Disclaimer

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.
Stora Enso in brief

Leading global provider of renewable solutions in packaging, biomaterials, wooden constructions and paper

Stora Enso shares are listed on NASDAQ OMX Helsinki and Stockholm. In addition, the shares are traded in the USA as ADRs

Sales
EUR 10.5 billion in 2018

Operational EBIT
EUR 1 325 million in 2018

Some 26 000 employees in 30 countries
Portfolio aimed at growth

Stora Enso group 2018: Sales 10 486 MEUR / Operational EBIT 1 325 MEUR / Operational ROCE 15.5%

Consumer Board – Expansion of relative market share in profitable niches

Packaging Solutions – Selective profitable growth

Biomaterials – Strengthening current business and creating new profitable growth

Wood Products – Accelerating growth

Paper – Strategy for maximum cash generation

4 June 2019

Stora Enso
The renewable materials growth company

We are a leading global producer of board, pulp, wood products and paper

Sales 10.5 BEUR (2018)
1.7 net debt/EBITDA
85% wood from certified forests
100% of our wood is used from sustainable sources
26 000 people in 30 countries

15.5% Operational ROCE (2018) (well above strategic target of 13%)

Our growth businesses = 71% of sales and 83% of operational EBIT...

Paper
Market growth Position
Declining 3-5% annually 
#2 in Europe

Wood Products
Market growth Position
Global sawn softwood 2-3%, European new construction 3-5%
#1 in Europe and #4 in the world in supplying wooden construction material

Consumer Board
Market growth Position
2016-2030 for virgin board: Europe 1.8%, North America 1.2%, Latin America 3.3%, China 4.3%, Rest of Asia 3.4%, Africa 2.5%

Packaging Solutions
Market growth Position
High quality SC range 1.3%-3.0%, Kraftliner 2-3%, ext. North Am/Textile/-. 4%, Eastern Europe

Biomaterials
Market growth Position
Market pulp 2.3%; Fastest growth in tissue (3.2%)

...and these are our drivers for accelerating renewable growth

Bio-barriers
Value added services in sustainable packaging
Next generation liquid & food packaging
Building Components and systems
High-quality Containerboards
Intelligent packaging
Future-based chemicals

9% of our sales came from NEW products and services (2018)

4 June 2019

This is our strategy for delivering sustainable profitable growth...

Stora Enso

...and we are on track to meet our targets

Group strategic targets Q1 18 Q1 19
Dividend To distribute 50% of net income over the cycle 0.41 0.50
Growth** To grow faster than the relevant market 3.2% (YoY) 3.6% (YoY)
Net debt to operational EBITDA <3.0x 1.3 1.7
Fixed costs to sales >20% 22.6% 22.4%
Debt to equity >90% 36% 47%
Operational ROCE >13% 17.7% 14.0%

Divisonal strategic targets Q1 18 Q1 19
Consumer Board Operational ROOC >20% 16.5% 16.2%
Packaging Solutions Operational ROOC >20% 27.7% 21.8%
Biomaterials Operational ROOC >15% 12.6% 13.2%
Wood Products Operational ROOC >20% 26.4% 17.7%
Paper Cash flow after investing activities 0.4% 0.5%

* Annual dividend: Payment Q1 2019 and Q2 in 2018 ** Excluding Paper

4 June 2019
Global environmental drivers support our strategy

Note: Fair value of Biological assets and Group’s indirect share of forest assets as of 31 Dec. 2018, in total 3,328 MEUR

Montes del Plata, Uruguay (ownership 50%)
Stora Enso’s share 81,200 ha of productive forest land

Veracel plantations, Brazil (ownership 50%)
Stora Enso’s share 43,700 ha of productive forest land

Bergvik Skog, Sweden (ownership 49.79%)
Stora Enso’s share 936,000 ha of productive forest land in Sweden

Tornator, Finland (ownership 41%)
Stora Enso’s share 223,200 ha of productive forest land in Finland, Estonia and Romania

Guangxi, Southern China (leased)
77,300 ha of productive forest land

In addition, leased plantations:
- Laos: trial plantation, 3,100 ha
- Russia: 369,500 ha

A balanced market in pulp supports our growth

Hardwood and softwood average capacity growth (Mt/year)

- +1.4 Mt/y (90% ratios)
- +0.56 Mt/y

Announced capacity growth 2016–2022: 2.8 Mt (0.56 Mt/year)

2007–2017

2018–2022

We have ambitious targets to reduce GHG emissions by 31% by 2030...

- The first forest products company to have externally approved science-based targets to reduce its greenhouse gas (GHG) emissions

- Targets for our operations
  Reducing GHG emissions from operations by 31% per tonne of pulp, paper, and board produced by 2030, compared to a 2010 baseline

- Engagement targets for our suppliers
  70% of our non-fibre suppliers in terms of spend to set GHG reduction targets

...and this is how we are delivering on these targets

Cash cost by country

Cash cost
CIF Range ($/tonne)

Best in class

Cumulative capacity, thousand tonnes

Pulp (softwood and hardwood) delivered cost
Pulp demand 2018–2022: +1.3 Mt/year (2.5% CAGR)

Note: Fair value of Biological assets and Group’s indirect share of forest assets is as of 31 Dec. 2018, in total 3,328 MEUR

4 June 2019
Stora Enso
A promising start of the year
Supported by the profit protection programme

Financial highlights Q1/2019

• Sales increased 2.2% to 2 635 MEUR
  • Highest Q1 since 2013 and ninth consecutive quarter of sales growth
  • Higher prices and improved product mix
  • Sales excluding Paper increased 3.6%
• Operational EBIT decreased to 324 MEUR (369 MEUR)
  • Upper end of our guidance range of 260-350 MEUR
  • EBIT margin 12.3% (14.3%), above 10% for the seventh consecutive quarter
  • Higher maintenance impact of 20 MEUR
• EPS decreased by 16.0% to 0.29 (0.35) EUR and EPS excl. IAC was 0.30 (0.35) EUR
• Cash flow from operations decreased slightly to 223 MEUR (229 MEUR). Net working capital increased during the quarter by 236 MEUR because of seasonal reasons. Cash flow after investing activities 94 MEUR (113 MEUR)
• The net debt to operational EBITDA ratio increased to 1.7 (1.3) due to the adoption of IFRS 16 Leases (impact 0.3) and dividend payment
• Operational ROCE at 14.0% (17.7%) was above the strategic target of 13%. The impact of the adoption of IFRS 16 Leases was a negative 0.4 percentage point

Main events Q1/2019

• Stora Enso invests 5 MEUR to build a new production line and related infrastructure to manufacture formed fiber products at Hylte Mill in Sweden. The formed fibre technology enables manufacturing of products that are designed for circularity, meaning that they are renewable, recyclable and biodegradable and do not contain any plastic
• The previously announced restructuring of Stora Enso’s forest associate Bergvik Skog is proceeding as planned. The aim is to complete the transaction during Q2/2019.
• The feasibility study about a potential conversion of the Oulu paper mill into kraftliner production was completed. The proposed plan is to convert paper machine 7 into kraftliner production and close down paper machine 6 and the sheeting plant. The decision of the potential conversion is planned to be made by Stora Enso Board of Directors during H1 2019 after the co-determination negotiations has been completed.
• The investment in a new CLT unit at the Gruvön sawmill was completed, and the first commercial volumes were produced during the quarter

Outlook for 2019

• 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.

Guidance for Q2/2019

• Q2/2019 operational EBIT is expected to be in the range of 270-350 MEUR
• During Q2/2019, there will be annual maintenance shutdown at Nymölla paper mill. The total negative impact of maintenance is estimated to be 35 MEUR less than in Q2/2018.

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4 June 2019
Stora Enso
We are well-positioned for profitable growth – strength of our portfolio

<table>
<thead>
<tr>
<th><strong>Consumer Board</strong></th>
<th><strong>Sales 2018</strong></th>
<th><strong>Market growth</strong></th>
<th><strong>Position</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR</td>
<td>2016–2030 for virgin board: Europe 1.8%, North America 1.2%, Latin America 3.3%, China 4.3%, Rest of Asia 3.4%, Africa 2.5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.6 BEUR</td>
<td>25%</td>
<td>#1 in LPB, FSB and CUK in Europe or the world</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Packaging Solutions</strong></th>
<th><strong>Sales 2018</strong></th>
<th><strong>Market growth</strong></th>
<th><strong>Position</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR</td>
<td>High quality SC fluting 1-3%; Kraftliner 2–3% excl. North Am; Testliner 3–4% Eastern Europe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.3 BEUR</td>
<td>13%</td>
<td>#6 in containerboard in Europe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Biomaterials</strong></th>
<th><strong>Sales 2018</strong></th>
<th><strong>Market growth</strong></th>
<th><strong>Position</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR</td>
<td>Market pulp 2.3%; Fastest growth in tissue (3.2%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.6 BEUR</td>
<td>16%</td>
<td>Widest pulp grades portfolio #1 in Europe in fluff</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Wood Products</strong></th>
<th><strong>Sales 2018</strong></th>
<th><strong>Market growth</strong></th>
<th><strong>Position</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR</td>
<td>Global sawn softwood 2–3%, European new construction 3.5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.6 BEUR</td>
<td>15%</td>
<td>#1 in Europe and #4 in the world in supplying wooden construction material</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Paper</strong></th>
<th><strong>Sales 2018</strong></th>
<th><strong>Market growth</strong></th>
<th><strong>Position</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR</td>
<td>Declining 3–5% annually</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.1 BEUR</td>
<td>29%</td>
<td>#2 in Europe</td>
</tr>
</tbody>
</table>
Our road to success in the bioeconomy

- Introducing new products and services
- Addressing attractive end-use segments
- Delivering sustainable profitable growth
- Generating superior ROCE
Our transformation strategy continues…

- **Customer insight**: Developing offerings according to customers' requirements to create value and growth, with sales excellence.
- **Structured processes**: Clear roles and responsibilities, standardised and harmonised working methods, operational excellence.
- **Motivated employees**: Focus on inspiring leadership, good communication, performance management and target setting.
- **Innovation**: Focus on bio-based materials and chemicals, digitalisation, intelligent packaging and new packaging solutions.

