (EUR and SEK bond notes of EUR 609) million including the previously mentioned repayments. In 2018 net interest-bearing liabilities decreased by EUR 161 (decreased by EUR 473) million to EUR 2 092 (EUR 2 253) million. Net interest-bearing liabilities are equal to total interest-bearing liabilities less total interest-bearing assets. Cash and cash equivalents net of overdrafts increased by 525 (decreased by EUR 346) million to EUR 1 128 (EUR 603) million as at 31 December 2018.

In 2017 Stora Enso successfully issued a new bond under its EMTN (Euro Medium Term Note) programme. The EUR 300 million ten-year bond pays a fixed coupon of 2.5% and matures in June 2027. In June 2017 Stora Enso repurchased in a public tender fixed rate notes with a nominal value of EUR 83 million from the 2018 bond, and of EUR 216 million from the 2019 bond, issued in 2012.

Bond loans

Issue/ Maturity Dates	Description of Bond	Interest Rate %	Currency of Bond	Nominal Value Issued	Outstanding As at 31 December 2018	Outstanding As at 31 December 2017	Carrying Value As at 31 December 2018	Carrying Value As at 31 December 2017
All Liabilities are Held by the Parent Company					**Currency million**		**EUR million**	
Fixed Rate								
1993-2019	Series C Senior Notes 2019	8.6	USD	50	50	50	45	44
2006-2036	Global 7.250% Notes 2036	7.25	USD	300	300	300	259	247
2012-2018	Euro Medium Term Note	5	EUR	500	0	112	0	112
2012-2019	Euro Medium Term Note	5.5	EUR	500	175	178	175	178
2016-2023	Euro Medium Term Note	2.125	EUR	300	300	300	298	298
2017-2027	Euro Medium Term Note	2.5	EUR	300	300	300	298	298
2018-2028	Euro Medium Term Note	2.5	EUR	300	300	0	298	0
Total Fixed Rate Bond Loans							**1 373**	**1 177**
Floating Rate								
2006-2018	Euro Medium Term Note	Euribor+0.96	EUR	25	0	25	0	25
2015-2025	Euro Medium Term Note	Euribor+2.25	EUR	125	125	125	125	125
2015-2027	Euro Medium Term Note	Euribor+2.35	EUR	25	25	25	25	25
Total Floating Rate Bond Loans							**150**	**175**
Total Bond Loans							**1 523**	**1 352**

Finance lease liabilities

At 31 December 2018 Stora Enso had a small number of finance leasing agreements for machinery and buildings for which capital costs of EUR 3 (EUR 14) million were included in property, plant and equipment and buildings; the depreciation and impairment thereon was EUR 2 (EUR 7) million. The aggregate leasing payments for the year amounted to EUR 28 (EUR 28) million, the interest element being EUR 1 (EUR 1) million.

Finance lease liabilities - payments schedule and present value

EUR million	As at 31 December 2018	As at 31 December 2017
Minimum Lease Payments		
Less than 1 year	0	29
1-2 years	0	0
2-3 years	0	0
3-4 years	0	0
4-5 years	0	0
Over 5 years	2	1
	2	**30**
Future finance charges	-1	-1
Present Value of Finance Lease Liabilities	**1**	**29**

EUR million	As at 31 December 2018	As at 31 December 2017
Present Value of Finance Lease Liabilities		
Less than 1 year	0	28
1-2 years	0	0
2-3 years	0	0
3-4 years	0	0
4-5 years	0	0
Over 5 years	1	1
	1	**29**

Note 27 Derivatives

Accounting principles

Derivative financial instruments and hedge accounting
Financial derivatives are initially recognised in the Consolidated Statement of Financial Position at fair value and subsequently measured at their fair value at each reporting date, though the method of recognising the resulting gains or losses is dependent on the nature of the item being hedged. When derivative contracts are entered into, the Group designates them as either hedges of highly probable forecast transactions or firm commitments (cash flow hedges), hedges of the exposure to changes in the fair value of recognised assets or liabilities (fair value hedges), hedges of net investments in foreign entities or derivative financial instruments not meeting the hedge accounting criteria in accordance with IFRS 9.

At the inception of a hedge, the Group documents the relationship between the hedging instrument and the hedged item, as well as its risk management objective and strategy for undertaking various hedging transactions. This process includes linking all financial instruments designated under hedge accounting to specific assets and liabilities or to specific firm commitments or highly probable forecast transactions in order to verify and document hedge relationship between the hedged item and the hedging instrument as required by IFRS 9. For operational cash flow hedging purposes, foreign currency forwards and options are denominated in the same currency as the highly probable forecast transactions resulting in a hedge designation where critical terms of the hedging instrument and the hedged item will coincide. The Group also documents its qualitative prospective assessment at the hedge inception of whether the derivatives used in a hedge relationship are highly effective in offsetting changes in fair value or cash flows of hedged items. Hedge effectiveness will be assessed in accordance with IFRS 9 requirements.

Cash flow hedges
Changes in the fair value of derivatives designated and qualifying as cash flow hedges, and which are effective, are recognised in cash flow hedges reserve within OCI, the movements of which are disclosed in the Consolidated Statement of Comprehensive Income. In case of currency options, the time value of an option is excluded from the hedge designation and only the intrinsic value component of an option is designated as the hedging instrument. The changes in option time value are recognised in cost of hedging reserve within OCI. The cumulative gain or loss of a derivative deferred in equity is transferred to the Consolidated Income Statement and classified as income or expense in the same period in which the hedged item affects the Consolidated Income Statement. Realised results of hedge accounted derivative instruments hedging foreign currency sales transactions or purchases are booked as adjustments to sales or materials and services depending on the nature of the underlying hedged item and are specified in more detail in Note 27 Derivatives.

In respect of hedges of exposures to foreign currency risk of future transactions resulting in the recognition of non-financial assets, the gains and losses deferred to cash flow hedges reserve within OCI are transferred from equity to be included in the initial acquisition cost of the non-financial asset at the time of recognition. The deferred amounts are ultimately recognised in the Income Statement through depreciation over the lifetime of the non-financial assets.

When a hedging instrument expires or is sold, terminated or exercised or no longer meets the hedge accounting criteria under IFRS 9, any cumulative gain or loss deferred in equity at that time remains in equity and is accounted for as an adjustment to income or expense when the committed or forecast transaction is ultimately recognised in the Consolidated Income Statement. However, if the underlying forecasted transaction is no longer expected to occur, the cumulative gain or loss reported in equity from the period when the hedge was effective is immediately recognised in the Consolidated Income Statement.

Fair value hedges
In case of fair value hedges, the Group uses either derivatives or borrowings as a hedging instrument to manage the risk associated with the fair value of a hedged item. The gains and losses on hedging instruments designated and qualifying as fair value hedges, and which are highly effective, are recorded in the Consolidated Income Statement, along with any changes in the fair value of the hedged assets or liabilities attributable to the hedged risk.

Net investment hedges
Hedges of net investments in foreign entities are accounted for similarly to cash flow hedges. The Group uses either derivatives or foreign-currency borrowings for this purpose. If the hedging instrument is a derivative, any gain or loss thereon relating to the effective portion of the hedge is recognised in equity in CTA as disclosed in the Consolidated Statement of Comprehensive Income; the gain or loss relating to the ineffective portion is immediately recognised in the Consolidated Income Statement. In addition, exchange gains and losses arising on the translation of a foreign-currency borrowing that hedges net investment in a foreign operation are also recognised in CTA, any ineffective portion being immediately recognised in the Consolidated Income Statement.

Fair value through profit and loss derivatives
Certain derivative transactions, while providing effective economic hedges under Group risk management policies, do not qualify for hedge accounting under the specific rules in IFRS 9 and therefore changes in the fair value of such non-qualifying hedges are accounted for at fair value in the Consolidated Income Statement. Similarly, any ineffectiveness arising from hedging instruments is immediately recognised in the Consolidated Income Statement. Fair value changes of non-hedge accounted derivatives are recognised in the Consolidated Income Statement under financial income and expense. For total return swaps (TRS), the periodic changes in fair value are recorded in the Income Statement in operative costs alongside the share-based payment programme costs to which they relate.

Valuation of derivatives
Derivative financial instruments are recorded in the Statement of financial position at their fair values defined as the amount at which the instrument could be exchanged in an orderly transaction between market participants at the measurement date. The fair values of such financial items have been estimated on the following basis:

- Currency forward contract fair values are calculated using forward exchange rates at the reporting date.
- Currency option contract fair values are calculated using year-end market rates together with common option pricing models.
- Commodity contract fair values are computed with reference to quoted market prices on futures exchanges or other reliable market sources.
- Interest rate swaps fair values are calculated using a discounted cash flow analysis.
- Cross-currency swaps fair values are calculated using a discounted cash flow analysis with exchange of notionals being also included into the valuation model.

Shareholders' equity – other comprehensive income

Outstanding derivatives designated under cash flow hedge accounting are measured at fair value with the fair value movements being recorded in the separate equity category of OCI: Cash Flow Hedges Reserve. Time value of options is excluded from the cash flow hedge designation and recognised separately in a cost of hedging reserve within OCI.

Cash flow hedges

Derivatives used in currency cash flow hedges are mainly forward contracts and options, with swaps mainly used for commodity and interest rate hedging purposes. In respect to commodity hedges, the Group is also using risk component hedging to hedge highly probable forecast purchases of natural gas. The natural gas price is composed of API2 coal price index component, Dated Brent crude oil price component and local market index component. These purchases create natural gas price exposure that translates as API2 coal and Dated Brent crude oil risk components that can be hedged by using API2 coal and Dated Brent crude

oil linked swaps. Both of the risk components are separately identifiable and reliably measurable due to the pricing formula being specified in the natural gas purchase agreement.

In 2018, the group entered into a new floating-to-fixed cross-currency swap contract in China with a total nominal value of EUR 200 million. The cross-currency swap has been designated under cash flow hedge accounting to hedge the underlying foreign currency and interest rate risks of Euro denominated floating-rate debt in China. The hedge will mature in 2023.

The unrealised gains and losses related to cash flow hedges are expected to be recycled through the Income Statement within one to three years with the longest hedging contract maturing in 2027 (2027), however the majority are expected to mature in 2019. Cash flow hedging reserve and net investment hedges in equity are presented in more detail in the following table.

Breakdown of cash flow hedging reserve and net investment hedges in equity

	At 31 December 2018		At 31 December 2017	
EUR million	**Unrealised gains and losses in hedging reserve, net of taxes**	**Unrealised and realised gains and losses in CTA, net of taxes**	**Unrealised gains and losses in hedging reserve, net of taxes**	**Unrealised and realised gains and losses in CTA, net of taxes**
Foreign exchange risk - operational cash flow hedging	-17	0	18	0
Foreign exchange risk - net investment hedges	0	20	0	31
Commodity price risk - commodity swaps	25	0	1	0
Interest rate risk - interest rate swaps	-5	0	-4	0
Interest rate and foreign exchange risk - cross-currency swaps	-10	0	0	0
Cost of hedging reserve	-2	0	0	0
Total	**-9**	**20**	**15**	**32**

Equity accounted investments

Associate companies record hedges and pensions-related amounts directly in equity, and the Group also records its share of these amounts in equity in the "OCI of Equity Accounted Investments" classification.

OCI equity accounted investments

	Year Ended 31 December	
EUR million	**2018**	**2017**
Bergvik Skog AB	-11	-14
Total	**-11**	**-14**

Fair values of derivatives

Total foreign exchange gains and losses in the income statement excluding hedges

	Year Ended 31 December	
EUR million	**2018**	**2017**
Sales	24	-23
Costs and expenses	-16	1
Borrowings and deposits	-55	10
Total	**-46**	**-12**

Hedge gains and losses in operating profit

	Year Ended 31 December	
EUR million	**2018**	**2017**
Cash Flow Hedge Accounted Derivatives		
Currency hedges	-28	9
Commodity hedges	-21	-44
Total	**-48**	**-35**
As adjustments to Sales	-76	-39
As adjustments to Materials and services	28	4
Realised from OCI through Income Statement	**-48**	**-35**
Currency hedges ineffectiveness	0	-2
Net Losses from Cash Flow Hedges	**-48**	**-37**
Non-hedge Accounted Derivatives		
Currency hedges	-16	15
Net Losses/Gains on Non-hedge Accounted Derivatives	**-16**	**15**
Net Hedge Losses in Operating Profit	**-65**	**-22**

During 2018 there were no cash flow hedge ineffectiveness recorded in operating profit. In 2017 the Group ceased hedge accounting for one of its subsidiaries because the forecasted future transactions were no longer expected to occur. This resulted in a loss of EUR 2 million being booked as operating profit and the loss being presented in the above table as ineffectiveness from cash flow hedges.

