

# Stora Enso Oyj

The Positive Outlook on Stora Enso Oyj's Issuer Default Rating (IDR) reflects ongoing solid operating performance after the pandemic, combined with its successful strategic transformation away from the paper segment, which should support the group's EBITDA sustainability. We expect growing exposure to the packaging materials and solutions segments will further underpin Stora's EBITDA margins and free cash flow (FCF) generation, which will deliver strong leverage metrics through the cycle.

Stora's IDR continues to reflect a solid business profile with good diversification by geography, customer and product, with leading positions in different markets. Moreover, its solid business profile is underpinned by its vertical integration into forestry assets. The group has had positive FCF even during downturns, and a strong liquidity position and leverage metrics.

## Key Rating Drivers

**Ongoing Strategic Transformation:** Stora has successfully continued its strategic move towards packaging and away from a structurally declining paper business. In 2022 paper contributed about 15% of total revenue versus about 28% in 2019. By end-1H23 the group should complete the disposal of its paper Hylte mill in Sweden in addition to the completed disposals of Nymölla mill in Sweden and Maxau mill in Germany.

In total these assets generated about EUR675 million of revenue and the expected total value of the deals is about EUR378 million. Fitch therefore forecasts the share of the paper segment contribution will be reduced to around 10% of revenue in 2023.

**De Jong Boosts Business Profile:** Stora aims to increase the share of the packaging segment to over 60% of revenue by 2030. In January 2023 Stora acquired De Jong Packaging Group, one of the largest corrugated packaging producers in Benelux, with estimated revenue of about EUR1 billion and pro forma IFRS EBITDA of EUR114 million.

The enterprise value of the transaction is about EUR1 billion, of which EUR250 million is IFRS lease liabilities. Funding of the transaction is partly offset by expected cash proceeds from the paper mills disposals at about EUR378 million. Fitch views this as a positive step in strengthening Stora's business profile by enhancing its geographical and product diversification and increasing its exposure to the more stable packaging segment.

**Pressured Margins Remain Healthy:** We forecast that sales in cyclical segments such as biomaterials and wood products will be held back by economic slowdown in 2023, while sales in packaging should be more stable. We therefore expect EBIT and EBITDA margins to be squeezed in 2023 by sustained cost inflation, but to remain at still healthy levels of 11% and 15.7%, respectively.

We expect gradual improvement of EBIT margin to about 13.5% and EBITDA margin to about 18.2% by 2026 from the changing product mix following its exit from the lower-margin paper business and ongoing investments into packaging.

**Temporary Squeeze on FCF:** Historically, Stora has generated sustainably positive FCF even during downturns. We forecast FCF to remain solid to 2026, albeit squeezed in 2023 on higher-than-average capex of about EUR1.2 billion (11% capex to revenue) for the conversion of its paper mill in Finland to consumer board production and ongoing investments into new innovative products.

In addition, the group will pay in 2023 an all-time high dividend of EUR473 million. We expect lower capex from 2024, reducing to a more normalised about 6.7% of revenue in 2026. This, together with expected healthy profitability, should further support solid FCF.

## Ratings

### Foreign Currency

Long-Term IDR BBB-

### Outlook

Long-Term Foreign-Currency IDR Positive

### Debt Rating

Senior unsecured debt Long-Term Rating BBB-

2035 Climate Vulnerability Score: 23

[Click here for the full list of ratings](#)

## Applicable Criteria

[Corporates Recovery Ratings and Instrument Ratings Criteria \(April 2021\)](#)

[Sector Navigators: Addendum to the Corporate Rating Criteria \(October 2022\)](#)

[Corporate Rating Criteria \(October 2022\)](#)

## Related Research

[EMEA Packaging Outlook 2023 \(November 2022\)](#)

## Analysts

Marina Bordakova  
 +34 93 467 8843  
[marina.bordakova@fitchratings.com](mailto:marina.bordakova@fitchratings.com)

Lucas Forte Facchini  
 +34 93 522 6250  
[lucas.fortefacchini@fitchratings.com](mailto:lucas.fortefacchini@fitchratings.com)

**Low Leverage:** Stora's EBITDA net leverage improved to 0.9x at end-2022 from 1.4x at end-2021, supported by improving EBITDA margins. We forecast EBITDA net leverage to temporarily increase to 1.4x in 2023 due to a combination of acquisitions and disposals and expected margins pressure. Nevertheless, improving margins and strong FCF generation should support the group's deleveraging and we forecast EBITDA net leverage to be well below 2.0x in 2024-2026.

**Good Diversification:** Stora is well -diversified across different industries, including packaging, building materials, paper and forestry assets. Some of the segments are more cyclical than others but we view product diversification as supportive of the rating as it provides stability over the long term.

Stora has good geographical diversification, with 68% of revenue in 2022 in Europe and no single country at more than 10%. About 18% was generated in Asia Pacific and another 14% from others, including Americas. Good customer diversification is another factor supporting the rating.

**China Disposal in Process:** In December 2022 Stora announced its intention to dispose of its consumer packaging site and forestry operations in Beihai, China where it owns an 80% stake. The timeline for this disposal is uncertain and therefore this event is not incorporated in our rating case. The reduction of earnings following the disposal should be mitigated by ongoing investments of about EUR1 billion during 2022-2025 to convert paper machines at the Oulu site in Finland into consumer board line. The latter should yield revenue of EUR800 million or 6%-7% of forecast revenue from 2025.