...delivering sustainable profitable growth

- **Strategic growth investments**: Capex at or below depreciation and depletion* over the business cycle.
- **Cash flow from operations**: Focus on bio-based materials and chemicals, digitalisation, intelligent packaging and new packaging solutions.
- **Dividend**: To distribute 50% of EPS over the cycle. 2015–2018 CAGR 14%.
- **Sustainable profitable growth**: Business and CAPEX driven by ROCE.
- **Strong balance sheet**: Net debt to operational EBITDA target reduced from 3x to <2x.

*Operational decrease in the value of biological assets
Innovation never happens in isolation

Awarded as Finland’s most startup-friendly company

Screened ~500 digital start-ups - deeper collaboration with 17

Husqvarna’s most innovative supplier

Sustainable RFID tag technology, ECO™ by Stora Enso

TRÄ Group - innovative digital services for wooden buildings

DuraSense™

Piloting MFC films

Lineo™

Sulapac - renewable and biodegradable straws

TreeToTextile partnership

Asset transformation

Innovation & customer focus

Profitable growth
## Developing further in the bioeconomy

### PRODUCT / TECHNOLOGY

<table>
<thead>
<tr>
<th>Lignin</th>
<th>Replace phenol</th>
<th>Scaling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylose</td>
<td>Sweetener, personal care</td>
<td>Piloting</td>
</tr>
<tr>
<td>Biomass polymers</td>
<td>Replace oil-based plastic</td>
<td>R&amp;D</td>
</tr>
<tr>
<td>Dissolving pulp</td>
<td>Textiles, packaging</td>
<td>Fully adopted by markets</td>
</tr>
<tr>
<td>Modified fibres</td>
<td>Performance chemicals</td>
<td>R&amp;D</td>
</tr>
</tbody>
</table>

### CUSTOMER USE EXAMPLES

<table>
<thead>
<tr>
<th>Micro-fibrillated cellulose (MFC)</th>
<th>Biobarriers in food cartons</th>
<th>Piloting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biocomposites</td>
<td>Light-weight board</td>
<td>Fully adopted by markets</td>
</tr>
<tr>
<td>Lignin carbon fibre</td>
<td>Strengthening liner</td>
<td>Piloting</td>
</tr>
<tr>
<td></td>
<td>Compounding wood fibre with polymers</td>
<td>Scaling</td>
</tr>
<tr>
<td>Building systems</td>
<td>Lightweight structures, energy storage, transportation</td>
<td>R&amp;D</td>
</tr>
<tr>
<td>Modified wood</td>
<td>High rise buildings</td>
<td>Scaling</td>
</tr>
<tr>
<td></td>
<td>Cladding, decking</td>
<td>Piloting</td>
</tr>
</tbody>
</table>

### Phase

<table>
<thead>
<tr>
<th>Nano cellulose</th>
<th>Transparent / electronic programmable / foam / spheres</th>
<th>R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digitalisation</td>
<td>Material with in-built monitoring and tracking capabilities for intelligent packaging</td>
<td>Piloting &amp; Scaling</td>
</tr>
</tbody>
</table>
These are our drivers for accelerating renewable growth

In 2018 9% of our sales came from new products and services

Long-term target 15% of our sales is expected to come from new products and services
## Development of strategic targets

### Group strategic targets

<table>
<thead>
<tr>
<th></th>
<th>Q1 18</th>
<th>Q1 19</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend</td>
<td>0.41*</td>
<td>0.50*</td>
<td>Green</td>
</tr>
<tr>
<td>Growth**</td>
<td>3.2% (YoY)</td>
<td>3.6% (YoY)</td>
<td>Green</td>
</tr>
<tr>
<td>Net debt to operational EBITDA</td>
<td>&lt;2.0x</td>
<td>1.3</td>
<td>Red</td>
</tr>
<tr>
<td>Fixed costs to sales</td>
<td>&lt;20%</td>
<td>22.6%</td>
<td>Green</td>
</tr>
<tr>
<td>Net debt to equity</td>
<td>&lt;60%</td>
<td>36%</td>
<td>Green</td>
</tr>
<tr>
<td>Operational ROCE</td>
<td>17.7%</td>
<td>14.0%</td>
<td>Green</td>
</tr>
</tbody>
</table>

### Divisional strategic targets

<table>
<thead>
<tr>
<th>Divisional</th>
<th>Q1 18</th>
<th>Q1 19</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
<td>Operational ROOC &gt; 20%</td>
<td>18.5%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Packaging Solutions</td>
<td>Operational ROOC &gt; 20%</td>
<td>27.7%</td>
<td>21.8%</td>
</tr>
<tr>
<td>Biomaterials</td>
<td>Operational ROOC &gt; 15%</td>
<td>17.6%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Wood Products</td>
<td>Operational ROOC &gt; 20%</td>
<td>20.4%</td>
<td>17.7%</td>
</tr>
<tr>
<td>Paper</td>
<td>Cash flow after investing activities to sales &gt; 7%</td>
<td>6.2%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

* Annual dividend. Payment: Q1 in 2019 and Q2 in 2018 ** Excluding Paper
## Capacities by grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Capacity 1 000 t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
<td>3 360</td>
</tr>
<tr>
<td>Containerboards*</td>
<td>1 410</td>
</tr>
<tr>
<td>Corrugated Packaging</td>
<td>1 370 (Mm²)</td>
</tr>
<tr>
<td>Sawn goods</td>
<td>5.8 Mm³</td>
</tr>
<tr>
<td>Short-fibre pulp</td>
<td>950</td>
</tr>
<tr>
<td>Long-fibre pulp</td>
<td>600</td>
</tr>
<tr>
<td>Fluff pulp</td>
<td>300</td>
</tr>
<tr>
<td>Dissolving pulp</td>
<td>200</td>
</tr>
<tr>
<td>Unbleached kraft pulp</td>
<td>50</td>
</tr>
<tr>
<td><strong>Net market pulp</strong></td>
<td><strong>2 050</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Capacity 1 000 t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsprint</td>
<td>1 800</td>
</tr>
<tr>
<td>Uncoated Magazine (SC)</td>
<td>1 200</td>
</tr>
<tr>
<td>Coated Magazine</td>
<td>250</td>
</tr>
<tr>
<td>Total Magazine Paper</td>
<td>1 450</td>
</tr>
<tr>
<td>Coated Fine*</td>
<td>1 100</td>
</tr>
<tr>
<td>Uncoated Fine</td>
<td>1 000</td>
</tr>
<tr>
<td>Total Fine Paper</td>
<td>2 100</td>
</tr>
<tr>
<td><strong>Paper Total</strong></td>
<td><strong>5 350</strong></td>
</tr>
</tbody>
</table>

*Oulu coated fine paper production to continue until end of September 2020. Containerboards capacity to increase by 450 000 t/a after Oulu PM7 conversion. The production of the converted machine to start by end of 2020.*
Global position – capacity and biological asset allocation

- Board capacity by country 2019
- Paper capacity by country 2019
- Chemical Pulp capacity by country 2019
- Biological assets by country as at Dec 2018
- Total assets by country as at Dec 2018

**Paper capacity by country 2019**
- Finland: 49%
- Sweden: 27%
- Brazil: 3%
- China: 10%
- Poland: 5%
- Uruguay: 13%

**Chemical Pulp capacity by country 2019**
- Finland: 55%
- Sweden: 28%
- Brazil: 3%
- China: 10%
- Poland: 2%
- Uruguay: 6%

**Biological assets by country as at Dec 2018**
- Finland: 34%
- Sweden: 23%
- Germany: 3%
- China: 11%
- Poland: 5%
- Uruguay: 13%

**Total assets by country as at Dec 2018**
- Sweden: 68%
- Finland: 18%
- Uruguay: 6%
- China: 11%
- Other countries: 9%

**Board capacity by country 2019**
- Finland: 49%
- Sweden: 27%
- Brazil: 3%
- China: 3%
- Poland: 13%
- Uruguay: 13%

**Stora Enso**

4 June 2019

Stora Enso
We are perfectly positioned to benefit from the megatrends:

- Global warming
- Growing middle class
- Eco awareness
- Changing lifestyles
- Urbanisation
- Growing population
- Digitalisation

Increasing demand for raw material that is **renewable**, **reusable** and **fossil free**.
The renewable materials growth company

Everything that’s made with fossil-based materials today can be made from a tree tomorrow
We control ~30% of our wood raw material – a critical advantage in the bioeconomy

Stora Enso’s forest assets*

<table>
<thead>
<tr>
<th>Country</th>
<th>Mm³ sub</th>
<th>Sweden</th>
<th>Finland</th>
<th>Brazil</th>
<th>Uruguay</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mm³ sub</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Pulpwood plantation availability and wood cost

<table>
<thead>
<tr>
<th>Country</th>
<th>Standing stock</th>
<th>Annual procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>79.3</td>
<td>9.5</td>
</tr>
<tr>
<td>Finland</td>
<td>24.6</td>
<td>13.5</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Uruguay</td>
<td>8.1</td>
<td>2.1</td>
</tr>
<tr>
<td>China</td>
<td>6.4</td>
<td>0.3</td>
</tr>
</tbody>
</table>

* Sweden includes Stora Enso’s share of Bergvik Skog (status before 31 May 2019) and Finland Stora Enso’s share of Tornator.
* Brazil and Uruguay with 50% share.
Forest assets – Northern and Southern hemisphere
Fair value of 3.3 BEUR

Swedish forests
1,150,000 ha of productive forest land

Tornator, Finland
Stora Enso’s share 223,200 ha of productive forest land in Finland, Estonia and Romania

Stora Enso’s share 223,200 ha of productive forest land in Finland, Estonia and Romania

Veracel plantations, Brazil
Stora Enso’s share 43,700 ha of productive forest land

Guangxi, Southern China (leased)
77,300 ha of productive forest land

In addition, leased plantations:
- Laos: trial plantation, 3,100 ha
- Russia: 369,500 ha