Hedge gains and losses in financial items

	Year Ended 31 December	
EUR million	**2018**	**2017**
Cash Flow Hedge Accounted Derivatives		
Currency hedges ineffectiveness	-1	0
Interest rate derivatives ineffectiveness	-3	0
Net Losses from Cash Flow Hedges	**-4**	**0**
Non-hedge Accounted Derivatives		
Net gains on currency derivatives	22	24
Net Gains on Non-Hedge Accounted Derivatives	**22**	**24**
Net Gains in Financial Items	**18**	**24**

Nominal and fair values of derivative instruments

	As at 31 December							
EUR million	**Nominal values**	**Positive fair values**	**Negative fair values**	**Net fair values**	**Nominal values**	**Positive fair values**	**Negative fair values**	**Net fair values**
	2018				**2017**			
Currency derivatives								
Forwards: Operational cash flow hedging	1 267	7	-15	-7	803	19	-5	14
Options: Operational cash flow hedging	1 375	6	-24	-18	1 362	15	-9	6
Total cash flow hedge accounted	**2 642**	**13**	**-38**	**-25**	**2 165**	**34**	**-14**	**20**
Forwards: Trade and loan receivables hedging	686	4	-6	-2	879	15	-3	12
Total non-hedge accounted	**686**	**4**	**-6**	**-2**	**879**	**15**	**-3**	**12**
Total currency derivatives	**3 328**	**17**	**-44**	**-27**	**3 044**	**49**	**-17**	**32**
Commodity derivatives								
Pulp swaps: Sales hedging	0	0	0	0	188	1	-13	-12
Electricity swaps: Costs hedging	67	35	0	35	79	11	0	11
Oil swaps: Costs hedging	15	0	-2	-2	8	2	0	2
Coal swaps: Costs hedging	5	0	0	0	0	0	0	0
Total cash flow hedge accounted	**87**	**35**	**-2**	**33**	**275**	**14**	**-13**	**1**
Electricity swaps: Closed contracts	2	1	-1	0	7	1	-1	0
Total non-hedge accounted	**2**	**1**	**-1**	**0**	**7**	**1**	**-1**	**0**
Total commodity derivatives	**89**	**37**	**-4**	**33**	**282**	**15**	**-14**	**1**
Interest rate derivatives								
Interest rate swaps: Financial expenses hedging	187	1	-6	-5	192	1	-5	-4
Cross-currency swaps: Financial expenses hedging	200	0	-16	-16	0	0	0	0
Total cash flow hedge accounted	**387**	**1**	**-23**	**-22**	**192**	**1**	**-5**	**-4**
Total interest rate derivatives	**387**	**1**	**-23**	**-22**	**192**	**1**	**-5**	**-4**
Total cash flow hedge accounted	**3 116**	**49**	**-63**	**-14**	**2 632**	**49**	**-32**	**17**
Total non-hedge accounted	**688**	**5**	**-7**	**-2**	**886**	**16**	**-4**	**12**
Total derivatives	**3 804**	**54**	**-70**	**-16**	**3 518**	**65**	**-36**	**29**

Positive and negative fair values of financial instruments are shown under Interest-bearing Receivables and Liabilities.

The presented fair values in the previous table include accrued interest and option premiums.

Changes in fair values of hedged items and hedging instruments

EUR million	Change in value of hedged item to determine hedge effectiveness	Change in value of outstanding hedging instruments	Ineffectiveness
Foreign exchange risk - forward contracts[1]	20	-21	-1
Foreign exchange risk - options	23	-23	0
Foreign exchange risk - net investment hedges	14	-14	0
Commodity price risk - commodity swaps	-32	32	0
Interest rate risk - interest rate swaps	1	-1	0
Interest rate and foreign exchange risk - cross-currency swaps[1]	12	-15	-3

[1] Ineffectiveness booked in Net financial items.

Financial impact of netting for intruments subject to an enforceable master netting agreement 2018

		Not offset in the Statement of Financial Position		
EUR million	Gross amount of recognised financial instruments	Related liabilities (-) or assets (+) subject to Master Netting Agreements	Collateral received (-) or given (+)	Net Exposure
Derivative assets	54	-24	0	30
Derivative liabilities	-70	24	0	-46

Financial impact of netting for intruments subject to an enforceable master netting agreement 2017

		Not offset in the Statement of Financial Position		
EUR million	Gross amount of recognised financial instruments	Related liabilities (-) or assets (+) subject to Master Netting Agreements	Collateral received (-) or given (+)	Net Exposure
Derivative assets	62	-37	0	25
Derivative liabilities	-37	37	0	0

The Group enters into derivative transactions under master netting agreements agreed with each counterparty. In case of an unlikely credit event, such as default, all outstanding transactions under the agreements are terminated and only a single net amount per counterparty is payable for settlement of all transactions. The agreements do not meet the criteria for offsetting in the Statement of financial position because offsetting is enforceable only on the occurrence of certain future events.

Note 28 Cumulative translation adjustment and equity hedging

	Year Ended 31 December	
EUR million	2018	2017
At 1 January		
CTA on net investment in non-euro foreign entities	-319	-31
Hedging thereof	41	1
Net currency losses/gains in equity	-278	-30
Tax on hedging	-10	-2
	-288	**-32**
CTA Movement for the Year Reported in OCI		
Restatement of opening non-euro denominated equity	-70	-281
Difference in Income Statement translation	1	-5
Internal equity injections and dividends	6	-1
Other	-1	0
CTA release through the Income Statement	27	-1
	-36	**-288**
Hedging of Net Investment for the Year Reported in OCI		
Hedging result	-14	40
Taxes	3	-8
	-11	**32**
At 31 December		
CTA on net investment in non-euro foreign entities	-355	-319
Hedging thereof (see below)	27	41
Cumulative net currency losses in equity	-328	-278
Tax on hedging	-7	-10
Net CTA in Equity	**-335**	**-288**
Hedging of Net Investment in Foreign Entities		
Hedging	27	41
Tax on hedging	-7	-10
Net Hedging Result in Equity	**20**	**31**
Realised gains	45	45
Unrealised gains/losses	-25	-14
Total Gains	**20**	**31**

The group is currently hedging only its equity exposure to the US dollar. The main movements in CTA in 2018 were a gain of EUR 61 (loss of EUR 162) million related to the US dollar, a loss of EUR 53 (EUR 38) million related to the Swedish crown, a loss of EUR 16 (EUR 10) million related to the Russian ruble and a loss of EUR 14 (EUR 63) million related to the Brazilian real. The most significant accumulated CTA balances are in Sweden, amounting to a loss of EUR 286 (EUR 234) million, in Brazil, amounting to a loss of EUR 204 (EUR 191) million, in the US dollar area, amounting to a gain of EUR 139 (EUR 79) million and in Russia, amounting to a loss of EUR 71 (EUR 55) million.

The release of cumulative translation adjustments to the Income Statement amounted to a loss of EUR 27 (gain of EUR 1) million in 2018 and was mainly related to the disposal of wood supply company in Rio Grande do Sul in Brazil.

Amounts recognized in the statement of financial position - CTA and equity hedging

	As at 31 December					
	Cumulative Translation Adjustments (CTA)		Equity Hedges		Net CTA in the Statement of Financial Position	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Brazil	-204	-191	0	0	-204	-191
China	65	69	0	0	65	69
Czech Republic	32	33	-9	-9	23	24
Poland	-28	-19	17	17	-11	-2
Russia	-71	-55	0	0	-71	-55
Sweden	-286	-234	50	50	-236	-184
Uruguay	135	80	-31	-17	105	63
USA	4	-1	0	0	4	-1
Others	-1	-1	0	0	-1	-1
CTA before Tax	**-355**	**-319**	**27**	**41**	**-328**	**-278**
Taxes		0	-7	-10	-7	-10
Net CTA in Equity	**-355**	**-319**	**20**	**31**	**-335**	**-288**

Amounts recognized in the statement of other comprehensive income - CTA and equity hedging

	As at 31 December					
	Cumulative Translation Adjustments (CTA)		Equity Hedges		Net CTA in the Statement of Financial Position	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Brazil	-14	-63	0	0	-14	-63
China	-4	-27	0	0	-4	-27
Czech Republic	-1	7	0	0	-1	7
Poland	-10	15	0	0	-10	15
Russia	-16	-10	0	0	-16	-10
Sweden	-53	-38	0	0	-53	-38
Uruguay	56	-147	-14	40	42	-107
USA	5	-15	0	0	5	-15
Others	0	-10	0	0	0	-10
CTA before Tax	**-36**	**-288**	**-14**	**40**	**-50**	**-248**
Taxes	0	0	3	-8	3	-8
Amounts recognised in OCI	**-36**	**-288**	**-11**	**32**	**-47**	**-256**

Hedging of net investment in foreign entities

Group policy for translation risk exposure is to minimise this by funding assets whenever possible and economically viable in the same currency, but if matching of the assets and liabilities in the same currency is not possible hedging of the remaining translation risk may take place. The gains and losses net of tax on all financial liabilities and instruments used for hedging purposes are offset in CTA against the respective currency movements arising from the restatement of the net investments at current exchange rates on the reporting date; the net amount of losses included in CTA during the period as shown in the previous table amounted to EUR 11 (gains of EUR 32) million.

Hedging instruments and unrealised hedge losses

	As at 31 December					
	Nominal amount (Currency)		Nominal amount (EUR)		Unrealised Losses (EUR)	
EUR million	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Borrowings						
USD area	350	350	306	292	-25	-14
Total Hedging			**306**	**292**	**-25**	**-14**

Note 29 Commitments and contingencies

Accounting principles

Guarantees

The guarantees entered into with financial institutions and other credit guarantors generally oblige the group to make payment in the event of default by the borrower. The guarantees have off-Balance-Sheet credit risk representing the accounting loss that would be recognised at the reporting date if the counterparties fail to perform completely as contracted. The credit risk amounts are equal to the contract sums assuming the amounts are not paid in full and are irrecoverable from other parties.

Operating Leases

Payments made under operating leases are expensed on a straight-line basis over the lease periods. When an operating lease is terminated before the expiry of the lease period, any obligatory payment to the lessor by way of penalty is recognised as an expense in the period in which termination takes place. Lease termination benefits are recognised on a discounted basis.

Commitments

	As at 31 December	
EUR million	**2018**	**2017**
On Own Behalf		
Mortgages	2	2
Operating leases in next 12 months	100	81
Operating leases after next 12 months	631	644
Other commitments	6	6
On Behalf of Equity Accounted Investments		
Guarantees	4	4
On Behalf of Others		
Guarantees	23	26
Other commitments	13	0
Total	**779**	**763**
Mortgages	2	2
Guarantees	27	30
Operating leases	731	725
Other commitments	19	6
Total	**779**	**763**

In 2018, the Group's commitments amounted to EUR 779 (EUR 763) million. In addition, the parent company Stora Enso Oyj has guaranteed the liabilities of many of its subsidiaries and joint operations up to EUR 1 962 (EUR 2 073) million as of 31 December 2018.

The Group leases properties, land areas, vessels and other logistic equipment and machinery under various non-cancellable operating leases, some of which contain renewal options. There were no leases deemed onerous at the end of 2018 and 2017. The future cost for contracts exceeding one year and for non-cancellable operating leasing contracts are:

Repayment schedule of operating lease commitments

	As at 31 December	
EUR million	**2018**	**2017**
Less than 1 year	100	81
1–2 years	92	71
2–3 years	78	63
3–4 years	57	54
4–5 years	48	38
Over 5 years	356	418
Total	**731**	**725**

The Group has rental commitments for up to 50 years, with the option to terminate them in 2034, on approximately 82 000 (84 000) hectares of land contracted to date in China, as well as being obliged to pay for the standing trees on land it has contracted to rent. Future land rental payments reported under operating leases are estimated at EUR 371 (EUR 486) million for the plantations.