**Vertical Integration Provide Supports:** Stora is one of the largest private forest owners in the world. The forestry assets provide the group with vertical integration, mitigating EBITDA generation volatility via control over some input costs. Stora benefits from its high self-sufficiency in energy of about 72% and hedging and from its about 30% self-sufficiency in wood. Moreover, we view forestry assets as a potential source of liquidity in a severe market downturn, given the fairly liquid nature of forestry assets, particularly in the Nordic region.

## Financial Summary

(EURm)	2020	2021	2022	2023F	2024F	2025F
Gross revenue	8,553	10,164	11,680	11,188	11,207	11,437
EBITDA margin (%)	11.0	16.5	18.5	15.7	16.9	17.7
EBIT margin (%)	5.2	11.7	14.5	10.9	12.1	12.8
EBITDA net leverage (x)	3.0	1.4	0.9	1.4	1.2	0.9
Free cash flow margin (after net acquisitions) (%)	3.6	6.5	2.9	-4.4	2.6	3.3

F = Forecast

Source: Fitch Ratings, Fitch Solutions

## Rating Derivation Relative to Peers

Stora's closest peer is Smurfit Kappa Group plc (SKG; BBB-/Stable). Like SKG, Stora is largely exposed to Europe where 68% of its total sales in 2022 were generated. Nevertheless, Stora's geographical diversification is slightly better than SKG's. While Stora has wider product diversification than SKG, its exposure to cyclical end-customers is material, which might result in profitability volatility if pulp prices weaken.

Stora's EBIT margins are more volatile than SKG's due to Stora's material exposure to pulp and wood product end-markets, which contributed 26%-33% over the last four years. Nevertheless, Stora's profitability remains similar to SKG's. Stora reports sustainably positive FCF margins, similarly to most packaging companies such as SKG, Silgan Holdings Inc. (BB+/Stable) and Berry Global Group, Inc. (BB+/Stable).

In its biomaterials business, Stora can be compared with Latin American pulp and product companies Celulosa Arauco y Constitucion S.A. (BBB/Stable), Empresas CMPC S.A. (BBB/Stable) and Suzano S.A. (BBB-/Stable). These companies have substantially higher margins, due to a cheap and fast-growing wood supply, but are generally less diversified and more exposed to cyclical swings.

Stora's capital structure has significantly improved over the last three years, on improving EBITDA generation. Stora's EBITDA leverage metrics compare well with SKG's and are commensurate with an investment-grade financial profile.

## Navigator Peer Comparison

	IDR/Outlook	Operating Environment	Management and Corporate Governance	Sector Competitive Intensity	Industry Profile	Market Position	Diversification	Profitability	Financial Structure	Financial Flexibility
Berry Global Group, Inc.	BB+/Sta	a-	a	bbb-	bbb-	bbb-	bbb-	bbb	bb+	bb+
Celulosa Arauco y Constitucion S.A.	BBB/Sta	a+	bbb	bbb	bbb	bbb	bbb	bbb+	bbb	bbb+
Empresas Copec S.A.	BBB/Sta	a+	bbb	bbb	bbb+	bbb+	bbb	bbb-	bbb	bbb+
Silgan Holdings Inc.	BB+/Sta	aaa	bbb	bbb	bbb	bbb+	bbb	bb+	bb+	bbb-
Smurfit Kappa Group plc	BBB-/Sta	a	a-	bbb-	bbb+	bbb	bbb-	bb+	a-	a-
Stora Enso Oyj	BBB-/Pos	aa	bbb+	bbb-	bbb	bbb	bbb	bbb-	bbb+	bbb+
Suzano S.A.	BBB-/Sta	bbb	bbb	bbb	bbb	bbb+	bb+	bbb+	bbb-	bbb

Source: Fitch Ratings.

Importance Higher Moderate Lower

Name	IDR/Outlook	Operating Environment	Management and Corporate Governance	Sector Competitive Intensity	Industry Profile	Market Position	Diversification	Profitability	Financial Structure	Financial Flexibility
Berry Global Group, Inc.	BB+/Sta	4.0	5.0	1.0	1.0	1.0	1.0	2.0	0.0	0.0
Celulosa Arauco y Constitucion S.A.	BBB/Sta	4.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Empresas Copec S.A.	BBB/Sta	4.0	0.0	0.0	1.0	1.0	0.0	-1.0	0.0	1.0
Silgan Holdings Inc.	BB+/Sta	10.0	2.0	2.0	2.0	3.0	2.0	0.0	0.0	1.0
Smurfit Kappa Group plc	BBB-/Sta	4.0	3.0	0.0	2.0	1.0	0.0	-1.0	3.0	3.0
Stora Enso Oyj	BBB-/Pos	7.0	2.0	0.0	1.0	1.0	1.0	0.0	2.0	2.0
Suzano S.A.	BBB-/Sta	1.0	1.0	1.0	1.0	2.0	-1.0	2.0	0.0	1.0

Source: Fitch Ratings.