Montes del Plata, Uruguay
Stora Enso’s share 81,200 ha of productive forest land

Note: Fair value of Biological assets and Group’s indirect share of forest assets is as of 31 Dec 2018, in total 3,328 MEUR
Bergvik Skog’s forests holdings restructuring finalised

- Indirect forest holdings from 1.1 million hectares to direct ownership of 1.4 million hectares in Sweden
  - Productive forest land increase from 0.94 to 1.15 million hectares

- Financial impacts
  - Increase of net debt by about 1.0 BEUR. Issued a 600 MEUR green bond to finance
  - The net debt to EBITDA ratio will increase by approximately 0.5x once all the transaction steps have been finalised by the end of 2019
  - The net debt to EBITDA ratio will exceed the strategic target of <2.0x temporarily during the second half of 2019 before all the steps of the transaction have been finalised
  - Increase of capital employed ~1.0 BEUR, resulting in a decrease in the operational ROCE of ~1 percentage point
  - Fully owned subsidiary and consolidated in segment Other from 1 June 2019 onwards
Oulu paper mill conversion into a packaging board mill
Reduction of Stora Enso paper capacity by 20%

- 350 MEUR investment (2019–2022)
  - Of which 70 MEUR in 2019
  - Group capex estimate to 610–660 MEUR in 2019
- High-quality virgin-fibre-based kraftliner line (450 000 t/a)
- Unbleached softwood pulp (530 000 t/a)
- Financial impacts
  - Oulu Mill’s EBITDA margin expected to improve by 15–20 percentage points
  - Expected to meet Packaging Solutions division’s operational ROOC target of 20%
  - 31 MEUR IAC of which 7 MEUR in Q2/2019 and 24 MEUR in the following five quarters
  - 19 MEUR cash impact related to restructuring costs when paper production ends
- Conversion of woodfree coated paper machine (PM 7)
- Closure of PM 6 and sheeting plant
- Paper production to continue until end of September 2020
- Production on the converted machine to start by end of 2020
Financial performance - divisions
Sales, EBITDA margins, EBIT margins and ROOC

Sales, EBIT margin, EBITDA margin, Operational ROOC, 4Q rolling

Stora Enso
Our formula for success continues

- Sustainable profitable growth 4–6%*
- Strong cash flow generation
- Capex ~3 BEUR**
- Dividend ~50% of EPS
- Net debt to operational EBITDA <2.0x
  Debt to equity <60%

* Excluding Paper ** Next five years
We have several attractive profitable growth options

Sales in Q1 2019
- Consumer Board: 71%
- Paper: 29%
- Packaging Solutions
- Biomaterials
- Wood Products

CAGR potential 2018–2023 (excluding paper)
- Consumer Board: 3–4 %/a
- Packaging Solutions: 6–8 %/a
- Biomaterials: 2–4 %/a
- Wood Products: 6–8 %/a
- TOTAL (excl. Paper): 4–6 %/a
Divisions
Consumer Board

• The ambition of the Consumer Board division is to be the global leader in high-quality virgin fibre cartonboard.

• Aim to be the preferred partner to customers in premium end-use packaging and graphical segments

• A wide board and barrier coating selection suitable for consumer packaging for liquid, food, pharmaceutical and luxury goods

• Serves converters and brand owners globally
Consumer Board – geared towards growth

Sample product categories
- Liquid Packaging: Natura
- Food Service Board: Cupforma, Tamfold
- General Packaging and graphical board: CKB, Trayforma, Performa, Ensocoat, Tambrite
  - Chocolate and confectionary
  - Cosmetics and luxury
  - Pharmaceuticals
  - Food Packaging
  - Drinks, wines and spirits
- Cigarette board: Koppar
- Speciality paper: Lumiflex, LumiLabel

Main competitors include BillerudKorsnäs, Metsä Board, Klabin and International Paper

<table>
<thead>
<tr>
<th>Divisional strategic target</th>
<th>Q1/18</th>
<th>Q1/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
<td>Operational ROOC &gt; 20%</td>
<td>18.5%</td>
</tr>
</tbody>
</table>
Our target is 25% of sales from new products and services

REPLACING PE-FILMS IN CUPS
POUCHES FOR LOW TO MEDIUM SHELF LIFE
LIDS
REPLACING ALUMINIUM FOIL
POUCHES WITH HIGH BARRIER PROPERTIES

BIO-BARRIERS AND FILMS

GLOBAL MARKET SIZE
~80 BEUR

2019-2021
2021-2023
2023-2025

STRAWs
CAPS, CLOSURES & PACKAGING COMPONENTS
RIGID CONTAINERS
TRAYS
CAPS WITH HINGES
TUBES

BIOCOMPOSITES

Source: SmithersPira, internal analysis
Geographical exposure – Consumer Board

Production Facilities
- Sweden: Skoghall Mill
- Finland: Imatra Mill, Ingerois Mill
- China: Beihai Mill

Sales

Worldwide sales network
R&D: Karlstad, Sweden and Imatra, Finland

<table>
<thead>
<tr>
<th>Grade</th>
<th>Capacity 1000 t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
<td>3 360</td>
</tr>
</tbody>
</table>

"Stora Enso"
We continue to grow our premium offering in Beihai

DEMAND AND CAPACITY IN CHINA VIRGIN FIBRE BOARD
(Million tons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Demand</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>7.2</td>
<td>11.9</td>
</tr>
<tr>
<td>2018e</td>
<td>7.8</td>
<td>11.9</td>
</tr>
<tr>
<td>2020f</td>
<td>8.5</td>
<td>13.4</td>
</tr>
<tr>
<td>2025f</td>
<td>10.3</td>
<td>13.4</td>
</tr>
</tbody>
</table>

Source: Pöyry, RISI

PRICING OF PREMIUM AND COMMODITY GRADE VIRGIN FIBRE BOARD IN CHINA
(RMB/t)

Premium grades
Commodity grades

Source: Stora Enso
Attractive end-use segments offer significant opportunities

GLOBAL PACKAGING MATERIALS MARKET

ADDRESSABLE MARKET FOR CONSUMER BOARD

~400 BEUR

50%

Industrial and transport packaging

27% Food & Dairy

8% Beverages

5% Healthcare & Cosmetics

10% Other consumer goods

PAPER BOARD’S SHARE OF TOTAL PACKAGING

SEGMENT GROWTH (p.a. – 2022)

Food & Dairy +2.3%

Beverages +2.6%

Healthcare & Cosmetics +2.8%

Source: SmithersPira, Euromonitor

6 4 June 2019
Stora Enso
2.6% CAGR until 2030 for virgin fibre board grades

Source: Pöyry

Virgin fibre board grades:
- Coated Unbleached Kraft (CUK)
- Solid Bleached Sulphate (SBS)
- Liquid Packaging Board (LPB)
- Folding Box Board (FBB)
- Food Service Boards (FSB)
We have a strong position with global customers
Top 10 customers account for 53% of sales and 60% of EBITDA

Source: Stora Enso, Pöyry

Coated Unbleached Kraft (CUK), Solid Bleached Sulphate (SBS), Liquid Packaging Board (LPB), Folding Box Board (FBB)

Source: Stora Enso, Pöyry
Packaging Solutions

• Packaging Solutions provides fibre-based board materials and corrugated packaging products and services 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

• Modern light-weight containerboard offering

• Vertically integrated board production and converting

• Customer-centric solutions including design, packaging automation and support

<table>
<thead>
<tr>
<th>Grade</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containerboards</td>
<td>1 410 t</td>
</tr>
<tr>
<td>Corrugated Packaging</td>
<td>1 370 (Mm²)</td>
</tr>
</tbody>
</table>
Packaging Solutions – geared towards growth

Sample product categories
- Containerboards: AvantFlute Recycled, AvantFlute SC, AvantKraft, AvantLiner Recycled
- Corrugated Packaging: Flexo-printed packaging, Offset printed packaging, Protective packaging

Main competitors for containerboards include Mondi, Prinzhorn, BillerudKorsnäs and SCA and for corrugated packaging Smurfit Kappa and DS Smith

![Graph showing Sales and Operational EBIT for Q1/18 and Q1/19]

<table>
<thead>
<tr>
<th>Divisional strategic target</th>
<th>Q1/18</th>
<th>Q1/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging Solutions</td>
<td>Operational ROOC &gt; 20%</td>
<td>27.7%</td>
</tr>
</tbody>
</table>
Geographical exposure – Packaging Solutions

Production Facilities

Sales

Russia
- Arzamas
- Balabanovo
- Lukhovitsy

Finland
- Heinola
- Kristiankaupunki
- Lahti
- Varkaus

Sweden
- Jönköping
- Skene
- Vikingstad

Estonia
- Tallinn

Latvia
- Riga

Lithuania
- Kaunas

Poland
- Lodz
- Mosina
- Ostroleka
- Tychy

Dongguan

Beijing

Shanghai

Stora Enso
We have strong market position and growth in our home packaging markets

**Europe**

- **Nordics**
  - 0.7 BEUR
  - 0–1% CAGR
  - #1
  - 107%*

- **Poland & Baltics**
  - 1.5 BEUR
  - 3–5% CAGR
  - #2
  - 85%*

- **Russia**
  - 1.7 BEUR
  - 3% CAGR
  - #4
  - 62%*

**China**

- **Using virgin fibre boards from Beihai and Europe**
  - 1.8 BEUR
  - 5–6% CAGR
  - #5
  - ~20%*

---

*Source: Stora Enso analysis
Note: CAGR 2016–2026
* Relative market share, measured as a share of largest competitor
Strong position and growth in our home box markets

Key box segments:

- Food
- Retail
- Industrial goods
- E-commerce
- Consumer electronics

Key box markets:

<table>
<thead>
<tr>
<th></th>
<th>Nordics (#1)</th>
<th>Poland &amp; Baltics (#2)</th>
<th>Russia (#5)</th>
<th>China (#3)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (BEUR)</td>
<td>0.7</td>
<td>1.9</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>CAGR</td>
<td>1–2%</td>
<td>3–5%</td>
<td>3%</td>
<td>7%</td>
</tr>
</tbody>
</table>