Capital Commitments

	As at 31 December	
EUR million	**2018**	**2017**
Total	**111**	**152**

Capital expenditure commitments are not recognised in the balance sheet and these include the Group's share of direct capital expenditure contracts in joint operations. Commitments in relation to capital expenditure mainly relate to ongoing projects at Enocell and Imatra Mills in Finland, Skutskär and Gruvön Mills in Sweden and Maxau Mill in Germany.

Contingent liabilities

Stora Enso has undertaken significant restructuring actions in recent years which have included the divestment of companies, sale of assets and mill closures. These transactions include a risk of possible environmental or other obligations the existence of which would be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group.

Stora Enso is party to legal proceedings that arise in the ordinary course of business and which primarily involve claims arising out of commercial law. The management does not consider that liabilities related to such proceedings before insurance recoveries, if any, are likely to be material to the Group's financial condition or results of operations.

Legal proceedings in Latin America

Veracel

On 11 July 2008, Stora Enso announced that a federal judge in Brazil had issued a decision claiming that the permits issued by the State of Bahia for the operations of Stora Enso's joint operations company Veracel were not valid. The judge also ordered Veracel to take certain actions, including reforestation with native trees on part of Veracel's plantations and a possible fine of BRL 20 (EUR 5) million. Veracel disputes the decision and has filed an appeal against it. Veracel operates in full compliance with all Brazilian laws and has obtained all the necessary environmental and operating licences for its industrial and forestry activities from the relevant authorities. In November 2008, a Federal Court suspended the effects of the decision. No provisions have been recorded in Veracel's or Stora Enso's accounts for the reforestation or the possible fine.

In June 2017, Veracel received a tax infringement note referring to year 2012 with a total amount of BRL 224 (EUR 50) million including interest and fines. The dispute is limited to fiscal year 2012 for which the tax authority applied another transfer pricing method due to a different interpretation of a transition rule. Veracel acts in full compliance with Brazilian transfer pricing law and has filed an administrative defense against the tax note in July 2017. In June 2018 Veracel received a positive decision from Federal Revenue Judgement, which has been confirmed by the Administrative Council For Fiscal Resources in January 2019. The total exposure at year end is BRL 241 (EUR 54) million considering interest until 31 December 2018. Stora Enso's share of the exposure is BRL 120 (EUR 27) million. No provisions have been recorded in Veracel's or Stora Enso's accounts for this tax dispute.

The tax authority has claimed that part of the PIS (social integration programme) and COFINS (contribution for the financing of social security) paid by Veracel on the purchase of raw materials and services since 2006 was not eligible for tax credit. Stora Enso and Veracel consider the claim unjustified and no provisions have been made in Stora Enso's or Veracel's accounts for this matter. The dispute is still pending.

Legal proceedings in Finland

Roundwood claim

In December 2009, the Finnish Market Court fined Stora Enso for competition law infringements in the market for roundwood in Finland from 1997 to 2004. Stora Enso did not appeal against the ruling. In March 2011, Metsähallitus of Finland initiated legal proceedings against Stora Enso, UPM and Metsäliitto claiming compensation for damage allegedly suffered due to the competition infringement. In its judgement rendered in June 2016, the Helsinki District Court dismissed Metsähallitus' claim for damages against Stora Enso, UPM and Metsäliitto. Metsähallitus appealed against the District Court's judgment to the Helsinki Court of Appeal, which rendered its judgement in the matter in May 2018. In its judgement, the Court of Appeal dismissed Metsähallitus' appeal and upheld the District Court's judgement. The total amount of Metsähallitus' claim jointly and severally against Stora Enso, UPM and Metsäliitto in the Court of Appeal was approximately EUR 125 million and the secondary claim against Stora Enso was approximately EUR 68 million. Metsähallitus applied for a leave of appeal from the Supreme Court. The Supreme Court decided on 29 January 2019 that the application to appeal is denied. This concludes the case without Stora Enso having any payment obligation towards Metsähallitus. Further the entire round woodclaim case can be now considered closed without any material financial effects on Stora Enso. The quarterly reporting will discontinue.

Legal proceedings in Sweden

Insurance claim

In July and August 2016, six Swedish insurance companies filed lawsuits in the Environmental Court and the District Court of Falun against Stora Enso, due to damage caused by the forest fire in Västmanland, Sweden, in 2014. The claimed amount is approximately SEK 300 (EUR 30) million. Stora Enso denies liability. So far the Environmental Court and thereafter the Environmental Court of Appeal has found that the Environmental code is not applicable on damage caused by fire.

Company fine

In January 2018, a Swedish prosecutor filed a lawsuit against Stora Enso and its supplier, due to the forest fire in Västmanland, Sweden in 2014, claiming a company fine of SEK 5 million each. Both Stora Enso and the supplier have disputed the claim.

Note 30 Principal subsidiaries and joint operations

The following is a list of the Company's fifty principal operating subsidiary undertakings ranked by external sales. These companies along with the parent account for 99% (98%) of Group external sales. The principal country in which each subsidiary operates is the country of incorporation. The group's effective interest in the undertakings is 100% except where indicated, and is held in each case by a subsidiary undertaking except for those companies marked with "+" which are held directly by the parent company. Subsidiaries operating outside the euro area are indicated by "◊".

Subsidiary companies (Ranked by external sales)

		Country	Sales %	Consumer Board	Packaging Solutions	Biomaterials	Wood Products	Paper	Other
Stora Enso Oyj		**Finland**	**15.93**	•	•	•		•	•
Stora Enso Paper AB	◊	Sweden	7.52					•	
Stora Enso International Oy	+	Finland	7.17			•			
Stora Enso Oulu Oy		Finland	6.15					•	
Stora Enso Skoghall AB	◊	Sweden	5.99	•					
Stora Enso Veitsiluoto Oy		Finland	4.96					•	
Stora Enso Amsterdam B.V.		Netherlands	4.38			•		•	
Stora Enso Fors AB	◊	Sweden	3.38	•					
Stora Enso Skog AB	◊	Sweden	2.92						•
Stora Enso Poland S.A.	+/◊	Poland	2.87		•				
Stora Enso Wood Products GmbH		Austria	2.75				•		
Stora Enso (Guangxi) Packaging Company Ltd. (80.1%)	◊	China	2.57	•					
Stora Enso Maxau GmbH		Germany	2.56					•	
Stora Enso Langerbrugge NV		Belgium	2.38					•	
Stora Enso Publication Papers Oy Ltd		Finland	2.37					•	
Stora Enso Ingerois Oy	+	Finland	2.00	•					
Stora Enso Wood Products Oy Ltd	+	Finland	1.72				•		
Sydved AB (66.7%)	◊	Sweden	1.71						•
Stora Enso Sachsen GmbH		Germany	1.51					•	•
Stora Enso Timber AB	◊	Sweden	1.29				•		
Stora Enso Eesti AS	+	Estonia	1.27				•		
Stora Enso Narew Sp.z.o.o.	+/◊	Poland	1.20		•				
Stora Enso Australia Pty Ltd	◊	Australia	1.18				•		
OOO Stora Enso Packaging BB	◊	Russia	1.16		•				
Stora Enso Wood Products Zdirec s.r.o.	◊	Czech Republic	0.93				•		
Stora Enso Packaging AB	◊	Sweden	0.89		•				
Stora Enso WP Bad St. Leonhard GmbH		Austria	0.84				•		
Stora Enso Packaging Oy	+	Finland	0.83		•				
Dongguan Stora Enso Inpac Packaging Co. Ltd (90%)	◊	China	0.78		•				
Stora Enso Inpac Packaging Co. Ltd. (90%)	◊	China	0.74		•				
Stora Enso Huatai (Shandong) Paper Co Ltd (60%)	◊	China	0.73					•	

		Country	Sales %	Consumer Board	Packaging Solutions	Biomaterials	Wood Products	Paper	Other
Stora Enso Timber Deutschland GmbH		Germany	0.62				•		
Stora Enso Wood Products Sp.z.o.o.	◊	Poland	0.52				•		
Stora Enso Bioenergi AB	◊	Sweden	0.52						•
Stora Enso North American Sales, Inc.	+/◊	USA	0.51	•					
Stora Enso Wood Products Planá s.r.o.	◊	Czech Republic	0.49				•		
AS Stora Enso Latvija		Latvia	0.37				•		
Stora Enso Wood Products d.o.o. Koper		Slovenia	0.36				•		
Stora Enso Bois SAS		France	0.33				•		
UAB Stora Enso Lietuva		Lithuania	0.31				•		
Stora Enso AB	+/◊	Sweden	0.31						•
Guangxi Stora Enso Forestry Co Ltd (89.5%)	◊	China	0.26	•					
Stora Enso Timber DIY Products B.V.		Netherlands	0.25				•		
Stora Enso Timber UK Ltd	◊	UK	0.23				•		
Stora Enso Packaging UAB		Lithuania	0.19		•				
Stora Enso Packaging SIA		Latvia	0.16		•				
Stora Enso Paper GmbH		Germany	0.15					•	
Stora Enso (Guangxi)Forestry Company Ltd. (80.1%)	◊	China	0.15	•					
Stora Enso WP HV s.r.o.	◊	Czech Republic	0.13				•		
Stora Enso (HK) Ltd	+/◊	Hong Kong	0.13				•		
VLAR Papier NV		Belgium	0.13					•	

The following is a list of the Company's joint operations. The Company holds a 50% interest in joint operations and they are consolidated into the Group's financial statements. The countries operating outside the euro area are indicated by "◊". Sales of the joint operations occur via subsidiaries.

Joint operations

		Country	Consumer Board	Packaging Solutions	Biomaterials	Wood Products	Paper	Other
Montes del Plata (50%)	◊	Uruguay			•			
Veracel Celulose SA (50%)	◊	Brazil			•			

Note 31 Related party transactions

Balances and transactions between the Group and its subsidiaries and joint operations, which are classified as related parties, have been eliminated on consolidation and are not disclosed in this note.

The Group has classified Solidium Oy as a related party. It is entirely owned by the State of Finland, and owned 10.7% of Stora Enso shares and 27.3% of all votes on December 31, 2018. The group has applied an exemption as stated in IAS 24 paragraph 25 not to disclose transactions and outstanding balances with government-related entities.

The key management personnel of the Group are the members of the Group Leadership Team and the Board of Directors. The compensation of key management personnel is presented in Note 7 Board and executive remuneration.

In the ordinary course of business, the Group engages in transactions on commercial terms with equity accounted investments and other related parties that are not any more favourable than would be available to other third parties – with the exception of Veracel and Pohjolan Voima Oy (PVO). Stora Enso intends to continue with transactions on a similar basis with its equity accounted investments further details of which are shown in Note 13 Equity accounted investments.

The Group's principal subsidiary companies and joint operations are listed in Note 30 Principal subsidiaries and joint operations.

Energy

The Group holds a 15.6% interest in Pohjolan Voima Oy (PVO), a privately owned group of companies in the energy sector that produces electricity and heat for its shareholders in Finland. Each subsidiary of the PVO group has its own class of shares that entitle the shareholder to the energy produced in proportion to its ownership of that class of share. Stora Enso is the second-largest shareholder in PVO, being entitled to a capacity share of 469 MWe and Seppo Parvi, as Group representative, has been the Deputy Chairman of PVO's Board of Directors since 2015. Prices paid to PVO for electricity are based on production costs, which are generally lower than market prices and in 2018, amounted to EUR 36 (EUR 34) million.

Paper for recycling

The Group owns non-controlling interests in several paper recyclers from which paper for recycling is purchased at market prices.

Forest assets and wood procurement

The Group has a 41% interest in Tornator with the remaining 59% being held mainly by Finnish institutional investors. Stora Enso has long-term purchase contracts with the Tornator Group for approximately 2 million cubic metres of wood annually at market prices, and in 2018 purchases of 2 (2) million cubic metres came to EUR 78 (EUR 62) million.

In 2018, the Group has a 49.79% interest in Bergvik Skog with the remaining 50.21% held mainly by institutional investors. The Group has long-term supply contracts with Bergvik Skog under which Bergvik Skog sells some 5 million cubic metres of wood annually to Stora Enso at market prices. In 2018, these purchases of 5 (5) million cubic metres amounted to EUR 108 (EUR 106) million and Group sales to Bergvik Skog amounted to EUR 40 (EUR 39) million, mainly for forest management services.