Worse positioned than IDR In line with IDR Better positioned than IDR

## Rating Sensitivities

## Factors that Could, Individually or Collectively, Lead to Positive Rating Action/Upgrade:

- Increased geographic diversification leading to improved business risk
- EBIT margins above 12% on a sustained basis
- EBITDA net leverage below 2.0x on a sustained basis
- FCF margin above 2.5%

## Factors that Could, Individually or Collectively, Lead to Negative Rating Action/Downgrade:

- Significant acquisitions or large-scale capex leading to liquidity deterioration or FCF squeeze
- EBIT margins below 10% on a sustained basis
- EBITDA net leverage above 2.5x on a sustained basis

## Liquidity and Debt Structure

**Good Liquidity Position:** At end-2022 Stora reported Fitch-defined readily available cash of EUR1.8 billion, following Fitch's adjustment of EUR150 million to cover intra-year working-capital needs. This is more than enough to cover short-term debt maturities of about EUR1.3 billion, including EUR174 million of drawn factoring. We forecast FCF to be sustainably positive over the rating horizon, which will provide additional support to the group's liquidity position to cover potential working-capital swings, capex and dividends.

Stora's liquidity position is also supported with an available undrawn committed revolving credit facility of EUR700 million due 2027. The group also has undrawn committed bilateral loans of EUR200 million due 2023 and bank loans of EUR200 million due 2025 and 2026. Stora has also commercial paper programmes of EUR750 million and SEK10 billion, which are used for short-term funding.

Stora's debt structure is diversified, with some maturity concentration in 2023 and 2025. About 53% of debt at end-2022 is represented by fixed-rate bonds and about 13% by floating rate bonds. Funding characteristics are strong, with solid access to financial markets, and diversified and readily available unsecured funding options.

## ESG Considerations

Stora Enso Oyj has an ESG Relevance Score of '4[+]' for Exposure to Social Impacts due to the gradual consumer switch to the more sustainable packaging and building materials products, which has a positive impact on the credit profile, and is relevant to the ratings in conjunction with other factors.

Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of '3'. This means ESG issues are credit neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity. For more information on Fitch's ESG Relevance Scores, visit [www.fitchratings.com/esg](https://www.fitchratings.com/esg)

## Climate Vulnerability Considerations

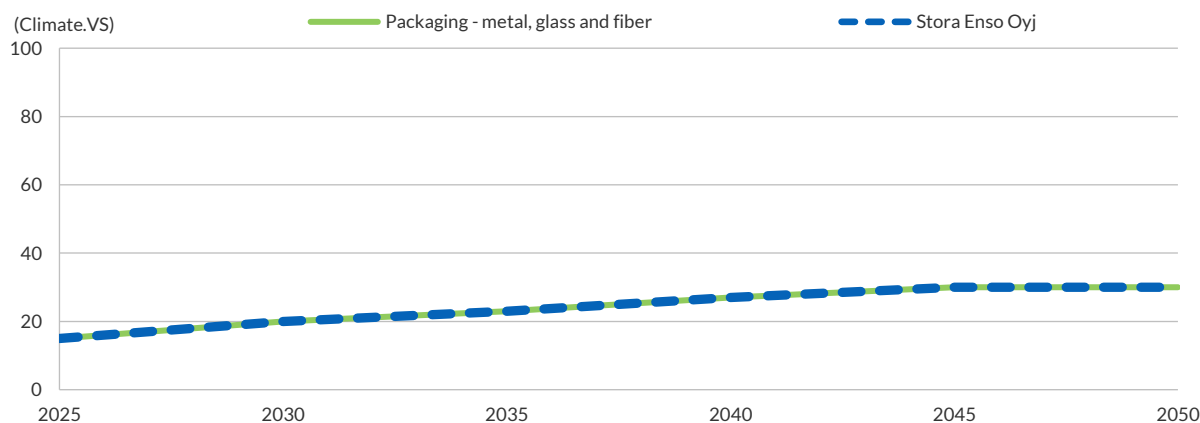
We are currently in consultation with our stakeholders on a proposal to support consistency and transparency in the way Fitch Ratings identifies and addresses potentially credit-relevant climate risks in its credit rating process. This would include adding the section below to all Rating Reports. To learn more about the approach, and provide feedback, please see [Climate Vulnerability in Corporate Ratings – Discussion Paper](#) or contact [climate.vsfeedback@fitchratings.com](mailto:climate.vsfeedback@fitchratings.com).

The FY22 revenue-weighted Climate Vulnerability Score (Climate.VS) for Stora Enso Oyj for 2035 is 23 out of 100, suggesting low <40 exposure to climate-related risks in that year. For further information on how Fitch perceives climate-related risks in Industrial sector see [Industrials – Long-Term Climate Vulnerability Scores](#)

Climate.VS can range from 0 (lowest risk) to 100 (highest risk). For further information on how Fitch perceives climate-related risks in the packaging sector see [Industrials – Long-Term Climate Vulnerability Scores](#).