*Position in rigid box market
E-commerce is driving growth in packaging

E-commerce packaging by materials
(Global market value share, 2017)

- Corrugated: 80%
- Flexibles: 15%
- Protective mailers: 1%
- Cushioning: 3%

Corrugated packaging growth in E-commerce

- ~15% CAGR (2017–2021)
- ~33 BEUR market value globally and ~6 BEUR in Europe in 2021
- ~13 BEUR market value added in E-commerce segment globally until 2021

Note: Market values for Global and Europe (Western, Central and Eastern) in 2021. 0.85 USD/EUR average exchange rate used in calculations.
Source: Statista 2018; Smithers Pira – Future of e-commerce packaging to 2022
Containerboard net balance

Testliner. Recycled fluting, 600 000 tonnes

SC Fluting capacity
300 000 tonnes

Kraftliner Capacity
390 000 tonnes

**Containerboard**
Production
1 200 000 tonnes

Internal consumption
310 000 tonnes

External purchases
240 000 tonnes

Balance
~650 000 tonnes
Corrugated packaging is also growing in Europe

Source: Pöyry, Risi, ICCA, Stora Enso analysis
Biomaterials

• Biomaterials offers a wide variety of pulp grades

• End uses: printing and writing papers, specialty papers, graphic papers, packaging paperboards and tissue

• Fluff pulp primarily used in diapers and hygiene products

• Dissolving pulp for textiles

• 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
Biomaterials—geared towards growth

Sample product categories:
- Paper, packaging and tissue production: **Supreme by Stora Enso (Softwood), Perform by Stora Enso (Hardwood) and Select by Stora Enso (Hardwood).**
- Fluff pulp for hygiene products; diapers, and feminine care products: **Care by Stora Enso**
- Dissolving pulp for viscose fabrics e.g. textiles, pharmaceuticals, sponges, cellophane: **Pure by Stora Enso**
- Lignin (adhesive for construction, carbon fibre and energy storage) **Lineo™ by Stora Enso**
- Xylose
- By-products: tall oil, turpentine
Main competitors include UPM, Metsä Fibre, Södra, Arauco and Suzano
Biomaterials worldwide

<table>
<thead>
<tr>
<th>Grade</th>
<th>Capacity (t/a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-fibre pulp</td>
<td>900</td>
</tr>
<tr>
<td>Long-fibre pulp</td>
<td>500</td>
</tr>
<tr>
<td>Fluff pulp</td>
<td>300</td>
</tr>
<tr>
<td>Dissolving pulp</td>
<td>150</td>
</tr>
<tr>
<td><strong>Net market pulp</strong></td>
<td><strong>1 900</strong></td>
</tr>
</tbody>
</table>

Montes del Plata
Capacity: 1.4Mt/a

Skutskär
Capacity: 540kt/a

Veracel
Capacity: 1.2Mt/a

Sunila
Capacity: 375kt/a

Enocell
Capacity: 490kt/a

Stora Enso

Shared Ownership (50%)
Stora Enso Biomaterials' Mills
Demand for all pulp grades is growing by 2.3%

- **Textiles, nonwovens**
  107 Mt market, growing 3%/y
  6.6 Mt market pulp (dissolving)

- **Carton board**
  47 Mt market, growing 2.0%/y
  5.3 Mt market pulp

- **Tissue**
  36 Mt market, growing 3.2%/y
  22 Mt market pulp

- **Hygiene**
  590 billions of converted unit, growing 3.5%/y
  6.2 Mt market pulp (fluff)

- **Paper**
  Specialty: 29 Mt market, growing 2.0%/y
  9 Mt market pulp

  **Graphic**: 101 Mt market, declining -1.0%/y
  17 Mt market pulp

**Pulp consumption increase (Mt)**

- **Image**

**Digitalisation**

**Urbanisation**

**Growing middle class**

**Global warming**

**Eco awareness**

**Changing lifestyles**

**Growing population**

Source: Pöyry Consulting Group, Hawkins Wright, Smithers Pira, RISI
Balanced market expected in pulp

Announced capacity growth 2018–2022: 2.8 Mt (0.56 Mt/year)

Source: Hawkins Wright (April 2018)

Pulp demand 2018–2022: + 1.6 Mt/year (2.5% CAGR)

No new major projects announced
Megatrends support the demand for virgin pulp in China

To 2030:

- **Urbanisation**: 58% → 70% (+200 million people)
- **Growing middle class**: 5 trillion → 9.6 trillion (private consumption in USD)
- **Changing lifestyles**: 60% (safe sanitation services) → 90%
- **Eco awareness**: 70% (+200 million people)

- **From 14 kg to 21 kg** per capita consumption
- **+10 Mt** of hardwood and softwood

Source: World Bank, UN Global Goals, Morgan Stanley Research, RISI, Stora Enso
We continue with our strategic focus areas

Maximise value from eucalyptus pulp
- Continue to improve production efficiency
- Constantly improve the cost competitiveness of Montes del Plata

Differentiate our Nordic pulp business
- Reduce exposure in softwood
- Grow in fluff and dissolving pulp
- Continue to improve production efficiency
- Innovate on pulp applications with current customers

Generate profitable growth from innovation platforms
- Build and develop strong business on:
  - Improved pulp properties
  - Regenerated cellulose and MFC
  - Lignin
  - Bio-based chemicals
  - Extraction and separation technologies
We are differentiating our pulp mix

Maximize value from eucalyptus pulp

Improve competitiveness of our Nordic mills (Fluff and dissolving)

Today

- Softwood: 47%
- Hardwood: 26%
- Fluff/dissolving: 27%

Target 2020

- Softwood: 43%
- Hardwood: 15%
- Fluff/dissolving: 42%
Innovation is key for sustainable profitable growth

Product platforms

1. Improved pulp properties
2. Regenerated cellulose & MFC
3. Lignin
4. Bio-based chemicals

Technology platform for extraction & separation
## Creating value from renewable, reusable and fossil free materials

<table>
<thead>
<tr>
<th>Innovation Platforms</th>
<th>Value proposition</th>
<th>End markets</th>
<th>Time to market</th>
<th>Market Potential: Size / value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved pulp properties</td>
<td>Increased material efficiency and performance</td>
<td>Specialty papers, hygiene fibre-based packaging</td>
<td>Continuous</td>
<td>2.6 Mt / 1.4 BEUR</td>
</tr>
<tr>
<td>Regenerated cellulose</td>
<td>Novel sustainable material from cellulose</td>
<td>Textile, and as film material in packaging</td>
<td>2020–2022</td>
<td>20 Mt / 35 BEUR</td>
</tr>
<tr>
<td>MFC</td>
<td>Increased material efficiency and performance</td>
<td>Specialty papers, coatings, cosmetics, and as film material in packaging</td>
<td>2019–2021</td>
<td>0.7 Mt / 1.6 BEUR</td>
</tr>
<tr>
<td>Lignin</td>
<td>Replace fossil-based materials</td>
<td>Resins and adhesives Carbon fibre Carbons for energy storage</td>
<td>2017–2023</td>
<td>1 Mt / 1.7 BEUR</td>
</tr>
<tr>
<td>Bio-based chemicals</td>
<td>Replace fossil-based materials for plastics</td>
<td>Packaging</td>
<td>2026–2027</td>
<td>2 Mt / 2.5 BEUR</td>
</tr>
</tbody>
</table>

Sources: Hawkins Wright, The Fiber Year 2018, EMBS, Smithers Pira, Transparency market research, Price Hanna consultants, Composites Marktbericht, Plastics Insight, Stora Enso experts
Wood Products

Products

- Cross Laminated Timber - CLT
- Laminated Veneer Lumber - LVL
- Construction beams
- Industrial components
- Biocomposites
- Classic sawn
- Classic Planed
- Pellets

Services

- Panel systems
- Modular systems
- Walls, floor, roofs etc.
- Building Components
- Integrated distribution concept

E-tools

- MySupply E-business
- Pellet webshop
- BIM Digital tools
- CLT360
- Calculatis
The wood used removed 1 500 tonnes of CO₂ from the atmosphere and it equals annual emissions of over 500 passenger cars.
Strong and light without losing flexibility in design

Millimetre precision using latest technology

Head above Water
London, England
Wood Products – accelerating growth

Sample product categories:
- Classic sawn
- Classic planed
- CLT (Cross laminated timber)
- LVL (Laminated Veneer Lumber)
- Construction beams
- Window and door components
- Building Solutions
- Building Components
- ThermoWood
- Pellets
- Biocomposites

Main competitors include Binderholz, Holzindustrie Schweighofer, SCA Timber and Metsä Fibre
Our operations well positioned in Europe

- **Number of mills**: 4,038
- **Sales to countries**: Czech, Poland, Germany, Netherlands
- **358,000 employees**
- **Production units**: Sweden, Finland, Russia, Lithuania, Estonia, Latvia, Austria
- **4 June 2019**
- **Grade**: Sawn goods 5.6 Mm$^3$
- **Further processing**: 2.7 Mm$^3$
- **CLT**: 205,000 m$^3$
- **LVL**: 75,000 m$^3$
- **Pellets**: 495,000 t
- **EUR 1.6 billion**
- **5.6 Mm$^3$**
Getting the right log is critical for profitability in Wood Products

Customer demand | Sawing pattern | Log pricing | Cutting | Purchasing

Demand flow

Material flow
Biocomposites will generate further growth
First time a truly cost-competitive material compared to general purpose plastics

• Revenue creation from totally new production stream

• Development in 2018
  • Production line in Hylte inaugurated
  • Next investments ongoing
  • Competence Centre under progress

• Market introduction ongoing
  • DuraSense™ by Stora Enso brand launched
  • First commercial deliveries with brand owners: ie Orthex and H&M
  • Cooperation with NorDan to develop biocomposite materials for 3D printing ongoing
The leading provider of innovative wood based solutions

2012–2014
Building a foundation
• Saved 50 MEUR
• Created a lean base

✓ IMPLEMENTED

2015–2017
Selected growth
• Increased the annual growth of added value products with 15%
• Started Business Process Development program (BPD) based on digitalisation