Stora Enso has a significant land leasing contract with its non-controlling interest partner Guangxi Forestry Group Co. Ltd. in China. The leases paid during 2018 amounted to EUR 17 (EUR 16) million.

Stevedoring

The Group owns 34.4% of the shares of Steveco Oy, a Finnish company engaged in loading and unloading vessels. The other shareholders in Steveco are UPM-Kymmene, Finnlines, Ahlström Capital and Myllykoski. The stevedoring services are provided by Steveco at market prices and in 2018 amounted to EUR 24 (EUR 25) million.

Note 32 Earnings per share and equity per share

Accounting principles

Basic earnings per share, attributable to the owners of the parent company, are calculated by dividing the net profit attributable to shareholders 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. Diluted earnings per share are calculated by adjusting the weighted average number of ordinary shares plus the diluted effect of all potential dilutive ordinary shares dilutive such as shares from share-based payments.

Earnings per share

	Year Ended 31 December	
	2018	**2017**
Net profit for the period attributable to the owners of the parent, EUR million	1 013	625
Total comprehensive income attributable to the owners of the parent, EUR million	1 025	494
Weighted average number of A and R shares	788 619 987	788 619 987
Weighted average number of share awards	1 262 891	1 403 673
Weighted diluted number of shares	789 882 878	790 023 660
Basic Earnings per Share, EUR	**1.28**	**0.79**
Diluted Earnings per Share, EUR	**1.28**	**0.79**
Total Recognised Income and Expense per Share, EUR	**1.30**	**0.63**

Equity per share

	As at 31 December	
	2018	**2017**
Shareholders' equity, EUR million	6 714	6 008
Market value, EUR million	8 123	10 422
Number of A and R shares	788 619 987	788 619 987
Share awards	1 056 648	1 469 133
Diluted number of shares	789 676 635	790 089 120
Basic Shareholders' Equity per Share, EUR	**8.51**	**7.62**
Diluted Shareholders' Equity per Share, EUR	**8.50**	**7.61**
Dividend per Share Paid/Declared, EUR	**0.50**	**0.41**
Market Value per Share, EUR		
A shares	11.05	13.20
R shares	10.09	13.22

Extract from the Parent Company Stora Enso Oyj financial statements

Accounting principles

The Parent Company Financial Statements are prepared according to Generally Accepted Accounting Principles in Finland (Finnish GAAP). The main differences between the accounting policies of the Group and the Parent Company relate to:

Accounting of amortisation of capitalised goodwill
The valuation of certain financial assets and financial liabilities
Accounting of post-employment Defined Benefit Plans
The presentation and accounting of deferred tax
Accounting of equity incentive schemes
Accounting of financial leases.

Comparability of the information for the financial period
The company has changed its presentation of non-hedge accounted derivatives starting from 1st January 2018. As a result of the change, positive fair values of outstanding non-hedge accounted derivatives are now also presented in the balance sheet in accordance with IFRS 9 standard.
The positive fair values of such outstanding derivatives were previously presented as off-balance sheet items and only negative fair values for outstanding derivatives were presented in the balance sheet in accordance with prudence principle. At the end of 2017 the positive fair values of outstanding non-hedge accounted derivatives amounted to EUR 22.8 million and it has been recognised as an ending balance adjustment to parent company's short-term receivables and retained earnings for 2017.

Parent Company income statement

	Year Ended 31 December	
EUR million	**2018**	**2017**
Sales	2 776	2 913
Changes in inventories of finished goods and work in progress	25	-14
Production for own use	1	1
Other operating income	192	188
Materials and services	-1 926	-1 905
Personnel expenses	-224	-255
Depreciation and value adjustments	-159	-130
Other operating expenses	-471	-569
Operating Profit	**214**	**229**
Net financial items	1	146
Profit before Appropriations and Taxes	**215**	**375**
Appropriations	9	-10
Net Profit for the Period	**224**	**365**

Parent Company statement of financial position

Assets

	As at 31 December	
EUR million	**2018**	**2017**
Fixed Assets and Non-current Investments		
Intangible assets	90	75
Tangible assets	840	805
Shares in Group companies	6 199	6 139
Receivables from Group companies	1 520	1 486
Investments in Associated companies	39	40
Other investments	230	230
	8 918	**8 775**
Current Assets		
Inventories	326	247
Short-term receivables	555	570
Deposit Group companies	82	816
Deposit other companies	315	0
Cash and cash equivalents	471	375
	1 749	**2 008**
Total Assets	**10 667**	**10 784**

Equity and Liabilities

	As at 31 December	
EUR million	**2018**	**2017**
Share capital	1 342	1 342
Share premium	3 639	3 639
Fair value reserve	-10	1
Invested non-restricted equity fund	633	633
Retained earnings	627	585
Net profit for the period	223	365
	6 454	**6 565**
Appropriations	**200**	**209**
Provisions	**26**	**26**
Non-current Liabilities	**1 464**	**1 378**
Current Liabilities	**2 523**	**2 606**
Total Equity and Liabilities	**10 667**	**10 784**

Parent Company cash flow statement

	Year Ended 31 December	
EUR million	**2018**	**2017**
Cash Provided by Operating Activities		
Net profit for the period	223	365
Appropriations	-9	10
Depreciation and value adjustments	159	130
Unrealised foreign exchange gains and losses	6	52
Other non-cash items	-3	12
Financial income and expenses	-1	-146
Interest received	25	32
Interest paid net of amounts capitalised	-64	-105
Dividends received	76	201
Other financial items paid net	-35	37
Income taxes paid	-1	-1
Change in net working capital	-87	-13
Net Cash Provided by Operating Activities	**289**	**574**
Net Cash from Investing Activities		
Capital expenditure	-185	-203
Proceeds from sale of fixed assets	6	3
Purchases of other investments	0	-7
Investment in subsidiary shares	-61	-87
Proceeds from disposal of subsidiary shares	2	61
Proceeds from disposal of shares in other companies	1	2
Proceeds from long-term receivables net	6	-190
Net Cash Provided in Investing Activities	**-231**	**-421**
Cash Flow from Financing Activities		
Proceeds from (issue of) long-term liabilities	299	300
Proceeds from (payment of) long-term liabilities	-226	-662
Proceeds from (payment of) short-term borrowings net	-128	-546
Capital repayment / dividend per share paid/declared	-323	-292
Net Cash Used in Financing Activities	**-378**	**-1 200**
Net Increase (Decrease) in Cash and Cash Equivalents	**-321**	**-1 046**
Translation adjustment	-1	-7
Business transfers 1.5.	0	-16
Cash and cash equivalents at start of year	1 190	2 259
Cash and Cash Equivalents at Year End	**868**	**1 190**

The Board of Director's Proposal for the distribution of dividend

The Parent Company distributable shareholders' equity on 31 December 2018 amounted to EUR 1 473 289 418.75, including the profit for the period of EUR 223 340 113.24. The Board of Directors proposes to the Annual General Meeting of the Company that the distributable funds be used as follows:

Dividend of EUR 0.50 per share from the distributable shareholders' equity to be distributed on 788 619 987 shares, not to exceed	EUR 394 309 993.50
Remaining in distributable shareholders' equity	EUR 1 078 979 425.25
Distributable shareholders' equity on 31 December 2018, total	EUR 1 473 289 418.75

There have been no material changes in the Parent Company's financial position since 31 December 2018. The liquidity of the Parent Company remains good and the proposed dividend does not risk the solvency of the Company.

Helsinki, 31 January 2019

Jorma Eloranta
Chairman

Hans Stråberg
Vice Chairman

Anne Brunila

Elisabeth Fleuriot

Hock Goh

Christiane Kuehne

Antti Mäkinen

Richard Nilsson

Göran Sandberg

Karl-Henrik Sundström
CEO

Auditor's report

(Translation of the Finnish Original)

To the Annual General Meeting of Stora Enso Oyj

Report on the Audit of Financial Statements

Opinion

In our opinion

- the consolidated financial statements give a true and fair view of the group's financial position and 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 the financial statements in Finland and comply with statutory requirements.

Our opinion is consistent with the additional report to the Financial and Audit Committee.

What we have audited

We have audited the financial statements of Stora Enso Oyj (business identity code 1039050-8) for the year ended 31 December 2018. The financial statements comprise:

- the consolidated statement of financial position, income statement, statement of comprehensive income, statement of changes in equity, cash flows statement and notes, including a summary of significant accounting policies
- the parent company's statement of financial position, income statement, cash flow statement and notes.

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

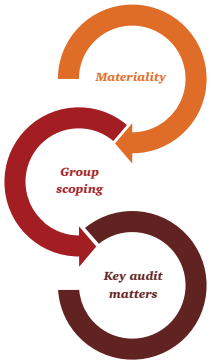
Independence

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.

To the best of our knowledge and belief, the non-audit services that we have provided to the parent company and to the group companies are in accordance with the applicable law and regulations in Finland and we have not provided non-audit services that are prohibited under Article 5(1) of Regulation (EU) No 537/2014. The non-audit services that we have provided are disclosed in note 5 to the Financial Statements.

Our Audit Approach

Overview



- We have applied an overall group materiality of EUR 52 million.
- We performed audit procedures at 27 reporting components in 11 countries that are considered significant based on our overall risk assessment and materiality.
- Valuation of biological assets
- Provisions and contingent liabilities

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we considered where management made subjective judgements; for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

Materiality

The scope of our audit was influenced by our application of materiality. An audit is designed to obtain reasonable assurance whether the financial statements are free from material misstatement. Misstatements may arise due to fraud or error. They are considered material if individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Based on our professional judgement, we determined certain quantitative thresholds for materiality, including the overall group materiality for the consolidated financial statements as set out in the table below. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures and to evaluate the effect of misstatements on the financial statements as a whole.

Overall group materiality	EUR 52 million
How we determined it	Based on profit before tax
Rationale for the materiality benchmark applied	We chose profit before tax as the benchmark because, in our view, it is the benchmark against which the performance of the group is commonly measured by users, and is a generally accepted benchmark.

How we tailored our group audit scope

We tailored the scope of our audit, taking into account the structure of the group, the accounting processes and controls, and the industry in which the group operates.

The Group operates in a significant number of legal entities or "reporting components" globally. We determined the nature, timing and extent of audit work that needed to be performed at reporting components by us, as the group engagement team, or component auditors operating under our instruction. Where the work was performed by component auditors, we issued specific instructions to those auditors which included our risk analysis, materiality and global audit approach. We performed audit procedures at 27 reporting components in 11 countries that are considered significant based on our overall risk assessment and materiality. We have considered that the remaining reporting components do not present a reasonable risk of material misstatement for consolidated financial statements and thus our procedures related to these reporting components have been limited to targeted audit procedures over significant balances and to analytical procedures performed at group level.

By performing the procedures above at reporting components, combined with additional procedures at the group level, we have obtained sufficient and appropriate evidence regarding the financial information of the group as a whole to provide a basis for our opinion on the consolidated financial statements.

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.

As in all of our audits, we also addressed the risk of management override of internal controls, including among other matters consideration of whether there was evidence of bias that represented a risk of material misstatement due to fraud.