### Climate.VS Evolution

As of 31 December 2022



Source: Fitch Ratings

## Liquidity and Debt Maturities

### Liquidity Analysis

(EURm)	2023	2024F	2025F	2026F
<b>Available liquidity</b>				
Beginning cash balance	1,767	-75	-88	-383
Rating case FCF after acquisitions and divestitures	-491	296	382	552
<b>Total available liquidity (A)</b>	<b>1,276</b>	<b>221</b>	<b>294</b>	<b>169</b>
<b>Liquidity uses</b>				
Debt maturities	-1,351	-309	-677	-95
<b>Total liquidity uses (B)</b>	<b>-1,351</b>	<b>-309</b>	<b>-677</b>	<b>-95</b>
<b>Liquidity calculation</b>				
Ending cash balance (A+B)	-75	-88	-383	74
Revolver availability	900	900	800	700
<b>Ending liquidity</b>	<b>825</b>	<b>812</b>	<b>417</b>	<b>774</b>
Liquidity score (x)	1.6	3.6	1.6	9.1

F – Forecast

Source: Fitch Ratings Fitch Solutions, Stora Enso Oyj

<b>Scheduled debt maturities</b>	<b>2022</b>
<b>(EURm)</b>	
2023	1,351
2024	309
2025	677
2026	95
2027	325
Thereafter	1,072
<b>Total</b>	<b>3,829</b>

Source: Fitch Ratings, Fitch Solutions, Stora Enso Oyj

Debt repayment in 2023 includes factoring of EUR174 million and reverse factoring of about EUR107 million (based on Fitch adjustments).

## Key Assumptions

### Fitch's Key Assumptions within Our Rating Case for the Issuer:

- Mid-single-digit decline of revenue in 2023, before recovering by single digits during 2024-2026
- EBITDA margin of about 15.7% in 2023 before rising to 18.2% by 2026
- Working-capital inflow in 2023 of about EUR150 million following material outflow in 2022, before normalising from 2024
- Capex at about EUR1.2 billion in 2023 and EUR1 billion in 2024, and EUR800 million-EUR900 million a year during 2025-2026
- Dividend payment of EUR473 million in 2023; dividend pay-out ratio of about 40% of net profit during 2024-2026
- Acquisition of De Jong with cash outflow of about EUR800 million
- Divestment of paper mills for about EUR378 million by 1H23
- No further significant divestments and acquisitions until 2026 except for potential divestment of business in Beihai, China, which is not incorporated into the current rating case.

## Financial Data

## Stora Enso Oyj

(EURm)	Historical			Forecast		
	2020	2021	2022	2023	2024	2025
<b>Summary income statement</b>						
Gross revenue	8,553.0	10,164.0	11,680.0	11,188.4	11,206.8	11,437.1
Revenue growth (%)	-14.9	18.8	14.9	-4.2	0.2	2.1
EBITDA (before income from associates)	941.0	1,680.0	2,165.0	1,761.7	1,899.2	2,019.5
EBITDA margin (%)	11.0	16.5	18.5	15.7	16.9	17.7
EBITDAR	1,065.0	1,680.0	2,165.0	1,761.7	1,899.2	2,019.5
EBITDAR margin (%)	12.5	16.5	18.5	15.7	16.9	17.7
EBIT	448.0	1,193.0	1,694.0	1,223.7	1,355.2	1,469.5
EBIT margin (%)	5.2	11.7	14.5	10.9	12.1	12.8
Gross interest expense	-120.0	-110.0	-128.0	-120.8	-117.1	-123.2
Pretax income (including associate income/loss)	773.0	1,420.0	1,858.0	1,201.5	1,333.6	1,442.2
<b>Summary balance sheet</b>						
Readily available cash and equivalents	1,511.0	1,331.0	1,767.0	1,206.1	1,193.0	1,197.5
Debt	4,481.0	3,665.0	3,829.0	3,759.0	3,450.0	3,072.0
Lease-adjusted debt	5,473.0	3,665.0	3,829.0	3,759.0	3,450.0	3,072.0
Net debt	2,970.0	2,334.0	2,062.0	2,552.9	2,257.0	1,874.5
<b>Summary cash flow statement</b>						
EBITDA	941.0	1,680.0	2,165.0	1,761.7	1,899.2	2,019.5
Cash interest paid	-103.0	-106.0	-102.0	-120.8	-117.1	-123.2
Cash tax	-82.0	-136.0	-178.0	-143.0	-160.0	-173.1
Dividends received less dividends paid to minorities (inflow/(out)flow)	36.0	16.0	25.0	15.0	15.0	15.0
Other items before FFO	89.0	-17.0	70.0	0.0	0.0	0.0
Funds flow from operations	883.0	1,439.0	1,993.0	1,516.5	1,637.5	1,739.2
FFO margin (%)	10.3	14.2	17.1	13.6	14.6	15.2
Change in working capital	294.0	-53.0	-470.0	157.6	100.2	-29.9
Cash flow from operations (Fitch defined)	1,177.0	1,386.0	1,523.0	1,674.1	1,737.8	1,709.2
Total non-operating/nonrecurring cash flow	—	—	—	—	—	—
Capex	-661.0	-644.0	-704.0	—	—	—
Capital intensity (capex/revenue) (%)	7.7	6.3	6.0	—	—	—
Common dividends	-223.0	-237.0	-434.0	—	—	—
Free cash flow	293.0	505.0	385.0	—	—	—
Net acquisitions and divestitures	14.0	160.0	-52.0	—	—	—
Other investing and financing cash flow items	16.0	143.0	119.0	—	—	—
Net debt proceeds	583.0	-980.0	-15.0	-70.0	-309.0	-378.0
Net equity proceeds	-6.0	-3.0	-1.0	0.0	0.0	0.0
Total change in cash	900.0	-175.0	436.0	-560.9	-13.1	4.5
<b>Leverage ratios (x)</b>						
EBITDA leverage	4.6	2.2	1.7	2.1	1.8	1.5
EBITDA net leverage	3.0	1.4	0.9	1.4	1.2	0.9
EBITDAR leverage	5.0	2.2	1.7	2.1	1.8	1.5
EBITDAR net leverage	3.6	1.4	0.9	1.4	1.2	0.9
EBITDAR net fixed charge coverage	4.9	16.3	24.6	15.2	16.4	16.6
FFO adjusted leverage	4.9	2.4	1.8	2.3	2.0	1.7
FFO adjusted net leverage	3.6	1.5	1.0	1.6	1.3	1.0
FFO leverage	4.6	2.4	1.8	2.3	2.0	1.7
FFO net leverage	3.0	1.5	1.0	1.6	1.3	1.0
<b>Calculations for forecast publication</b>						
Capex, dividends, acquisitions and other items before FCF	-870.0	-721.0	-1,190.0	-2,165.0	-1,441.9	-1,326.7
Free cash flow after acquisitions and divestitures	307.0	665.0	333.0	-490.9	295.9	382.5
Free cash flow margin (after net acquisitions) (%)	3.6	6.5	2.9	-4.4	2.6	3.3