✓ IMPLEMENTED

2017–
Profitable growth for total division
• ROOC > 20%
• Target 10% annual growth in sales
• Continue focus on BPD and digitalisation
• Launch new products and services

➢ ONGOING
Paper

- The second largest paper producer in Europe with an established customer base and wide product portfolio for print and office use
- The wide selection covers papers made from virgin wood and recycled fibres
- Customers: publishers, retailers, printing houses, merchants, converters and office suppliers
- End uses: newspapers and supplements, books, magazines, advertising, note books, art books, office
Paper – geared to cash generation

Sample product categories
- Paper selection for print media: Newsprint and book papers, Uncoated mechanical papers (SC), Coated papers (Brands: e.g. Nova, InnoPress)
- Paper selection for office use: transactional needs, office printing, writing and educational needs (Brands: e.g. MultiCopy, Zoom)

Main competitors include UPM, Sappi, Norske Skog, Holmen and the Navigator company

### Divisional strategic target

<table>
<thead>
<tr>
<th></th>
<th>Q1/18</th>
<th>Q1/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper - Cash flow after investing activities to sales &gt;7%</td>
<td>6.2%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>
## Paper worldwide

**Grade** | **Capacity (1 000 t)**
--- | ---
Newsprint | 1 800
Uncoated Magazine (SC) | 1 200
Coated Magazine | 250
Total Magazine Paper | 1 450
Coated Fine* | 1 100
Uncoated Fine | 1 000
Total Fine Paper | 2 100

**Paper Total** | **5 350**

*Oulu coated fine paper production to continue until end of September 2020*
Since 2013 we have transformed our Paper business

-17%  -33%  -21%  -82%  +20%

Paper demand in Europe  Our production capacity  Our deliveries  Our accidents  Customer satisfaction*

Optimising profitability and cash flow:

- Focus on the right product and customer segments
- Pricing excellence
- Variable and fixed cost control
- High operational efficiency and capacity utilisation
- Focused investments
- Working capital reduction
- Innovation and digitalisation

Change 2013–Q3/2018

*) Percentage points in NPS
Innovations
Innovations – a few snapshots
Focus on innovations

In 2018, Stora Enso’s expenditure on research and development was EUR 149 million, which was equivalent to 1.4% of sales.

56 priority founding patent applications filed and over 324 patents granted worldwide.
We are investing more in innovation and R&D

R&D expenditure in 2018
149 MEUR

Peers:
- Borregaard
- IP
- Metsä Board
- Mondi
- SCA
- Smurfit Kappa
- UPM

Source: Stora Enso, annual reports 2018
Innovation projects with high potential impact to transformation

- Bio-barriers, MFC films
- Native and modified MFC
- Intelligent packaging
- Bio-based plastics
- Dissolving pulp to novel cellulosic materials

- Liquid and food packaging
- Specialty papers, nonwovens, personal and home care, barrier materials
- Sophisticated applications to brand owners and supply chains
- Chemical intermediates
- Textiles and nonwovens

- Lignin for phenol replacement
- Carbon fibre
- Bio-based carbons for energy storage
- Biocomposites

- Reduction of fossil raw materials in adhesives
- Sports and leisure, wind energy, automotive, aviation
- Anode material for batteries, activated carbon for double layer capacitors
- Replacement of fossil-based plastics in composites
Innovation in packaging
Advancing the renewable packaging industry with innovations

- Microfibrillated cellulose (MFC)
- Biobarrier coatings
- Biocomposites
- Intelligent packaging
- Design driven innovation
We see many new opportunities to replace fossil-based materials...

Lignin-based products
- Lineo™ by Stora Enso
- Carbon fibre
- Carbon for energy storage

- Market size 1.2 BEUR
- Growth ~20%/a
- EBITDA 30–50%

Biocomposites
- DuraSense™ by Stora Enso for wood-based biocomposites
- Less fossil-based materials with higher share of fibre

- Market size 7 BEUR
- Growth ~15%/a
- EBITDA 20–30%

Liquid packaging MFC
- Source reduction

MFC films
- Functional barriers for paper and board packaging

- Market size 1.5 BEUR
- Growth ~5%/a
- EBITDA >20%
...Iceland Foods chooses our Trayforma to replace plastics

Iceland Foods, the UK’s leading specialist retailer in the frozen food category, launched the first plastic-free pledge for its own brand products for a UK supermarket

- Target is to be plastic-free by 2023 through an overhaul of their entire product range

- Ready meals packed in paperboard trays

- Trayforma™ by Stora Enso food-safe and suitable for cooking at high temperatures in ovens and microwaves food trays
Micro-fibrillated cellulose improves product properties and can replace fossil-based materials

**Today**

- MFC is used to make more durable, lighter, high-quality packaging products

**Future potential**

- Barrier coating solutions for grease and oxygen barriers
- Biodegradable replacement for aluminium foil
- Carrier for example in cosmetics
- 3D printing
Biocomposites – gradually replacing plastic

• Use in products, such as disposable cutlery, furniture, as well as storage and logistics goods

• Raw material for markets where plastics dominate

• Can reduce the consumption of fossil-based plastic by up to 60%

• Always a better alternative than fossil-based plastic – Reduce the carbon footprint of a product up to 80%

Target market
4.5 Mt
1-5 years
Stora Enso, Intelligent Packaging

- Digitalization of packaging and product flows using RFID technology
- Offering provided in three focus areas from tag products to retail and pulp & paper solutions
- Circa 40 people in Europe and Asia
- Milestones:
  - Started 10 years ago in Stora Enso, last 3-4 active commercialization.
  - 2017 - Inauguration of PackPerformance Center in: a dedicated RFID development and testing site in Tampere, Finland
  - 2018 – Establishment of Business Unit structure for Intelligent Packaging within Stora Enso group
  - 2018 – Launching ECO™ technology
Intelligent packaging
Connecting packages, products and value chains

Radio-Frequency Identification (RFID)
Scope of Intelligent Packaging

• Complete offering for end-to-end execution
• Value driven approach to digitalisation projects
• Unique capabilities to connect products and embed identifiers
• Post sales support
• Software platform and supporting enterprise software integrations
Business success requires end-to-end solution
From tags and integration to cloud and applications

**ENTERPRISE APPLICATIONS**
- Asset Management
- Track & Trace
- Data Analytics

**CLOUD PLATFORM**
- Data Integration
- Data Collection
- Data Processing
- Data Analytics

Intelligent Packaging Cloud data platform (Microsoft Azure)

**READER INFRASTRUCTURE**
- RFID Gate
- RFID Cabinet
- RFID Forklift
- RFID Station
- RFID Tunnel
- RFID Truck Gate
- Handhelds

**TAG & INTEGRATION**
- Tags Design & Performance
  - Bracket
  - Bobbin
  - Bumper
  - Tail
  - Stripe

- Tag Manufacturing & Converting
  - Conventional
  - Sustainable ECO RFID Tech

**Integrations**
- ERP
- MES
- PDM
- CRM

**Professional services**
- Business case evaluations
- Solution design
- Installation & Maintenance Services
- Application development

4 June 2019
Stora Enso
Studies show significant benefits for RFID

McKinsey study 2018 on Supply Chain potential of Intelligent Packaging in industrial goods

- Tied-in capital reduction: 3-11%
- Cost decrease in supply chain: 4-7%
- Improvement in service level and product availability: 1-2%

**IMPROVEMENT IN KEY RETAIL METRICS/KPIs BEFORE AND AFTER RFID ADOPTION**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Before RFID</th>
<th>After RFID</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Accuracy</td>
<td>67.4%</td>
<td>84.5%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>64.6%</td>
<td>71.7%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Store Out-of-Stocks</td>
<td>16.5%</td>
<td>9.8%</td>
<td>40.6%*</td>
</tr>
<tr>
<td>Shrinkage</td>
<td>17.8%</td>
<td>11.8%</td>
<td>33.7%*</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>8.9%</td>
<td>14.3%</td>
<td>60.7%</td>
</tr>
<tr>
<td>Average Markdown</td>
<td>14.8%</td>
<td>11.9%</td>
<td>19.6%*</td>
</tr>
</tbody>
</table>

* Improvement is reflected by reduction
Source: EKN—Kurt Salmon RFID in Retail Survey, 2016
ECO RFID Tag Technology
Unique RFID technology launched in Nov 2018

Key benefits:
- Sustainable
- Reliable
- Performant
- Cost neutral

Available in several tag designs
Digitizing Supply Chains for better visibility

1. Automated inventory management with RFID-gates that auto-register which RFID-tagged items enter the warehouse at inbound and leave the warehouse at outbound.

2. Automated counting and scanning as RFID reader scans contents of box with RFID-tagged items, useful in receiving and picking.

3. Automated cycle count with handheld RFID-reader (or even a drone with an RFID-reader) performs cycle count of items in floor storage.

4. Forklifts with RFID-scanners enable sensing of pick/put-away locations quality controls that correct packages are picked.

5. Stock location management RFID readers on shelves sense which RFID-tagged items are placed on the shelves.

6. Shipping QC with RFID-reader gate verifies that correct RFID-tagged packages are loaded on the truck avoiding incorrect shipments.

7. Dispatch navigation with RFID-readers in the ceiling identify items in the dispatch area and lights guide workers to correct boxes.

8. Packaging validation with RFID-reader in pack stations verifies content of package being built – verifies pack completion and warns if line items are missing.

9. Smart container with RFID-readers at the door that register which RFID-tagged items enter and leave the container.

10. RFID-reader in trunk of van keeps automated inventory count and tracks RFID-tagged equipment.

11. Anti-tamper protection of goods with sealed tag and/or unique code to identify genuine product.

12. Returns management with RFID tags also on return flow from customers or other warehouses to enable full integration with other use cases.
Retail and RFID
RFID market development example – Macy’s

“Men’s and women’s undergarments, men’s slacks, denim apparel and women’s shoes”

30% 2012

60% 2016

100% 2017

“All lines of businesses at its stores, except for jewelry and cosmetics.”