Key audit matter in the audit of the group	How our audit addressed the key audit matter
Valuation of Biological Assets Refer to Note 1, Note 2 and Note 12 in the consolidated financial statements for the related disclosures The fair value of group's biological assets owned through subsidiaries, joint operations and associated companies amounts to EUR 3 327 million as of December 31, 2018. The value of biological assets is measured at fair value less costs to sell. The fair value is determined using discounted cash flows based on sustainable forest management plans taking into account the growth potential of one cycle. The one cycle varies depending on the geographic location and species. Determining the discounted cash flows requires estimates of growth, harvest, sales price and costs. Due to the level of judgment involved in the valuation of biological assets, complexity of the governance structure as well as the significance of biological assets to the Group's financial position, this is considered to be a key audit matter.	We obtained an understanding of management's biological asset valuation process, evaluated the design and tested the operating effectiveness of internal controls related to directly and indirectly owned biological assets. Our audit procedures over valuation of directly owned biological asset included: • Evaluation of the methodology adopted by management for the valuation; • Testing the mathematical accuracy of the model used for valuation; • Assessment of the discount rates applied in the valuation; • Assessment of the other key valuation assumptions; and • Validation of key inputs and data used in the valuation model including sales price assumptions, growth assumptions and cost assumptions. We involved valuation specialists in the audit work over valuation of directly owned biological assets. Related to indirectly owned biological assets we have communicated with the auditors of the four largest associated companies and joint operations. As part of the communication, among other things, we have evaluated the key audit procedures and audit conclusions performed related to valuation of biological assets.
Provisions and contingent liabilities Refer to Note 2, Note 22 and Note 29 in the consolidated financial statements for the related disclosures As of 31 December 2018 the Group had environmental, restructuring and other provisions totaling EUR 117 million. In addition, the Group has disclosed significant open legal cases and other contingent liabilities in Note 29. The assessment of the existence of the present legal or constructive obligation, the analysis of the probability of the outflow of future economic benefits, and the analysis of a reliable estimate, require management's judgement to ensure appropriate accounting or disclosures. Due to the level of judgement relating to recognition, valuation and presentation of provisions and contingent liabilities, this is considered to be a key audit matter.	We obtained an understanding of management's process to identify new obligations and changes in existing obligations for compliance with group policy and IAS 37 Provisions, Contingent Liabilities and Contingent Assets requirements. We analysed significant changes in material provisions from prior periods and obtained a detailed understanding of these changes and assumptions applied. Our audit procedures related to material provisions recognized included: • Assessment of the recognition criteria for the liability; • Evaluation of the methodology adopted by management for the measurement of the liability; • Testing of the mathematical accuracy of the measurement calculation; • Assessment of the discount rates applied in the measurement; and • Assessment of the other key measurement assumptions and inputs. We obtained legal letters on the main outstanding legal cases. We reviewed minutes of the board meetings including sub committees. We assessed the appropriateness of the presentation of the most significant contingent liabilities in the consolidated financial statements.

We have no key audit matters to report with respect to our audit of the parent company financial statements.

There are no significant risks of material misstatement referred to in Article 10(2c) of Regulation (EU) No 537/2014 with respect to the consolidated financial statements or the parent company financial statements.

Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director 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 Managing Director 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 Managing Director are responsible for assessing the parent company's and the group's ability to continue as a 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 to cease operations, or there is no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the 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 these 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 Managing Director's 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 company 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 to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with 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

Appointment

We were first appointed as auditors by the annual general meeting on 28 March 2018.

Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises the report of the Board of Directors.

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 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. Our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion

- the information in the report of the Board of Directors is consistent with the information in the financial statements
- the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement of the report of the Board of Directors, we are required to report that fact. We have nothing to report in this regard.

Other Statements

We support the proposal that the financial statements are adopted. The proposal by the Board of Directors regarding the distribution of profits is in compliance with the Limited Liability Companies Act. We support that the Board of Directors and the Managing Director of the parent company should be discharged from liability for the financial period audited by us.

Helsinki, 13 February 2019

PricewaterhouseCoopers Oy
Authorised Public Accountants

Samuli Perälä
Authorised Public Accountant (KHT)

Stora Enso in capital markets

Stora Enso ensures that all material information that has an impact on Stora Enso's share price is simultaneously available to the general public and financial community in order to ensure the right share price level in relation to the company's history, assets and future prospects. In its engagement with the capital markets, Stora Enso's Investor Relations aims to support the brand with accurate, consistent and credible financial communications.

Shares and shareholders

Shares and voting rights

The shares of Stora Enso Oyj (hereafter the "Company" or "Stora Enso") are divided into A and R shares, which entitle holders to the same dividend but different voting rights. Each A share and each ten R shares carry one vote at a shareholders' meeting. However, each shareholder has at least one vote.

On 31 December 2018, Stora Enso had 176 312 672 A shares and 612 307 315 R shares in issue, of which the Company held no A shares or R shares. The total number of Stora Enso shares in issue was 788 619 987 and the total number of votes was 237 543 403.

Share listings

Stora Enso shares are listed on the Nasdaq Helsinki and the Nasdaq Stockholm. Stora Enso shares are quoted in Helsinki in euros (EUR) and in Stockholm in Swedish crowns (SEK).

American Depositary Receipts (ADRs)

Stora Enso has a sponsored Level I American Depositary Receipts (ADR) facility. Stora Enso ADRs are traded over-the-counter (OTC) in the USA. The ratio between Stora Enso ADRs and R shares is 1:1, i.e. one ADR represents one Stora Enso R share. Citibank, N.A. acts as the depositary bank for the Stora Enso ADR programme. The trading symbol is SEOAY and the CUSIP number is 86210M106.

Share registers

The Company's shares are entered in the Book-Entry Securities System maintained by Euroclear Finland Oy, which also maintains the official share register of Stora Enso Oyj.

On 31 December 2018, 87 765 967 of the Company's shares were registered in Euroclear Sweden AB and 16 130 512 of the Company's R shares were registered in ADR form in Citibank, N.A.

Distribution by book-entry system, 31 December 2018

Number of shares	Total	A shares	R shares
Euroclear Finland Oy	684 723 508	165 274 381	519 449 127
Euroclear Sweden AB[1]	87 765 967	11 038 291	76 727 676
Citi administered ADRs[1]	16 130 512	-	16 130 512
Total	**788 619 987**	**176 312 672**	**612 307 315**

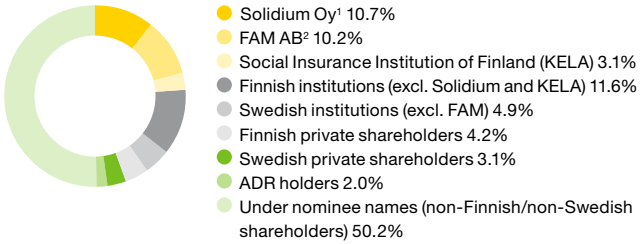
[1] Shares registered in Euroclear Sweden and ADRs are both nominee registered in Euroclear Finland.

Ownership distribution, 31 December 2018

	% of shares	% of votes	% of shareholders
Solidium Oy[1]	10.7%	27.3%	0.0%
FAM AB[2]	10.2%	27.3%	0.0%
Social Insurance Institution of Finland (KELA)	3.1%	10.1%	0.0%
Finnish institutions (excl. Solidium and KELA)	11.6%	8.6%	2.9%
Swedish institutions (excl. FAM)	4.9%	4.6%	1.4%
Finnish private shareholders	4.2%	2.5%	46.9%
Swedish private shareholders	3.1%	2.2%	46.6%
ADR holders	2.0%	0.7%	1.3%
Under nominee names (non-Finnish/non-Swedish shareholders)	50.2%	16.7%	0.9%

[1] Entirely owned by the Finnish state.
[2] As confirmed to Stora Enso.

Ownership distribution, % of shares held



[1] Entirely owned by the Finnish state.
[2] As confirmed to Stora Enso.

Share capital

On 31 December 2018, the Company's fully paid-up share capital entered in the Finnish Trade Register was EUR 1 342 million. The current accountable par of each issued share is EUR 1.70.

Conversion

According to the Articles of Association, holders of Stora Enso A shares may convert these into R shares at any time. The conversion of shares is voluntary. The conversions of a total of 79 648 A shares into R shares were recorded in the Finnish Trade Register during the year 2018.

Changes in share capital 2010–2018

	No. of A shares issued	No. of R shares issued	Total no. of shares	Share capital (EUR million)
Stora Enso Oyj, 1 Jan 2010	**177 152 481**	**612 386 018**	**789 538 499**	**1 342**
Conversion of A shares into R shares, Dec 2009–Nov 2010	-300	300	-	-
Stora Enso Oyj, 31 Dec 2010	**177 149 784**	**612 388 715**	**789 538 499**	**1 342**
Conversion of A shares into R shares, Dec 2010–Nov 2011	-1 012	1 012	-	-
Stora Enso Oyj, 31 Dec 2011	**177 148 772**	**612 389 727**	**789 538 499**	**1 342**
Conversion of A shares into R shares, Dec 2011–Nov 2012	-1 000	1 000	-	-
Stora Enso Oyj, 31 Dec 2012	**177 147 772**	**612 390 727**	**789 538 499**	**1 342**
Cancellation of shares owned by the Company, 15 May 2013		-918 512	788 619 987	-
Conversion of A shares into R shares, Dec 2012–Nov 2013	-51 568	51 568	-	-
Stora Enso Oyj, 31 Dec 2013	**177 096 204**	**611 523 783**	**788 619 987**	**1 342**
Conversion of A shares into R shares, Dec 2013–Nov 2014	-40 000	40 000	-	-
Stora Enso Oyj, 31 Dec 2014	**177 056 204**	**611 563 783**	**788 619 987**	**1 342**
Conversion of A shares into R shares, Dec 2014–Nov 2015	-524 114	524 114	-	-
Stora Enso Oyj, 31 Dec 2015	**176 532 090**	**612 087 897**	**788 619 987**	**1 342**
Conversion of A shares into R shares, Dec 2015–Nov 2016	-25 000	25 000	-	-
Stora Enso Oyj, 31 Dec 2016	**176 507 090**	**612 112 897**	**788 619 987**	**1 342**
Conversion of A shares into R shares, Dec 2016–Nov 2017	-114 770	114 770	-	-
Stora Enso Oyj, 31 Dec 2017	**176 392 320**	**612 227 667**	**788 619 987**	**1 342**
Conversion of A shares into R shares, Dec 2017–Nov 2018	-79 648	79 648	-	-
Stora Enso Oyj, 31 Dec 2018	**176 312 672**	**612 307 315**	**788 619 987**	**1 342**

For more historical data about the share capital, please visit storaenso.com/investors/shares.

Stora Enso's activities in capital markets during 2018

Stora Enso's Investor Relations activities cover equity and fixed-income markets to ensure full and fair valuation of the Company, continual access to funding sources and stable bond pricing. Investors and analysts are met on a regular basis in Europe and North America. In 2018, the IR team conducted several individual and group meetings with equity investors, whilst maintaining regular contact with equity research analysts at investment banks and brokerage firms. There were also meetings with fixed-income analysts and investors. In addition, Stora Enso arranged a webinar for ESG investors and analysts on its sustainability strategy and activities.

The Group arranged site visits to several mills in Finland, demo plant in Raceland, USA and innovation centre in Stockholm. Senior management and IR personnel also gave presentations at equity and fixed-income investor conferences in Scandinavia, Continental Europe, the United Kingdom and North America. During the year, the Group arranged seven large group presentations for private investor in Sweden.

Stora Enso arranged Capital Markets Day (CMD) on 7 November 2018 in Helsinki with the topic of value creation in the bioeconomy. At the event, the CEO, CFO and all the divisional heads gave their presentations, followed by break-out sessions providing an opportunity for further discussion with the management. In addition, there were several demo stations with subject matter experts showcasing innovations within the divisions, including Consumer Board prototypes, ECO RFID tag, Lineo lignin and virtual forest application. The CMD was followed by a Packaging Solutions site visits at Heinola and Lahti on the following day.

Shareholdings of other Group-related bodies at 31 December 2018

E.J. Ljungberg's Education Foundation owned 1 780 540 A shares and 2 336 224 R shares, E.J. Ljungberg's Foundation owned 39 534 A shares and 101 579 R shares, Mr. and Mrs. Ljungberg's Testamentary Foundation owned 5 093 A shares and 13 085 R shares and Bergslaget's Healthcare Foundation owned 626 269 A shares and 1 609 483 R shares.

Shareholders

At the end of 2018 the Company had approximately 94 269 registered shareholders, including about 45 822 Swedish shareholders and about 1 189 ADR holders. Each nominee register is entered in the share register as one shareholder.

The free float of shares excluding shareholders with holdings of more than 5% of shares or votes is approximately 599 million shares, which is 76% of the total number of shares issued. The largest shareholder in the Company is Solidium Oy based in Finland.