(EUR m)	Historical			Forecast		
	2020	2021	2022	2023	2024	2025
FFO interest coverage	9.6	14.6	20.4	13.5	15.0	15.1
FFO fixed charge coverage	4.9	14.6	20.4	13.5	15.0	15.1
EBITDAR fixed charge coverage	4.9	16.0	21.5	14.7	16.3	16.5
EBITDA interest coverage	9.5	16.0	21.5	14.7	16.3	16.5
<b>Additional metrics</b>						
CFO-capex/debt (%)	11.5	20.2	21.4	11.3	21.4	26.3
CFO-capex/net debt (%)	17.4	31.8	39.7	16.6	32.7	43.2
CFO/capex (%)	178.1	215.2	216.3	133.9	173.8	189.9

Source: Fitch Ratings, Fitch Solutions, Stora Enso Oyj

**How to Interpret the Forecast Presented**

The forecast presented above is based on Fitch Ratings' internally produced, conservative rating case forecast. It does not represent the forecast of the rated issuer. The forecast set out above is only one component used by Fitch Ratings to assign a rating or determine a rating outlook, and the information in the forecast reflects material but not exhaustive elements of Fitch Ratings' rating assumptions for the issuer's financial performance. As such, it cannot be used to establish a rating, and it should not be relied on for that purpose. Fitch Ratings' forecasts are constructed using a proprietary internal forecasting tool, which employs Fitch Ratings' own assumptions on operating and financial performance that may not reflect the assumptions that you would make. Fitch Ratings' own definitions of financial terms such as EBITDA, debt or free cash flow may differ from your own such definitions. Fitch Ratings may be granted access, from time to time, to confidential information on certain elements of the issuer's forward planning. Certain elements of such information may be omitted from this forecast, even where they are included in Fitch Ratings' own internal deliberations, where Fitch Ratings, at its sole discretion, considers the data may be potentially sensitive in a commercial, legal or regulatory context. The forecast (as with the entirety of this report) is produced strictly subject to the disclaimers set out at the end of this report. Fitch Ratings may update the forecast in future reports but assumes no responsibility to do so. Original financial statement data for historical periods is processed by Fitch Solutions on behalf of Fitch Ratings. Key financial adjustments and all financial forecasts credited to Fitch Ratings are generated by rating agency staff.