“All items in every store tagged.”

Source: RFID Journal October 2016
Stora Enso
Item Level Tagging Benefits in retail stores

Example in food category

• Waste reduction **up to 20%**

• Labour cost reduction **up to 50%**
  – Cut labour costs of shelf life management
  – Improve visibility of use-by dates
  – Simplify mark down process
  – Reduce net food waste in store
  – Improve stock rotation
  – Enhance recall management

*based on Avery Dennison pilots and retailer feedback*
Innovative and award-winning design

- Leak-tight renewable and 100% recyclable packaging for fresh fish
- WorldStar packaging award
- Sustainability award by World Packaging Organisation

- Original design replacing traditional pressed pulp packaging for eggs
- Best packaging and label award for Food at ProdExtraPack
Stora Enso named Husqvarna’s most innovative supplier

Long term collaboration between Stora Enso and Husqvarna Group

Motivation for the award:

*Stora Enso invests for the long term in competence, resources and proactive involvement in order to understand its customers’ needs. Through this initiative, Stora Enso has enabled Husqvarna to sustainably achieve its ambitious goals concerning development and innovations in the supply chain.*

New packaging for chain saws reduces cost and CO₂ emissions

- 37% capacity fill
- 5 300 pallets/ year
- 180 containers/ year
- 190 000 kg CO₂/ year

4 June 2019

Stora Enso
Innovation in Biomaterials

- Pulp applications
- Cellulose modification and pulp process by-products
- Developing the extraction technology
- Further development of sugars
From wood to renewable products

Extraction and separation technologies

Cellulose and hemicellulose

Sugars

Lignin

Lignin, biochemicals, bioplastics, regenerated cellulose, pulp etc
Innovation is key for sustainable profitable growth

Product platforms

1. Improved pulp properties
2. Regenerated cellulose & MFC
3. Lignin
4. Bio-based chemicals

Technology platform for extraction & separation
Platform 1: improving pulp properties for existing products

**Fluff pulp**
- Hygiene and health, growing by 3.6% per year
- Life expectancy and increased disposable income in developing countries
- Improve fluff pulp properties to increase customer value

**Dissolving pulp**
- Dissolving pulp to textiles is a 6.1 Mt market, growing 6.8% per year
- The increase of cellulosic fibre in textiles is driven by global brand owners
- Improve quality to be able to differentiate in the value chain

**Pulp for specialty papers**
- Flexible packaging, labels, security, décor, among others
- 28 Mt market, growing 1.8% per year
- Fibre improvements, special additives, sustainable coatings & barriers, source reduction and other innovation opportunities

Source: Smithers Pira, Hawkins Wright
Platform 2: Developing new technologies for using wood fibre in textiles, non-woven and specialty papers

- Participate in the development of new technologies for using wood fibre in textiles
- Growing interest from global brand owners increases demand for renewable fibres
- Opportunity to leverage on existing assets to enter this new market

Regenerated cellulose

MFC

- MFC has potential to be used in specialty papers and non-woven
- MFC is a versatile material with potential to work as strength enhancer, additive, binder and barrier material
- Stora Enso has a long history in the research of MFC and has a demonstration plant in Imatra, Finland

Source: Stora Enso
Platform 3: Lignin – big opportunities in many markets

**Phenol replacement**
- Phenolic resins is a 2.8 Mt market, growing at 4% CAGR
- It replaces phenol in adhesives for plywood, OSB (oriented strand board), laminates, LVL and other wood construction materials
- The carbon footprint for lignin is roughly 1/10 of the carbon footprint of phenol

**Carbon fibre**
- Light-weight high performance composites
- 70–80 Kt market, growing at 9–12% CAGR
- Low-carbon-footprint carbon fibre is unoccupied market space

**Energy storage**
- Substitution of conventional hard carbon anode materials in energy storage, namely Li-Ion Batteries and Supercapacitors
- Market growing on average by 20% CAGR
- Key applications: portable consumer electronics, power tools, electrical vehicles, stationary applications and back-up systems

Source: Stora Enso, Carbon Composites, IDTechEx, LuxResearch, Markets and Research, Zion Research
Renewable Lineo™ by Stora Enso can replace fossil-based materials

• Wood-based lignin is a renewable, non-toxic, traceable material

• Environment benefit, for example, in carbon fibres, energy storage and mechanical forest industry

• Today as a replacement for oil-based phenolic materials in glues for example in plywood and paper lamination

• Lignin makes up 20-30% of round wood

Market size; 3Mt for Phenol replacement
Platform 4: Bio-based chemicals replacing fossil-based materials

Bioplastics and intermediates

- Growing interest in packaging/bottling markets for renewable solutions
- Reduction on carbon footprint and enhanced properties are key target areas
- Market clearly favoring second generation biomass as the raw material source
- It is a very populated market place, thus, strategic alliances will be crucial to win in this industry

Xylose

- Key application is the xylitol (sweetener) market (approximately 120 Kt at 4–6% CAGR)
- Compared to C6 sugars it still is a rather undeveloped market, mainly due to lack of pure xylose availability. This is changing with the biorefinery concepts
- Growing interest and developments taking place in the market
- Stora Enso well positioned to be a frontrunner here

Source: PwC, Kline and Industry experts
Innovation in Wood Products

- Product innovations
- Building Systems
- Digitalisation
From a classic sawn producer to a leading provider of innovative wood-based solutions

- Classic sawn
- Cross Laminated Timber (CLT)
- Laminated Veneer Lumber (LVL)
- Building Solutions
- Industrial components
- Construction beams
- Pellets
- Online services and e-business
Building Systems driving growth

Find the film from Stora Enso’s YouTube page (youtube.com/storaenso), or use a direct link youtube.com/watch?v=3Ei9hhp_T5k
New ways of improving efficiency through digitalisation – Forest categorisation & log value

Buyer takes pictures
Pictures to cloud service

Cloud

Calculation

Results

ProCalc data - Value of logs

- Quality class
- Value for sawmills

→ Pricing proposal for buyer
Digitalisation in Wood Products

1. Market information
   - Forest categorisation based on collected info
   - Optimised raw material specification based on demand
   - Product demand forecast based on market

2. Product demand forecast based on market

3. Optimised raw material specification based on demand

4. Forest categorisation based on collected info

5. Trees cut based on profit optimisation

6. Individualisation of each log and digital data transfer to mill

7. Scan each single log

8. Simulate production, based on demand and log info

9. Automate, robotise and mobilise production

10. Scan each single product

11. Intelligent products

12. Digital customer interaction

Wood Products end-to-end Digitalisation

Digital customer interaction

Intelligent products

Scan each single product

Simulate production, based on demand and log info

Automate, robotise and mobilise production

Scan each single log

Individualisation of each log and digital data transfer to mill

Trees cut based on profit optimisation

Forest categorisation based on collected info

Optimised raw material specification based on demand

Product demand forecast based on market

Market information

Markets

Products

Industries

Customers

Competitors

Supplier

Stora Enso
Group’s financial performance, dividend policy, ownership and top management
Financial performance - Group

MEUR

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales</th>
<th>Operational EBIT margin (%)</th>
<th>Operational EBITDA margin (%)</th>
<th>Operational ROCE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
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<tr>
<td>2014</td>
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<td>2015</td>
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<td>2016</td>
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<tr>
<td>2017</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1/18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1/19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cost structure 2018
% of costs

- Logistics and commissions: 11%
- Fibre: 34%
- Chemicals and fillers: 14%
- Energy: 12%
- Material: 10%
- Personnel: 7%
- Depreciation: 7%
- Other: 5%

Stora Enso
4 June 2019
Capex on targeted levels

Capex estimate for 2019 includes the capitalised leasing contracts according to IFRS 16 Leases standard.
Large number of opportunities prioritised through robust capital allocation

• Systematic approach on Group capex (>10MEUR)
  − Investment Working Group headed by CFO reviews all the proposals to ensure quality and prioritisation
  − Alignment with the Stora Enso strategy and financial and sustainability targets

• Selective investments to strategic projects in winning markets and products

• New cash flow modelling tool helps asset prioritisation with 20–30 years perspective

<table>
<thead>
<tr>
<th>Divisional financial targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
</tr>
<tr>
<td>Packaging Solutions</td>
</tr>
<tr>
<td>Biomaterials</td>
</tr>
<tr>
<td>Wood Products</td>
</tr>
<tr>
<td>Paper</td>
</tr>
</tbody>
</table>
Targeted ROOC is driving CAPEX allocation
Capex forecast in 2019 (at the end of Q1 2019)

* Operational ROOC target
** Cash flow after investing activities to sales target
Year-on-year net debt/EBITDA

* IFRS 16 Leases impact 525 MEUR on Net debt and 0.3x on Net debt to operational EBITDA ratio in Q1/19
Maturity profile Q1 2019

Revolving Credit Facility 600 MEUR matures in January 2023 and is fully undrawn.
## Sustainability in our funding and reporting

<table>
<thead>
<tr>
<th><strong>Revolving Credit Facility with a green aspect</strong></th>
<th><strong>Green Bond Framework</strong></th>
<th><strong>Green Bonds</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pricing includes sustainability component based on ability to reduce greenhouse gas emissions.</td>
<td>A loan-format to support sustainability-focused fixed income investors and to report environmental impacts.</td>
<td>First green bonds issued in February in 2019 to finance Bergvik Skog forest acquisition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sustainable Finance strategy</strong></th>
<th><strong>Climate-related financial disclosure</strong></th>
<th><strong>Integrated reporting</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim is to influence and develop the financial markets and to secure funding partners with sustainability agenda.</td>
<td>CFO support for better disclosure of climate risks and opportunities based on recommendations by the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD).</td>
<td>The World Business Council for Sustainable Development (WBCSD) Redefining Value Board and programme: work on international reporting frameworks, materiality assessment standards, and data assurance methodologies.</td>
</tr>
</tbody>
</table>
Stora Enso dividend policy