Major shareholders as at 31 December 2018

By voting power	A shares	R shares	% of shares	% of votes
1 Solidium Oy[1]	62 655 036	21 792 540	10.7%	27.3%
2 FAM AB[2]	63 123 386	17 000 000	10.2%	27.3%
3 Social Insurance Institution of Finland	23 825 086	973 982	3.1%	10.1%
4 Varma Mutual Pension Insurance Company	8 513 018	1 140 874	1.2%	3.6%
5 Ilmarinen Mutual Pension Insurance Company	3 352 286	17 778 548	2.7%	2.2%
6 MP-Bolagen i Vetlanda AB, (incl. Stiftelsen Seydlitz Småland)	4 818 000	1 390 000	0.8%	2.1%
7 Erik Johan Ljungberg's Education Foundation	1 780 540	2 336 224	0.5%	0.8%
8 Swedbank Robur Funds	-	10 674 443	1.4%	0.4%
9 Bergslaget's Healthcare Foundation	626 269	1 609 483	0.3%	0.3%
10 The State Pension Fund of Finland	-	7 200 000	0.9%	0.3%
11 Nordea Investment Funds	-	5 913 015	0.7%	0.2%
12 Keva (Local Government Pensions Institution)	-	5 251 101	0.7%	0.2%
13 Elo Mutual Pension Insurance Company	-	4 680 000	0.6%	0.2%
14 Unionen (Swedish trade union)	-	3 477 750	0.4%	0.1%
15 SEB Investment Management	-	3 157 906	0.4%	0.1%
Total	**168 693 621**	**104 375 866**	**34.6%**[3]	**75.2%**[3]
Nominee-registered shares	74 382 979	473 956 786	69.5%[3 4]	51.3%[3 4]

[1] Entirely owned by the Finnish State.
[2] As confirmed to Stora Enso.
[3] As some of the shareholdings on the list are nominee registered, the percentage figures do not add up to 100%.
[4] According to Euroclear Finland.

The list has been compiled by the Company on the basis of shareholder information obtained from Euroclear Finland, Euroclear Sweden and a database managed by Citibank, N.A (Citi). This information includes only directly registered holdings, thus certain holdings (which may be substantial) of shares held in nominee or brokerage accounts cannot be included. The list is therefore incomplete.

Share price performance and volumes

Helsinki
The Stora Enso R (STERV) share price decreased by 24% during 2018 (30% increase in 2017). Over the same period, the OMX Helsinki Index decreased by 8%, the OMX Helsinki Benchmark Index by 8% and the OMX Helsinki Basic Materials Index by 23%.

Stockholm
The Stora Enso R (STE R) share price decreased by 20% during 2018 (32% increase in 2017). Over the same period, the OMX Stockholm 30 Index decreased by 11% and the OMX Stockholm Basic Materials Index decreased by 25%.

OTC
Stora Enso ADR (SEOAY) share price decreased by 27% during 2018 (48% increase in 2017). Over the same period, the Standard & Poor's Global Timber and Forestry Index decreased by 20%.

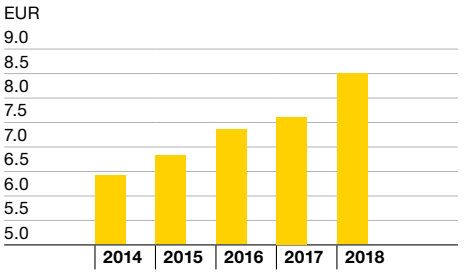
Share prices and volumes 2018

		Helsinki, EUR	Stockholm, SEK	OTC, USD
	A share	18.45	189.00	
High	R share	18.29	187.50	21.37
	A share	10.75	111.00	
Low	R share	9.92	102.00	11.33
	A share	11.05	116.00	
Closing, 31 Dec 2018	R share	10.09	103.40	11.53
	A share	-16%	-11%	
Change from previous year	R share	-24%	-20%	-27%
	A share	3 067 719	2 161 338	
Cumulative trading volume, no. of shares	R share	610 300 395	108 920 176	15 012 991

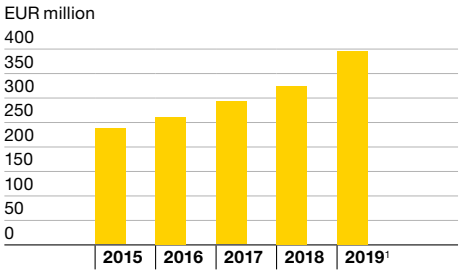
The volume-weighted average price of R shares over the year was EUR 14.61 in Helsinki (EUR 11.54 in 2017), SEK 145.49 in Stockholm (SEK 109.82 in 2017) and USD 17.46 on the OTC in the USA (USD 13.05 in 2017). The percentage of R shares traded was 60.7% (62.5% in 2017) in alternative trading venues, 32.7% (29.9% in 2017) in Helsinki, 5.8% (7.4% in 2017) in Stockholm and 0.1% (0.2% in 2017) on the OTC in the USA. Total market capitalisation on the OMX Helsinki at year-end was EUR 8.1 billion (EUR 10.4 billion).

Alternative trading venues
Stora Enso shares can be traded outside Nasdaq Helsinki and Nasdaq Stockholm, where the shares are listed. During 2018, the largest alternative trading venues included Cboe APA, Cboe BXE and Cboe CXE. The alternative trading venues' market share of monthly turnover in Stora Enso shares varied between 42% and 68%. Of the alternative trading venues, Cboe APA had the biggest share of the volume with 35% on an annual basis (Cboe BXE had the biggest share of the volume in 2017 with 29%).

Equity per share

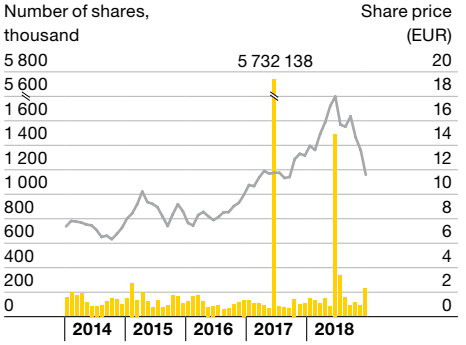


Distributed dividend

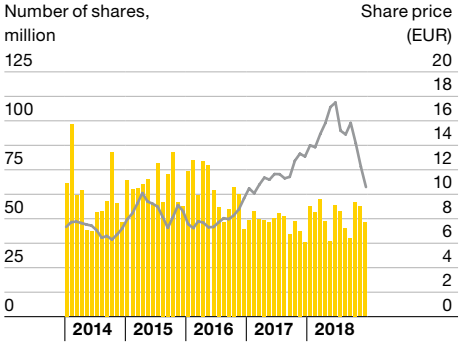


[1] Board of Director's proposal to the AGM for the distribution of dividend.

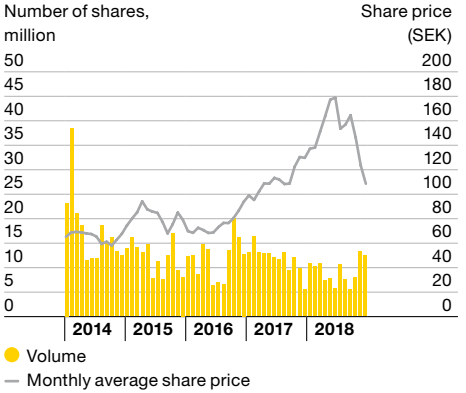
Helsinki, Stora Enso A



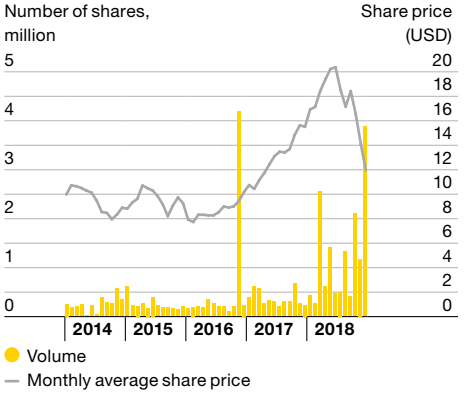
Helsinki, Stora Enso R



Stockholm, Stora Enso R



New York, Stora Enso ADR



Stora Enso is included in at least the following indices

OMX INDICES	STOXX INDICES	FTSE INDICES	MSCI INDICES	SUSTAINABILITY INDICES
OMX Helsinki	STOXX Global 1800	FTSE RAFI All-World 3000	MSCI Finland	CDP's Climate A list
OMX Helsinki 25	STOXX Europe 600	FTSE RAFI Developed 1000	MSCI Nordic countries	FTSE4 Good Index
OMX Helsinki Large Cap	STOXX Europe Mid 200	FTSE RAFI Developed Europe	MSCI Europe	STOXX® Global ESG Leaders Indicies
OMX Helsinki Benchmark	STOXX Nordic	FTSE RAFI Europe	MSCI Europe Materials	ECPI EMU Ethical Equity index
OMX Helsinki Basic Materials	EURO STOXX	FTSE RAFI Eurozone	MSCI World	ECPI World ESG Equity Index
OMX Helsinki Basic Resources	EURO STOXX Basic Materials	FTSE Finland 25 Index	MSCI World Mid Cap	OMX GES Sustainability Finland
OMX Helsinki Forestry & Paper	EURO STOXX Basic Resources			Ethibel Sustainability Index (ESI) Excellence Europe and PIONEER Investment Register
OMX Stockholm				Euronext Vigeo World, Europe and Eurozone 120
OMX Stockholm Benchmark				MSCI ESG indices
OMX Stockholm Large Cap				
OMX Stockholm Basic Materials				
OMX Stockholm Basic Resources				
OMX Stockholm Forestry & Paper				
OMX Nordic				
OMX Nordic Large Cap				
Nasdaq OMX Nordic Materials				
VINX 30				
VINX Basic Materials				
VINX Basic Resources				

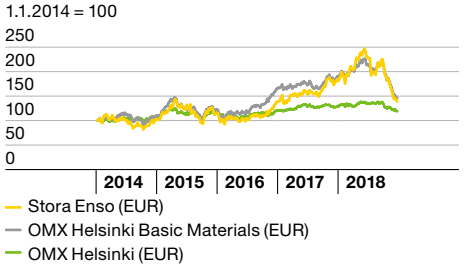
Read more about sustainability indeces in **Sustainability 2018**.

In 2016, Stora Enso shifted its strategy regarding the provision of ESG information to its stakeholders. The emphasis is to keep sustainability information widely available on the Group website to benefit and serve different stakeholders in equal manner. As a consequence, Stora Enso simultaneously reduces the number of sustainability index survey questionnaires in which it participates. The Group is targeting its participation in those questionnaires and enquiries that it has assessed to be the most material. The Company continues with this chosen strategy also in 2019.

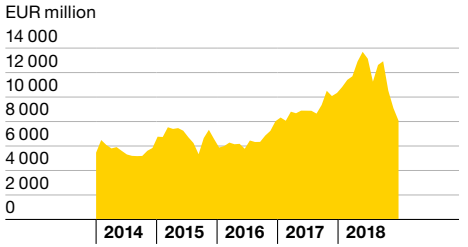
Trading codes and currencies

	Helsinki	Stockholm	OTC
A share	STEAV	STE A	-
R share	STERV	STE R	-
ADRs	-	-	SEOAY
Segment	Large Cap	Large Cap	-
Sector	Materials	Materials	-
Currency	EUR	SEK	USD
ISIN, A share	FI0009005953	FI0009007603	
ISIN, R share	FI0009005961	FI0009007611	
CUSIP	-	-	86210M106
Reuters			STERV.HE
Bloomberg			STERV FH Equity

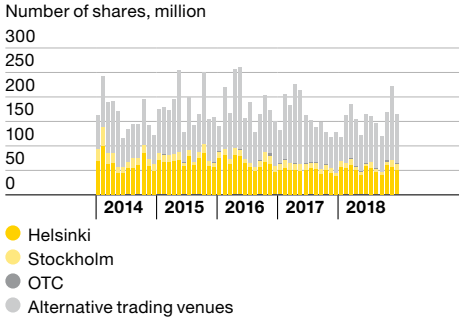
Stora Enso R Share vs Nasdaq Helsinki indices



Market capitalisation on Nasdaq Helsinki



Monthly R shares trading volumes



Key share data 2009–2018, total operations (for calculations see Calculation of Key figures)