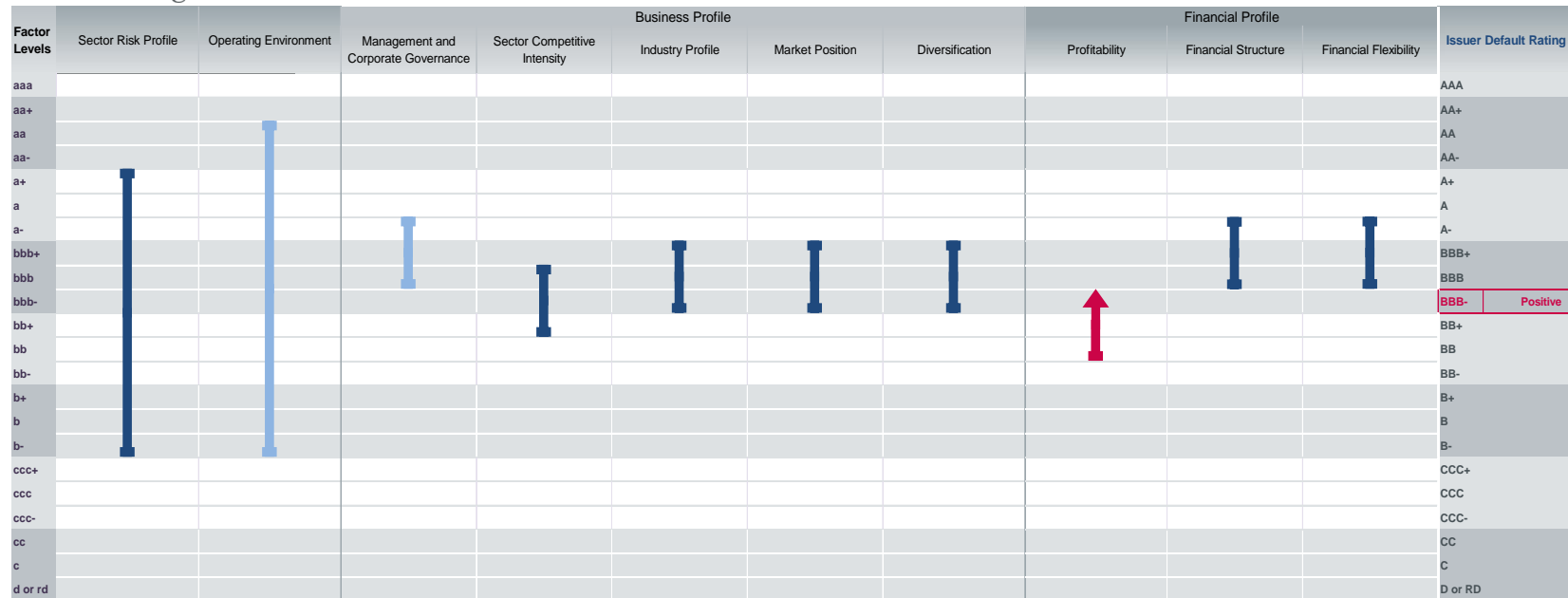
## Ratings Navigator

**Stora Enso Oyj**

ESG Relevance:



**Corporates Ratings Navigator**  
Generic



### Bar Chart Legend:

Vertical Bars = Range of Rating Factor

Bar Arrows = Rating Factor Outlook

Bar Colors = Relative Importance

Higher Importance

Average Importance

Lower Importance

Positive

Negative

Evolving

Stable



**Operating Environment**

aa+	Economic Environment	a	Strong combination of countries where economic value is created and where assets are located.
aa	Financial Access		Very strong combination of issuer specific funding characteristics and of the strength of the relevant local financial market.
	Systemic Governance	aa	Systemic governance (eg rule of law, corruption, government effectiveness) of the issuer's country of incorporation consistent with 'aa'
b-			
ccc+			

**Sector Competitive Intensity**

bbb+	Industry Structure	bb	Highly competitive industry with multiple players of comparable size.
bbb	Barriers to Entry/Exit	bbb	Moderate barriers to entry. Incumbents are generally strongly established but successful new entrants have emerged over time.
bbb-	Relative Power in Value Chain	bbb	Balanced relative bargaining power with suppliers and customers.
bb+			
bb			

**Market Position**

a-	Market Share	bbb	Top-five player in most markets or leader in a niche with some threats of substitution within the industry.
bbb+	Competitive Advantage	bbb	Some competitive advantages with reasonably good sustainability.
bbb	Operating Efficiency	bbb	Return on invested capital in line with industry average.
bbb-			
bb+			

**Profitability**

bbb	EBITDA Margin or EBITDAR Margin	b	15% or 15%
bbb-	EBIT Margin	bbb	12%
bb+	FFO Margin	a	14%
bb	FCF Margin	a	3.50%
bb-	Volatility of Profitability	bbb	Volatility of profits in line with industry average.

**Financial Flexibility**

a	Financial Discipline	a	Clear commitment to maintain a conservative policy with only modest deviations allowed.
a-	Liquidity	bbb	One year liquidity ratio above 1.25x. Well-spread maturity schedule of debt but funding may be less diversified.
bbb+	EBITDA Interest Coverage or EBITDAR Fixed Charge Coverage	bbb	7x or 4.5x
bbb	FFO Interest Coverage or FFO Fixed Charge Cover	a	10x or 6x
bbb-	FX Exposure	bbb	Some exposure of profitability to FX movements and/or debt/cash-flow match. Effective hedging in place.

**How to Read This Page:** The left column shows the three-notch band assessment for the overall Factor, illustrated by a bar. The right column breaks down the Factor into Sub-Factors, with a description appropriate for each Sub-Factor and its corresponding category.

**Management and Corporate Governance**

a	Management Strategy	a	Coherent strategy and good track record in implementation.
a-	Governance Structure	bbb	Good CG track record but effectiveness/independence of board less obvious. No evidence of abuse of power even with ownership concentration.
bbb+	Group Structure	bbb	Some group complexity leading to somewhat less transparent accounting statements. No significant related-party transactions.
bbb	Financial Transparency	a	High quality and timely financial reporting.
bbb-	Financial Sponsor Attitude (LBO only)	n.a.	