- Strive to pay stable dividends linked to the long-term performance
- Half of the EPS over the cycle
## Ownership Distribution

as of 31 March 2019

<table>
<thead>
<tr>
<th>Ownership Category</th>
<th>% of shares</th>
<th>% of votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solidium Oy*</td>
<td>10.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>FAM AB</td>
<td>10.2%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Social Insurance Institution of Finland (KELA)</td>
<td>3.1%</td>
<td>10.1%</td>
</tr>
<tr>
<td>Finnish institutions (excl. Solidium and KELA)</td>
<td>12.4%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Swedish institutions (excl. FAM)</td>
<td>5.7%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Finnish private shareholders</td>
<td>4.6%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Swedish private shareholders</td>
<td>3.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>ADR holders</td>
<td>2.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Under nominee names (non-Finnish/non-Swedish shareholders)</td>
<td>48.0%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

* Entirely owned by the Finnish State
## Major Shareholders
### as of 31 March 2019

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>A shares</th>
<th>R shares</th>
<th>% of shares</th>
<th>% of votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solidium Oy*</td>
<td>62 655 036</td>
<td>21 792 540</td>
<td>11</td>
<td>27.3</td>
</tr>
<tr>
<td>2</td>
<td>FAM AB**</td>
<td>63 123 386</td>
<td>17 000 000</td>
<td>10</td>
<td>27.3</td>
</tr>
<tr>
<td>3</td>
<td>Social Insurance Institution of Finland (KELA)</td>
<td>23 825 086</td>
<td>973 982</td>
<td>3</td>
<td>10.1</td>
</tr>
<tr>
<td>4</td>
<td>Varma Mutual Pension Insurance Company</td>
<td>8 513 018</td>
<td>1 140 874</td>
<td>1</td>
<td>3.6</td>
</tr>
<tr>
<td>5</td>
<td>Ilmarinen Mutual Pension Company</td>
<td>3 258 883</td>
<td>18 352 160</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>6</td>
<td>MB-Bolangen i Vellanda AB (incl. Stiftelsen Seydlitz Småland)</td>
<td>4 826 020</td>
<td>1 100 000</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>7</td>
<td>Erik Johan Ljungberg's Education Foundation</td>
<td>1 780 540</td>
<td>2 336 224</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>8</td>
<td>Swedbank Robur Funds</td>
<td>0</td>
<td>14 326 902</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>9</td>
<td>Bergslaget's Healthcare Foundation</td>
<td>626 269</td>
<td>1 609 483</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>10</td>
<td>Elo Mutual Pension Insurance Company</td>
<td>0</td>
<td>6 169 000</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>11</td>
<td>The State Pension Fund</td>
<td>0</td>
<td>6 100 000</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>12</td>
<td>Nordea Investment Fund</td>
<td>0</td>
<td>5 833 174</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>13</td>
<td>Keva (Local Government Pensions Institution)</td>
<td>0</td>
<td>5 251 101</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>14</td>
<td>Investment Fund OP Suomi</td>
<td>0</td>
<td>3 913 482</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>15</td>
<td>Unionen (Swedish trade union)</td>
<td>0</td>
<td>3 477 750</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>16</td>
<td>AFA Insurance</td>
<td>0</td>
<td>3 474 492</td>
<td>0*</td>
<td>0.1</td>
</tr>
<tr>
<td>17</td>
<td>SEB Investment Management</td>
<td>0</td>
<td>3 242 273</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>18</td>
<td>Schweizerische Nationalbank</td>
<td>0</td>
<td>2 589 019</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>19</td>
<td>Lannebo Funds</td>
<td>0</td>
<td>2 220 000</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>20</td>
<td>Nordea Bank Abp</td>
<td>0</td>
<td>1 860 511</td>
<td>0</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**20 largest total**  
168 608 238 | 122 712 967 | 36 | 76.0

*Entirely owned by the Finnish State. **As confirmed to Stora Enso.

List has been compiled by the company, based upon shareholder information from Euroclear Finland Oy and Euroclear Sweden AB share registers and a database managed by Citibank, N.A. (as the company’s ADR agent bank). This information includes only direct registered holdings, thus certain holdings (which may be substantial) of ordinary shares and ADRs held in nominee or brokerage accounts can not be included. The list is therefore incomplete.
Group Leadership Team

CEO
Karl-Henrik Sundström

CFO
Seppo Parvi

HR
Malin Bendz

Consumer Board
Annica Bresky

Sourcing
Johanna Hagelberg

Paper
Kati ter Horst

Communication
Ulrika Lilja

Legal
Per Lyrvall

Biomaterials
Markus Mannström

Sustainability
Noel Morrin

Packaging Solutions
Gilles van Nieuwenhuyzen

Wood Products
Jari Suominen

Stora Enso
Board of Directors

Jorma Eloranta
since April 2016
Chairman

Hans Stråberg
since April 2009
Vice chairman

Elisabet Fleuriot
since April 2013

Hock Goh
since April 2012

Mikko Helander
since March 2019

Christiane Kuehne
since April 2017

Antti Mäkinen
since March 2018

Richard Nilsson
since April 2014

Göran Sandberg
since April 2017
ESG indices and other external recognition in 2018

*Euronext Vigeo*
Stora Enso is listed in the Euronext Vigeo World, Europe, and Eurozone 120 indices as one of the 120 most advanced companies in terms of environmental, social, and governance performance.

*FTSE4Good Index*
Stora Enso is included in the FTSE4Good Index Series. These indices measure the performance of companies that meet generally recognised corporate responsibility standards.

*ECPI Ethical Indices*
Stora Enso is included in the ECPI EMU Ethical Equity index, which covers environmental, social, and governance criteria.

*ISS-oekom Research*
Stora Enso is classified as “Prima” by ISS-oekom Research’s environmental, social, and governance rating methodology. In 2018, Stora Enso also received the best possible Environmental & Social quality score by the Institutional Shareholder Services (ISS).

*MSCI*
Stora Enso is included in several of MSCI's ESG indices.

*EcoVadis*
Stora Enso was included in the top 1% (industry suppliers) of the EcoVadis ethical supplier rating system, and achieved the highest recognition level (Gold).

*OMX Sustain*
Stora Enso is included in the NASDAQ OMX and GES Investment Service/OMX GES Sustainability Finland index.

*STOXX ESG indices*
Stora Enso is included in all STOXX ESG indices. These indices rate leading global companies according to environmental, social, and governance criteria.

*Sustainability Reporting Awards Finland*
Stora Enso's Sustainability Report 2017 was ranked best by the media in a competition organised by seven not-for-profit organisations representing various sectors of society. The report was short-listed among the 10 best reports in the overall competition.

*ReportWatch*
Stora Enso's Sustainability Report 2017, part of our Annual Report, was included in ReportWatch’s Best Practices in Annual Sustainability Reporting.

*WBCSD*
Stora Enso's Sustainability Report 2017 was included in the top ten sustainability reports globally according to the 2018 Reporting matters publication by the World Business Council for Sustainable Development (WBCSD).

*Sustainable Brand Index*
Stora Enso was ranked “Industry Leader 2018” in the Sustainable Brand Index™ B2B, which is the largest brand study on sustainability in the Nordics.

*Equileap*
Stora Enso was ranked number 12 globally and the best performing Finnish company in gender balance and gender equality by Equileap, an organisation set up to accelerate progress toward gender equality at work.

*Most sustainable company 2018*
In November 2018, Stora Enso was ranked as the most sustainable listed company in Sweden by Dagens Industri, Aktuell Hållbarhet, and Lund University School of Economics and Management.
Sponsored ADR Programme

Stora Enso has established a sponsored Level I ADR programme in the US. The ADRs trade on the premier tier of Over-The-Counter ("OTC") market in the US. Details are as follows:

Ticker Symbol  SEOAY
CUSIP  86210M106
Ratio  1 ADR : 1 Ordinary Shares
ADR depositary  Citibank

Share price information  www.citi.com/DR or www.otcqx.com

Please contact the Citibank’s dedicated ADR broker desks:

Scott Pollak (New York)  Mike Woods (London)
Tel: +1 212 723 5676  Tel: +44 20 7500 2030
Email: scott.h.pollak@citi.com  Email: michael.woods@citi.com
A promising start of the year –
Supported by profit protection programme
Financial results for Q1 2019

CEO Karl-Henrik Sundström
CFO Seppo Parvi

25 April 2019
A promising start of the year
– Supported by profit protection programme
Q1 2019 year-on-year

• Sales 2 635 (2 579) MEUR, +2.2%
  – Highest Q1 since 2013 and 9th consecutive quarter of growth
  – Higher prices in all divisions, and improved product mix, despite lower volumes
  – Sales growth excluding Paper was +3.6%

• Operational EBIT decreased to 324 (369) MEUR
  – Upper end of our guidance range of 260–350 MEUR
  – EBIT margin 12.3% (14.3%), above 10% for 7th consecutive quarter
  – Higher maintenance impact of 20 MEUR

• EPS decreased by 16.0% to 0.29 (0.35) EUR

• Cash flow from operations decreased slightly to 223 (229) MEUR. Net working capital increased during the quarter by 236 MEUR because of seasonal reasons. Cash flow after investing activities 94 (113) MEUR

• Net debt to operational EBITDA ratio increased to 1.7x (1.3x)
  – IFRS 16 Leases increased 0.3x
  – Dividend payment already in Q1

• Operational ROCE at 14.0% (17.7%) above the strategic target of 13%
  – IFRS 16 Leases impact negative 0.4 percentage point
Value management and profit protection paying off
Operational EBIT Q1 y-o-y

Value management

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>369</td>
<td>349</td>
<td></td>
</tr>
<tr>
<td>14.3%</td>
<td>12.3%</td>
<td></td>
</tr>
</tbody>
</table>

Profit protection programme

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20</td>
<td>-24</td>
<td></td>
</tr>
</tbody>
</table>

4 June 2019
Stora Enso
Operational ROCE continued above the strategic target of 13%

The impact of the adoption of IFRS 16 Leases was a negative 0.4 percentage points in Q1 2019
Main events during Q1