According to Nasdaq Helsinki	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Earnings per share, EUR	1.28	0.79	0.59	1.02	0.13	-0.07	0.61	0.43	0.97	-1.12
– diluted, EUR	1.28	0.79	0.59	1.02	0.13	-0.07	0.61	0.43	0.97	-1.12
– excl. IAC, EUR	1.29	0.89	0.65	1.24	0.40	0.40	0.33	0.63	0.79	0.19
Equity/share, EUR	8.51	7.62	7.36	6.83	6.43	6.61	7.32	7.45	7.87	6.50
Dividend and distribution/share, EUR	0.50	0.41	0.37	0.33	0.30	0.30	0.30	0.30	0.25	0.20
Payout ratio, %	39	52	63	32	231	-429	49	70	26	-18
Dividend and distribution yield, %										
A share	4.5	3.1	3.56	3.9	4.0	4.1	5.3	5.9	3.2	3.4
R share	5.0	3.1	3.62	3.9	4.0	4.1	5.7	6.5	3.3	4.1
Price/earnings ratio (P/E), excl. IAC										
A share	8.6	14.8	16.00	6.8	18.7	18.3	17.3	8.0	10.0	30.8
R share	7.82	14.85	15.71	6.8	18.6	18.3	15.9	7.3	9.7	25.7
Share prices for the period, EUR										
A share										
– closing price	11.05	13.20	10.40	8.40	7.48	7.31	5.70	5.03	7.90	5.85
– average price	16.36	11.93	8.50	8.87	7.29	6.82	6.15	7.73	6.47	5.03
– high	18.45	13.79	10.45	11.01	8.35	7.49	7.15	9.80	7.94	7.55
– low	10.75	10.26	6.56	6.70	5.73	5.42	5.10	4.70	5.30	2.82
R share										
– closing price	10.09	13.22	10.21	8.39	7.44	7.30	5.25	4.63	7.69	4.88
– average price	14.61	11.54	7.88	8.70	7.16	5.79	5.08	6.28	6.03	4.27
– high	18.29	13.75	10.28	10.95	8.38	7.54	5.95	8.99	7.79	6.16
– low	9.92	9.70	6.50	6.58	5.71	4.76	4.14	3.73	4.15	2.65
Market capitalisation at year-end, EUR million										
A share	1 948	2 328	1 836	1 483	1 324	1 295	1 010	891	1 400	1 036
R share	6 175	8 094	6 250	5 135	4 547	4 464	3 212	2 835	4 709	2 989
Total	8 123	10 422	8 085	6 618	5 871	5 756	4 222	3 726	6 109	4 025
Number of shares at the end of period, (thousands)										
A share	176 313	176 392	176 507	176 532	177 056	177 096	177 148	177 149	177 150	177 150
R share	612 307	612 228	612 113	612 088	611 564	611 524	612 391	612 389	612 389	612 388
Total	788 620	788 620	788 620	788 620	788 620	788 620	789 538	789 538	789 538	789 538
Trading volume, (thousands)										
A share	3 068	6 768	1 254	1 641	1 553	1 656	831	1 402	1 887	2 536
% of total number of A shares	1.7	3.8	0.7	0.9	0.9	0.9	0.5	0.8	1.1	1.4
R share	610 300	571 717	765 122	798 507	731 067	828 401	977 746	1 237 898	1 194 245	1 297 668
% of total number of R shares	99.7	93.4	125	130.5	119.5	135.5	159.7	202.1	195.0	211.9
Average number of shares (thousands)										
basic	788 620	788 620	788 620	788 620	788 620	788 620	788 620	788 620	788 619	788 620
diluted	789 883	790 024	789 888	789 809	789 210	788 620	788 620	788 620	788 619	788 620

[1] Board of Directors' proposal to the AGM for distribution of dividend.
IAC = Items affecting comparability

Read more about incentive programmes in Note 21 and management interests in Note 7.

Debt investors

Funding strategy

Stora Enso's funding strategy is based on the Group's financial targets. Stora Enso should have access to sufficient and competitively priced funding at any time to be able to pursue its strategy and achieve its financial targets. Stora Enso's debt structure is focused on the capital markets, whereas banks are utilised primarily to provide back-up facilities. Stora Enso strives to build confidence and a track record with fixed-income investors by being informative and transparent.

Funding is obtained in the currencies of the Group's investments and assets (primarily USD, EUR, SEK and CNY). Commercial paper markets are used for short-term funding and liquidity management.

Debt structure as at 31 December 2018

	EUR	USD	CNY
Public issues	EUR 175 million 2019	USD 300 million 2036	
	EUR 300 million 2023		
	EUR 300 million 2027		
	EUR 300 million 2028		
Private placements	EUR 150 million	USD 50 million	
Financial institutions	EUR 361 million	USD 681 million	CNY 2 759 million

Debt programmes and credit facilities as at 31 December 2018

	EUR	SEK
Commercial paper programmes	Finnish Commercial Paper Programme EUR 750 million	Swedish Commercial Paper Programme SEK 10 000 million
EMTN (Euro Medium-Term Note programme)	EUR 4 000 million	
Back-up facility	EUR 600 million sustainability linked revolving credit facility 2023[1]	

[1] Undrawn committed credit facility EUR 600 million. Part of the pricing for the facility agreement is based on Stora Enso's Science Based Targets to combat global warming by reducing greenhouse gases, including CO_2.

Stora Enso is integrating sustainability agenda to its funding and financial services. The Group has the long-term aim to secure funding partners that have sustainability as a fundamental part of their agenda. We aim to influence and develop the financial markets to ensure that sustainability becomes an integral part of decisions and credit evaluation. For more information, please see Stora Enso's **Sustainability 2018**, section Investors or visit our website storaenso.com/investors.

Rating strategy

Stora Enso Group's target is to have at least one public credit rating with the ambition to be investment grade and sustain such metrics throughout business cycles. The present rating and outlook from Moody's and Fitch Ratings are shown below.

Ratings as at 31 December 2018

Rating agency	Long/short-term rating	Valid from
Fitch Ratings	BBB- (stable)	8 August 2018
Moody's	Baa3 (stable) / P-3	1 November 2018

On 6th of August 2018 Stora Enso signed a new credit rating agreement with Fitch Ratings. Fitch assigned Stora Enso Oyj a rating of BBB- with a stable outlook. At the same time Stora Enso terminated its credit rating agreement with the rating agency S&P Global Ratings (Standard & Poor's) and asked S&P to withdraw their rating. Rating was removed on 28th of August 2018 and it was BBB- with stable outlook.

On 1st of November 2018, Moody's Investors Service upgraded Stora Enso Oyj to Baa3 from Ba1 with stable outlook. After the upgrade an Investment Grade rating has been received from both Moody's and Fitch.

Stora Enso's goal is to ensure that rating agencies continue to be comfortable with Stora Enso's strategy and performance. The Company's strategy is to achieve liquidity well in line with the comfort level of the agencies. Review meetings are arranged with the Stora Enso management annually, and regular contact is maintained with the rating analysts.

Read more about: Debt and loans in Note 26.

Stora Enso as a taxpayer

Stora Enso's operations generate value through taxes for governments around the world. In 2018, Stora Enso paid again more than EUR 1 billion into public sectors, including EUR 787 million in collected taxes.

Stora Enso aims to be transparent with respect to economic value generation. For this purpose, Stora Enso makes a voluntary commitment to openly provide details of the taxes paid by the group to governments in its main countries of operation. This commitment to our stakeholders is fully in line with Stora Enso's values 'Do what's right' and 'Lead'.

Stora Enso's tax policy

As a responsible and prudent taxpayer, Stora Enso is committed to ensure that the Group observes all applicable tax laws, rules and regulations in all jurisdictions where it conducts its business activities. Stora Enso follows international transfer pricing guidelines and local legislation. In addition to legal and regulatory requirements, our tax principles comply with our values. Furthermore, we seek to ensure that our tax strategy is aligned with our business and commercial strategy. We only undertake tax planning that is duly aligned to economic activity. This means that all tax decisions are made in response to commercial activity, and tax is only one of many factors that are taken into account when making business decisions.

As with any other business expense, however, we have an obligation to manage our tax costs as part of our financial responsibility to societies and shareholders. We are therefore willing to respond to tax incentives and exemptions granted by governments on reasonable grounds, and we currently have operations in countries that offer favourable tax treatments, where their location is also justified by sound commercial considerations.

Stora Enso has operations in the following locations that offer favourable tax treatments:

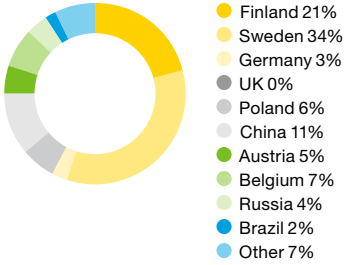
- The joint operation Montes del Plata operates a pulp mill in a Special Economic Zone in Uruguay.
- Stora Enso's two forestry companies in Guangxi, China are entitled to exemption from corporate income tax and value added tax on their sales, and our related industrial company is entitled to reduced tax rates until 2025.
- Stora Enso owned a dormant company in Luxembourg with equity of EUR 2 million. The company was liquidated during 2018.
- Stora Enso conducts business, mainly consisting of sales services, in the United Arab Emirates, Singapore and Hong Kong.
- For logistical and operational reasons, pulp from the Group's joint operations in Brazil and Uruguay is traded via a pulp sourcing and marketing company based in the Netherlands.

Our commitment to tax transparency is also reflected in our relationships with tax authorities and governments. We seek to work positively, proactively and openly with tax authorities on a global basis, aiming to minimise disputes and to build confidence wherever possible.

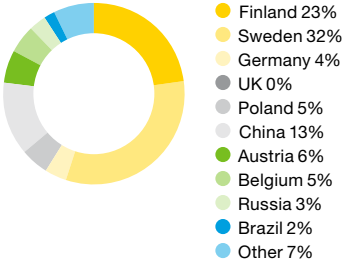
Stora Enso's tax footprint

In 2018, Stora Enso paid EUR 1 276 million (2017: EUR 1 236 million) in taxes to governments in countries where the group has operations. A total of EUR 489 (439) million was paid directly by the group (taxes borne) while EUR 787 (797) million was collected on behalf of governments (taxes collected).

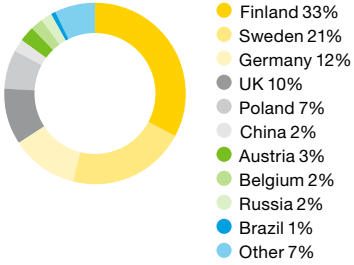
Total taxes borne 2018



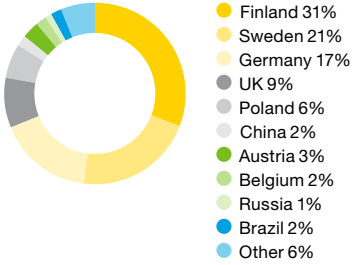
Total taxes borne 2017



Total taxes collected 2018



Total taxes collected 2017



Taxes paid in major countries of operation

		Year Ended 31 December							
		Taxes borne							
		Corporate income tax		Employment taxes		Operational taxes		**Total**	
EUR million	**Primary activity**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Finland	Production	1	0	90	90	13	13	104	103
Sweden	Production and sales	71	45	89	86	7	7	167	138
Germany	Production and sales	-1	4	12	12	5	4	16	20
UK	Sales	0	0	1	1	0	0	1	1
Poland	Production and sales	17	11	6	5	7	7	30	23
China	Production and sales	8	17	14	11	29	30	51	58
Austria	Production and sales	12	13	13	12	0	0	25	25
Belgium	Production and sales	18	3	10	10	4	7	32	20
Russia	Production and sales	11	7	3	3	5	5	19	15
Brazil	Production	2	3	3	3	3	2	8	8
Other		13	10	19	16	4	2	36	28
Total		**152**	**113**	**260**	**249**	**77**	**77**	**489**	**439**

		Year Ended 31 December									
		Taxes collected								**Total taxes paid**	
		VAT & similar[1]		Payroll taxes		Other taxes		**Total**			
EUR million	**Primary activity**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
Finland	Production	35	35	143	144	78	67	256	246	360	349
Sweden	Production and sales	78	77	87	85	0	0	165	162	332	300
Germany	Production and sales	69	110	25	26	0	0	94	136	110	156
UK	Sales	79	71	2	2	0	0	81	73	82	74
Poland	Production and sales	42	37	10	8	0	0	52	45	82	68
China	Production and sales	8	9	11	11	1	0	20	20	71	78
Austria	Production and sales	9	8	16	14	0	0	25	22	50	47
Belgium	Production and sales	6	7	9	8	0	1	15	16	47	36
Russia	Production and sales	11	10	1	2	0	0	12	12	31	27
Brazil	Production	3	3	2	3	6	7	11	13	19	21
Other		34	31	20	18	2	3	56	52	92	80
Total		**374**	**398**	**326**	**321**	**87**	**78**	**787**	**797**	**1 276**	**1 236**

[1] VAT, goods and services taxes and similar turnover related taxes

Stora Enso only paid minor corporate income tax in Finland in 2018 because of tax losses carried forward from previous years. The tax losses of EUR 332 million (2017: EUR 573 million) carried forward in Finland are the result of several factors including high closure and restructuring costs incurred over the past few years.