**Industry Profile**

a-	Long-Term Growth Potential	bbb	Mature industry. Traditional markets may be under some pressure but opportunities arise in new markets.
bbb+	Volatility of Demand	bbb	Demand volatility in line with economic cycles.
bbb	Threat of Substitutes	bbb	Facing substitutes of comparable quality but switching costs are significant.
bbb-			
bb+			

**Diversification**

a-	Geographic Diversification	bbb	Some geographical diversification but imbalance between growth and mature markets.
bbb+	Product/End-Market	bbb	Exposure to at least three business lines or markets but with some performance correlation.
bbb			
bbb-			
bb+			

**Financial Structure**

a	EBITDA Leverage or EBITDAR Leverage	a	2.0x or 2.0x
a-	EBITDA Net Leverage or EBITDAR Net Leverage	a	1.5x or 1.5x
bbb+	FFO Leverage or FFO Adjusted Leverage	a	2.5x or 2.5x
bbb	(CFO-Capex)/Net Debt	bbb	12.5%
bbb-	Funding Structure (LBO only)	n.a.	

**Credit-Relevant ESG Derivation**

				Overall ESG	
Stora Enso Oyj has 1 ESG rating driver and 4 ESG potential rating drivers				key driver	0 issues
+	➡	Shifting social preferences; social resistance to major projects or operations that leads to delays or cost increases	driver	1	issues
				4	issues
➡	Governance is minimally relevant to the rating and is not currently a driver.		potential driver	4	issues
				7	issues
			not a rating driver	2	issues
				2	issues

For further details on Credit-Relevant ESG scoring, see page 3.

**Credit-Relevant ESG Derivation**

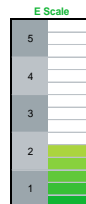
Stora Enso Oyj has 1 ESG rating driver and 4 ESG potential rating drivers

- + Stora Enso Oyj has exposure to social resistance or pressure or shifting consumer preferences which, in combination with other factors, impacts the rating.  
 ➔ Governance is minimally relevant to the rating and is not currently a driver.

Overall ESG Scale			
key driver	0	issues	5
driver	1	issues	4
potential driver	4	issues	3
not a rating driver	7	issues	2
	2	issues	1

**Environmental (E)**

General Issues	E Score	Sector-Specific Issues	Reference
GHG Emissions & Air Quality	1	GHG emissions; air quality	Diversification; Profitability; Financial Structure; Financial Flexibility
Energy Management	2	Energy management	Diversification; Profitability; Financial Structure; Financial Flexibility
Water & Wastewater Management	2	Water and wastewater management	Diversification; Profitability; Financial Structure; Financial Flexibility
Waste & Hazardous Materials Management; Ecological Impacts	2	Waste and hazardous materials management; ecological impacts; product design & lifecycle management; supply chain management - product	Diversification; Profitability; Financial Structure; Financial Flexibility
Exposure to Environmental Impacts	2	Impact of climate change and extreme weather events on assets and operations	Diversification; Sector Trend; Profitability; Financial Structure; Financial Flexibility


**How to Read This Page**

ESG scores range from 1 to 5 based on a 15-level color gradation. Red (5) is most relevant and green (1) is least relevant.

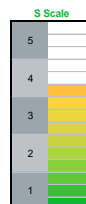
**The Environmental (E), Social (S) and Governance (G) tables** break out the individual components of the scale. The right-hand box shows the aggregate E, S, or G score. General Issues are relevant across all markets with Sector-Specific Issues unique to a particular industry group. Scores are assigned to each sector-specific issue. These scores signify the credit-relevance of the sector-specific issues to the issuing entity's overall credit rating. The Reference box highlights the factor(s) within which the corresponding ESG issues are captured in Fitch's credit analysis.

**The Credit-Relevant ESG Derivation table** shows the overall ESG score. This score signifies the credit relevance of combined E, S and G issues to the entity's credit rating. The three columns to the left of the overall ESG score summarize the issuing entity's sub-component ESG scores. The box on the far left identifies the some of the main ESG issues that are drivers or potential drivers of the issuing entity's credit rating (corresponding with scores of 3, 4 or 5) and provides a brief explanation for the score.

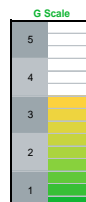
**Classification of ESG issues** has been developed from Fitch's sector ratings criteria. The General Issues and Sector-Specific Issues draw on the classification standards published by the United Nations Principles for Responsible Investing (PRI) and the Sustainability Accounting Standards Board (SASB).

**Social (S)**

General Issues	S Score	Sector-Specific Issues	Reference
Human Rights, Community Relations, Access & Affordability	1	Human rights; relationships with communities and/or land right holders; access and affordability	Management and Corporate Governance; Company's Market Position; Diversification; Profitability; Financial Flexibility
Customer Welfare - Fair Messaging, Privacy & Data Security	2	Customer privacy; data security; product quality and safety; customer welfare; selling practices and product labeling	Management and Corporate Governance; Sector Competitive Intensity; Company's Market Position; Profitability
Labor Relations & Practices	2	Impact of labor negotiations and employee (dis)satisfaction; supply chain management - labor; employee diversity and inclusion	Operating Environment; Diversification; Profitability; Financial Structure; Financial Flexibility
Employee Wellbeing	2	Employee health and safety	Diversification; Profitability; Financial Flexibility
Exposure to Social Impacts	4	Shifting social preferences; social resistance to major projects or operations that leads to delays or cost increases	Operating Environment; Sector Trend; Company's Market Position; Diversification; Profitability