• Formed fiber 5 MEUR investment in Hylte Mill Sweden
  − A new production line and related infrastructure to produce e.g. inserts, containers, cups, industrial packaging, etc.
  − Enables manufacturing of products that are renewable, recyclable and biodegradable and do not contain any plastic

• Oulu conversion feasibility study completed
  − Proposed plan is to convert PM7 into kraftliner production and close down PM6 and the sheeting plant
  − The decision of the potential conversion is planned to be made by the Stora Enso Board of Directors during H1 2019 after the co-determination process has been completed

• New CLT unit investment at the Gruvön sawmill completed
  − First commercial volumes produced during the quarter

• Flash-drying capacity of CTMP investment at Imatra Mills completed successfully
  − Enhances the availability of CTMP at the mill and drives the commercialisation of MFC
Bergvik Skog ownership restructuring proceeding as planned

- Previously announced restructuring of Stora Enso’s forest associate Bergvik Skog is proceeding as planned

- Aim is to complete the transaction during Q2

- Impacts
  - Indirect forest holdings from 1.1 million hectares to direct ownership of 1.4 million hectares in Sweden
  - Productive forest land increase from 0.94 to 1.15 million hectares
  - Increase of net debt by about 1.0 BEUR. Issued a 600 MEUR green bond to finance
  - Increase of capital employed ~1.0 BEUR
  - ROCE impact ~1 % point
  - Transaction is forecast to increase Stora Enso’s net debt to operational EBITDA temporarily above the strategic target of <2.0x due to transaction’s structure. Expected to be back below the target level by the end of 2019
Sales growth continues and profitability on good level
Summary financials Q1 2019

<table>
<thead>
<tr>
<th>EUR million</th>
<th>Q1/19</th>
<th>Q1/18</th>
<th>Change% Q1/19-Q1/18</th>
<th>Q4/18</th>
<th>Change% Q1/19-Q4/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>2 635</td>
<td>2 579</td>
<td>2.2%</td>
<td>2 657</td>
<td>-0.9%</td>
</tr>
<tr>
<td>Operational EBITDA</td>
<td>471</td>
<td>504</td>
<td>-6.5%</td>
<td>405</td>
<td>16.3%</td>
</tr>
<tr>
<td>Operational EBITDA margin</td>
<td>17.9%</td>
<td>19.5%</td>
<td></td>
<td>15.3%</td>
<td></td>
</tr>
<tr>
<td>Operational EBIT</td>
<td>324</td>
<td>369</td>
<td>-12.3%</td>
<td>271</td>
<td>19.5%</td>
</tr>
<tr>
<td>Operational EBIT margin</td>
<td>12.3%</td>
<td>14.3%</td>
<td></td>
<td>10.2%</td>
<td></td>
</tr>
<tr>
<td>Profit before tax excl. IAC</td>
<td>286</td>
<td>333</td>
<td>-14.2%</td>
<td>267</td>
<td>6.9%</td>
</tr>
<tr>
<td>Net profit for the period</td>
<td>226</td>
<td>273</td>
<td>-17.4%</td>
<td>299</td>
<td>-24.4%</td>
</tr>
<tr>
<td>EPS excl. IAC, EUR</td>
<td>0.30</td>
<td>0.35</td>
<td>-14.9%</td>
<td>0.33</td>
<td>-8.3%</td>
</tr>
<tr>
<td>EPS (basic), EUR</td>
<td>0.29</td>
<td>0.35</td>
<td>-16.0%</td>
<td>0.39</td>
<td>-23.6%</td>
</tr>
<tr>
<td>Operational ROCE</td>
<td>14.0%</td>
<td>17.7%</td>
<td>-20.9%</td>
<td>12.4%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Cash Flow from Operations</td>
<td>223</td>
<td>229</td>
<td>-2.8%</td>
<td>323</td>
<td>-31.0%</td>
</tr>
<tr>
<td>Net debt/last 12 months’ operational EBITDA</td>
<td>1.7*</td>
<td>1.3</td>
<td></td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

* Adoption of IFRS 16 Leases impact 0.3x
## Adoption of IFRS 16 Leases impact in Q1

<table>
<thead>
<tr>
<th>MEUR</th>
<th>Q1/19</th>
<th>IFRS 16 impact</th>
<th>Q1/19 without IFRS 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital employed</td>
<td>9 226</td>
<td>260</td>
<td>8 966</td>
</tr>
<tr>
<td>Operational EBITDA</td>
<td>471</td>
<td>19</td>
<td>452</td>
</tr>
<tr>
<td>Depreciation (incl. EAI)</td>
<td>-135</td>
<td>-18</td>
<td>-118</td>
</tr>
<tr>
<td>Operational decrease in the value of biological assets</td>
<td>-13</td>
<td></td>
<td>-13</td>
</tr>
<tr>
<td>Operational EBIT</td>
<td>324</td>
<td>2</td>
<td>322</td>
</tr>
<tr>
<td>Fair valuations and non-operational items</td>
<td>-7</td>
<td></td>
<td>-7</td>
</tr>
<tr>
<td>IAC</td>
<td>-4</td>
<td></td>
<td>-4</td>
</tr>
<tr>
<td>Operating Profit IFRS</td>
<td>313</td>
<td>2</td>
<td>311</td>
</tr>
<tr>
<td>Net financial items</td>
<td>-31</td>
<td>-6</td>
<td>-25</td>
</tr>
<tr>
<td>Income tax</td>
<td>-56</td>
<td></td>
<td>-56</td>
</tr>
<tr>
<td>Net Profit for the Period</td>
<td>226</td>
<td>-4</td>
<td>230</td>
</tr>
<tr>
<td>Operational ROCE</td>
<td>14.0%</td>
<td>-0.4%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Net debt</td>
<td>3 093</td>
<td>526</td>
<td>2 569</td>
</tr>
<tr>
<td>Net debt to operational EBITDA</td>
<td>1.7</td>
<td>-0.3</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Consumer Board
Price increases coming through gradually
Q1 y-o-y

• Sales decreased slightly to 634 MEUR
  – Lower board deliveries were partly offset by higher pulp deliveries
  – Local sales prices had a slight positive impact

• Operational EBIT decreased 37 MEUR to 54 MEUR
  – Significantly higher variable costs especially for wood
  – Negative total volume impact

• Operational ROOC decreased to 10.3%
  – Lower profitability and impact of IFRS 16 Leases (impact -0.3 percentage points)

• Premium quality FBB in China, Arctic Deer™ by Stora Enso launched
  – Suitable for applications in food and pharmaceutical packaging, as well as publications

• Imatra PM6 to be shut down by the end of 2019
  – Decrease annual sales by approximately 70 MEUR
Packaging Solutions
Record Q1 sales
Q1 y-o-y

• Sales +2% to record high Q1 of 338 MEUR
  – Higher prices in Corrugated and SC Fluting

• Operational EBIT decreased 10 MEUR to 51 MEUR
  – Higher sales prices offset by overall higher costs and lower China Packaging sales margin
  – Changed maintenance schedule compared to a year ago for Ostrołęka Mill’s PM5 decreased production and increased maintenance costs

• Operational ROOC at 21.8%

• Industrial scale pilot plant will be built at the Heinola fluting mill in Finland to turn sludge from the mill’s water treatment plant into renewable fuel. The plant will test new energy-efficient technology. The new biofuels will reduce the carbon dioxide emissions at the mill’s power plant
Biomaterials
Good performance continues – record quarter Q1 y-o-y

• Sales +1% to record high Q1 of 398 MEUR
  – Slightly higher sales prices supported by FX
  – Lower deliveries mainly due to changed maintenance schedule in Veracel Mill in Brazil

• Operational EBIT at record high Q1 level of 103 MEUR
  – Higher sales prices partly offset by higher variable and fixed costs

• Operational ROOC at 16.2%
Wood Products
Continues on record level
Q1 y-o-y

- Sales increased 3%
  - Slightly higher sales prices and favourable mix changes partly offset by lower deliveries

- Operational EBIT at record high Q1 level of 29 MEUR
  - Higher sales prices offset by higher fixed costs mainly related to start-up preparations of strategic investments
  - Negative impact from volumes

- Operational ROOC decreased to 17.7%
  - Capital increase at Gruvön new CLT plant, seasonality and adoption of IFRS 16 Leases (impact -0.6 percentage points)
Record high Q1 profitability
Q1 y-o-y

- Sales -2% to 760 MEUR
  - Clearly higher sales prices and a better mix
  - Lower sales volumes

- Operational EBIT stable at 69 MEUR
  - EBIT margin increased to 9.1%, highest in ten years
  - Significantly higher sales prices and slightly lower fixed costs
  - Higher variable costs, especially in wood, pulp and energy
  - Lower volumes

- Cash flow after investing activities to sales ratio 6.1 (6.2)%
Outlook for 2019 remains unchanged

Stora Enso's year 2019 is expected to be largely in line with the 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.
Guidance for Q2 2019

- Operational EBIT is expected to be in the range of 270–350 MEUR

- During Q2 2019, there will be annual maintenance shutdown at Nymölla paper mill. The total negative impact of maintenance is estimated to be 35 MEUR less than in Q2 2018.

<table>
<thead>
<tr>
<th>Annual maintenance</th>
<th>Q2 2019</th>
<th>Q2 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Board</td>
<td>-</td>
<td>Beihai Mill</td>
</tr>
<tr>
<td>Packaging Solutions</td>
<td>-</td>
<td>Heinola and Varkaus mills</td>
</tr>
<tr>
<td>Biomaterials</td>
<td>-</td>
<td>Enocell Mill</td>
</tr>
<tr>
<td>Paper</td>
<td>Nymölla Mill</td>
<td>Oulu Mill</td>
</tr>
</tbody>
</table>
Value management and profit protection paying off
Q1 2019 year-on-year

• Sales growth 2%, ninth consecutive quarter of sales growth y-o-y

• Seventh consecutive quarter of double digit operational EBIT margin

• Operational ROCE was 14%, above the strategic target of 13%

• Balance sheet strong despite adoption of IFRS 16 Leases and dividend payment

• Value management, price vs. volume

• Profit protection programme addressing cost structure going forward – securing the future