All companies within the scope of Stora Enso's tax footprint are consolidated or joint operations, which have been consolidated proportionally with Stora Enso's share amounting to at least 50%. Consolidation includes all companies that have either at least 10 employees or a turnover of EUR 5 million or above.

If a Stora Enso company was in a recovery position regarding VAT or energy taxation in a specific country, tax payments for this company have been reported at NIL.

Taxes borne include all tax and tax-like payments that Stora Enso has paid as own taxes. Tax-like payments include other forms of government revenue raised outside of the tax regime, such as payments for emission rights or social security payments.

Taxes collected include all tax and tax-like payments that Stora Enso has collected on behalf of the government, including e.g. payroll taxes as well as VAT and similar sales-related taxes paid by Stora Enso. The economic burden for such taxes ends up with the buyer or final consumer.

Stora Enso's tax footprint figures also reflect governmental incentives granted in the form of reduced tax rates or tax exemption, by reporting lower tax payments. However, governmental support is often granted in the form of subsidies, particularly in relation to energy consumption or favoured investments, which are not considered in our tax footprint calculations.

Capacities by mill in 2019

Consumer Board

Consumer board	Location	Grade	Capacity 1 000 t
Beihai	CHN	LPB, CKB, FSB, FBB	470
Fors	SWE	FBB	455
Imatra	FIN	SBS, FBB, LPB, Coated spec.	1 280
Ingerois	FIN	FBB	280
Skoghall	SWE	LPB, CUK	875
Total			**3 360**

Plastic coating			
Beihai	CHN	Plastic coating	80
Skoghall (Forshaga)	SWE	Plastic coating	120
Imatra	FIN	Plastic coating	415
Total			**615**

Packaging Solutions

Containerboards	Location	Grade	Capacity 1 000 t
Heinola	FIN	SC fluting	300
Ostrołęka	POL	Testliner, PfR fluting, sack paper, wrapping paper	723
Varkaus	FIN	Kraftliner, white-top kraftliner	390
Total			**1 413**

Corrugated packaging	Grade	Capacity million m²
Baltic states	Corrugated packaging	**143**
Kaunas		
Riga		
Tallinn		
Finland	Corrugated packaging	**150**
Lahti		
Kristiinankaupunki		
Poland	Corrugated packaging	**435**
Łódz		
Mosina		
Ostrołęka		
Tychy		
Russia	Corrugated packaging	**365**
Arzamas		
Balabanovo		
Balabanovo offset		
Lukhovitsy		
Sweden	Corrugated packaging	**275**
Jönköping		
Skene		
Vikingstad		
Total	Corrugated packaging	**1 368**

Inpac	Location	Grade	Capacity million pcs	Capacity million m²
Gaobu, Dongguan	CHI	Consumer packaging	390	30
Jiashan, Zhejiang	CHI	Consumer packaging	145	20
Qian'an, Hebei	CHI	Consumer packaging	335	25
Wu Jin, Jiangshu[1]	CHI	Consumer packaging	60	10
Total			**930**	**85**

[1] New plant, investment on-going

Biomaterials

Mill	Location	Grade	Division	Capacity 1 000 t
Enocell	FIN	Short and long-fibre	Biomaterials	490
Skutskär	SWE	Short, long-fibre and fluff pulp	Biomaterials	540
Sunila	FIN	Long-fibre pulp	Biomaterials	375
Montes del Plata (50% share)	URU	Short-fibre pulp	Biomaterials	730
Veracel (50% share)	BRA	Short-fibre pulp	Biomaterials	575
Total				**2 710**

Chemical Pulp

Mill	Location	Grade	Division	Capacity 1 000 t
Heinola	FIN	Neutral Sulphite Semi-Chemical Pulp	Packaging Solutions	285
Kaukopää, Imatra	FIN	Short and long-fibre	Consumer Board	825
Nymölla	SWE	Short and long-fibre	Paper	350
Ostrołęka	POL	Long-fibre	Packaging Solutions	110
Oulu	FIN	Long-fibre	Paper	360
Skoghall	SWE	Long-fibre	Consumer Board	375
Tainionkoski, Imatra	FIN	Short and long-fibre	Consumer Board	195
Varkaus	FIN	Short and long-fibre	Packaging Solutions	310
Veitsiluoto	FIN	Short and long-fibre	Paper	380
Chemical Pulp Total (incl. Biomaterials)				**5 900**
of which market pulp[1]				2 150

[1] market pulp defined as dried pulp shipped out from the mill to external customers.

Deinked Pulp (DIP)

Mill	Location	Grade	Division	Capacity 1 000 t
Hylte	SWE	DIP	Paper	290
Langerbrugge	BEL	DIP	Paper	680
Maxau	GER	DIP	Paper	295
Ostrołęka	POL	Recycled fibre based pulp	Packaging Solutions	615
Sachsen	GER	DIP	Paper	430
Total				**2 310**

CTMP

Mill	Location	Grade	Division	Capacity 1 000 t
Beiha	CHN	BCTMP	Consumer Board	210
Fors	SWE	CTMP	Consumer Board	185
Kaukopää	FIN	CTMP	Consumer Board	220
Skoghall	SWE	CTMP	Consumer Board	270
Total				**675**

Lignin

Mill	Location	Product	Division	Capacity 1 000 t
Sunila	FIN	Lignin	Biomaterials	50
Total Lignin				**50**

Xylose

Mill	Location	Product	Division	Capacity 1 000 t
Raceland[1]	USA	Xylose	Biomaterials	10
Total Xylose				**10**

[1] Starting up

Wood Products

Mill	Location	Sawing Capacity 1 000 m³	Further Processing Capacity 1 000 m³	Pellet capacity 1 000 t	CLT capacity 1 000 m³	LVL capacity 1 000 m³
Ala	SWE	400	50	100	-	-
Alytus	LIT	210	115	-	-	-
Amsterdam	NLD	-	80	-	-	-
Bad St. Leonhard	AUT	360	105	-	80	-
Brand	AUT	440	295	-	-	-
Gruvön	SWE	370	150	100	25	-
Honkalahti	FIN	310	70	-	-	-
Imavere	EST	340	160	100	-	-
Impilahti	RUS	150	10	25	-	-
Kitee	FIN	260	110	25	-	-
Launkalne	LAT	200	20	-	-	-
Murow	POL	300	210	-	-	-
Nebolchi	RUS	180	45	42	-	-
Näpi	EST	50	180	23	-	-
Pfarrkirchen	GER	-	145	-	-	-
Planá	CZE	390	220	-	-	-
Uimaharju	FIN	240	20	-	-	-
Varkaus	FIN	150	35	-	-	75
Veitsiluoto[1]	FIN	200	-	-	-	-
Ybbs	AUT	700	450	-	100	-
Zdírec	CZE	580	220	80	-	-
Total		**5 830**	**2 690**	**495**	**205**	**75**

[1] Veitsiluoto Sawmill belongs to division Paper.

Paper

Mill	Location	Grade	Capacity 1 000 t
Anjala	FIN	Impr. news, book, LWC	435
Dawang	CHN	SC	140
Hylte	SWE	News	480
Kvarnsveden	SWE	SC, impr. news	565
Langerbrugge	BEL	SC, news	555
Maxau	GER	SC	530
Nymölla	SWE	WFU	485
Oulu	FIN	WFC	1 080
Sachsen	GER	News, impr. news, directory	310
Veitsiluoto	FIN	LWC, MWC, WFU	790
Total			**5 370**

Abbreviations used in the tables:

BCTMP	bleached chemi-thermo-mechanical pulp
CKB	coated kraft back board
CLT	cross-laminated timber
CTMP	chemi-thermo-mechanical pulp
CUK	coated unbleached kraftboard
DIP	deinked pulp
FBB	folding boxboard
LPB	liquid packaging board
LVL	laminated veneer lumber
LWC	light-weight coated paper
MWC	medium-weight coated paper
PfR	paper for recycling
SBS	solid bleached sulphate board
SC	super-calendered paper
WFC	wood free coated paper
WFU	wood free uncoated paper

The formula: (Sum of net saleable production of two best consecutive months / Available time of these two consecutive months) x Available time of the year

Information for Shareholders

Annual General Meeting (AGM)

Stora Enso Oyj's AGM will be held at 16.00 (Finnish time) on Thursday 14 March 2019 at Finlandia Hall, Mannerheimintie 13 e, Helsinki, Finland.

Nominee-registered shareholders wishing to attend and vote at the AGM must be temporarily registered in the Company's register of shareholders on the record date, 4 March 2019. Instructions for submitting notice of attendance will be given in the invitation to the AGM, which can be consulted on the Company's website at storaenso.com/agm.

AGM and dividend in 2019

4 March	Record date for AGM
14 March	Annual General Meeting (AGM)
15 March	Ex-dividend date
18 March	Record date for dividend
25 March	Dividend payment

Dividend

The Board of Directors proposes to the AGM that a dividend of EUR 0.50 per share be paid to the shareholders for the fiscal year ending 31 December 2018. The dividend payable on shares registered with Euroclear Sweden will be forwarded by Euroclear Sweden AB and paid in Swedish crowns. The dividend payable to ADR holders will be forwarded by Citibank, N.A. (Citi) and paid in US dollars.

Publication dates for 2019

1 February	Financial results for 2018
Week 7	Annual Report 2018
25 April	Interim Report for January–March
19 July	Half-year Report for January–June
29 October	Interim Report for January–September

Distribution of financial information

Stora Enso's **Annual Report 2018** consists of four sections: Strategy, Sustainability, Financials and Governance. You can find the highlights of the year and all reports as downloadable PDF files at storaenso.com/annualreport2018.

Summary and Governance are available in English, Finnish and Swedish. Strategy, Sustainability and Financials are available in English. The Official Financial Statements (in Finnish) and English and Swedish translations of the Parent Company Financial Statements, and the list of principal subsidiaries in English can be found on the Company's website.

Interim Reports and **Half-year Reports** are published in English, Finnish and Swedish at storaenso.com/press.

Information for holders of American Depositary Receipts (ADRs)

The Stora Enso dividend reinvestment and direct purchase plan is administered by Citibank, N.A. The plan makes it easier for existing ADR holders and first-time purchasers of Stora Enso ADRs to increase their investment by reinvesting cash distributions or by making additional cash investments. The plan is intended for US residents only. Further information on the Stora Enso ADR programme is available at citi.com/DR.

Contact information for Stora Enso ADR holders

Citibank Shareholder Services
Computershare
P.O. Box 43077
Providence, Rhode Island 02940-3077
Email: citibank@shareholders-online.com

Toll-free number: (877)-CITI-ADR
Direct dial: (781) 575-4555

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Concept and design: Miltton Oy
Photography: Mikko Ryhänen

It should be noted that Stora Enso and its business are exposed to various risks and uncertainties and certain statements herein which are not historical facts, including, without limitation those regarding expectations for market growth and developments; expectations for growth and profitability; and statements preceded by “believes”, “expects”, “anticipates”, “foresees”, or similar expressions, are forward-looking statements. Since these statements are based on current plans, estimates and projections, they involve risks and uncertainties, which may cause actual results to materially differ from those expressed in such forward-looking statements. Such factors include, but are not limited to: (1) operating factors such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development, acceptance of new products or services by the Group’s targeted customers, success of the existing and future collaboration arrangements, changes in business strategy or development plans or targets, changes in the degree of protection created by the Group’s patents and other intellectual property rights, the availability of capital on acceptable terms; (2) industry conditions, such as strength of product demand, intensity of competition, prevailing and future global market prices for the Group’s products and the pricing pressures thereto, price fluctuations in raw materials, financial condition of the customers and the competitors of the Group, the potential introduction of competing products and technologies by competitors; and (3) general economic conditions, such as rates of economic growth in the Group’s principal geographic markets or fluctuations in exchange and interest rates. All statements are based on management’s best assumptions and beliefs in light of the information currently available to it and Stora Enso assumes no obligation to publicly update or revise any forward-looking statement except to the extent legally required.