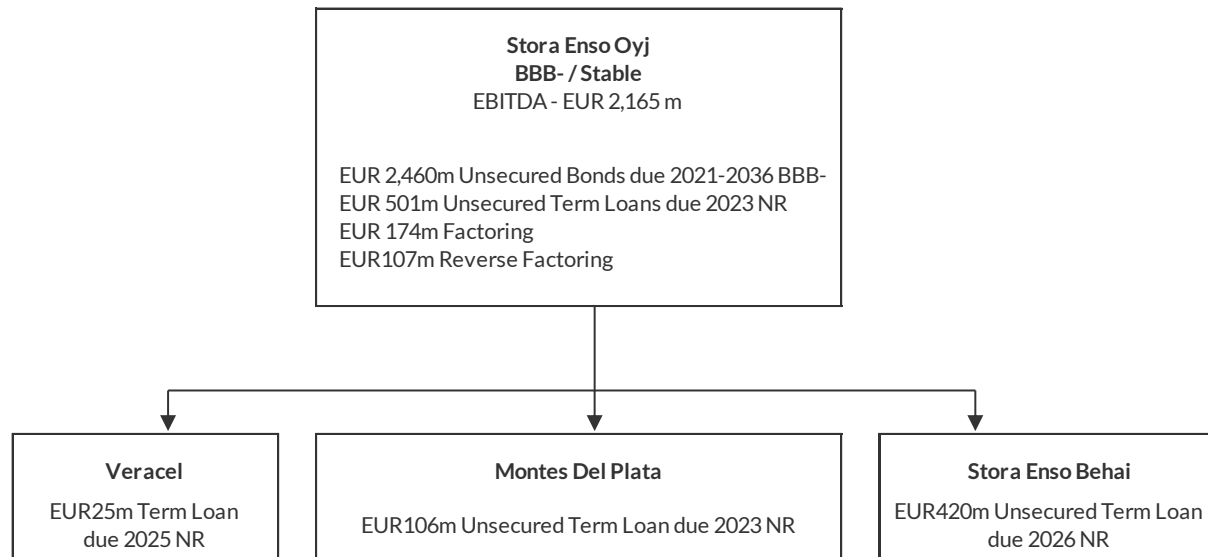

**Governance (G)**

General Issues	G Score	Sector-Specific Issues	Reference
Management Strategy	3	Strategy development and implementation	Management and Corporate Governance
Governance Structure	3	Board independence and effectiveness; ownership concentration	Management and Corporate Governance
Group Structure	3	Complexity, transparency and related-party transactions	Management and Corporate Governance
Financial Transparency	3	Quality and timing of financial disclosure	Management and Corporate Governance


**CREDIT-RELEVANT ESG SCALE**
**How relevant are E, S and G issues to the overall credit rating?**

5	Highly relevant, a key rating driver that has a significant impact on the rating on an individual basis. Equivalent to "higher" relative importance within Navigator.
4	Relevant to rating, not a key rating driver but has an impact on the rating in combination with other factors. Equivalent to "moderate" relative importance within Navigator.
3	Minimally relevant to rating, either very low impact or actively managed in a way that results in no impact on the entity rating. Equivalent to "lower" relative importance within Navigator.
2	Irrelevant to the entity rating but relevant to the sector.
1	Irrelevant to the entity rating and irrelevant to the sector.

## Simplified Group Structure Diagram



Source: Fitch ratings, Fitch Solutions, Stora Enso Oyj, As at Dec-2022

## Peer Financial Summary

Company	Issuer Default Rating	Financial statement date	Gross revenue (EURm)	EBITDA margin (%)	EBIT margin (%)	EBITDA net leverage (x)	FCF margin (%)
Stora Enso Oyj	BBB-						
	BBB-	2022	11,680	18.5	14.5	0.9	3.3
	BBB-	2021	10,164	16.5	11.7	1.4	5.0
	BBB-	2020	8,553	11.0	5.2	3.0	3.4
Suzano S.A.	BBB-						
	BBB-	2022	9,083	55.2	40.7	2.4	2.4
	BBB-	2021	6,365	55.8	39.0	2.8	25.1
	BBB-	2020	4,840	46.9	25.4	4.9	20.3
Smurfit Kappa Group plc	BBB-						
	BBB-	2021	10,107	15.1	10.5	1.7	-0.1
	BBB-	2020	8,530	16.2	10.7	1.5	4.6
	BB+	2019	9,048	16.7	11.6	2.1	3.1
Silgan Holdings Inc.	BB+						
	BB+	2022	6,011	14.2	10.1	3.1	7.2
	BB+	2021	5,020	14.3	9.9	3.8	4.6
Empresas CMPC S.A.	BBB						
	BBB	2022	7,333	26.4	20.5	2.0	-5.5
	BBB	2021	5,591	26.1	18.8	2.0	2.3
	BBB	2020	4,346	17.9	8.0	3.4	4.4
Celulosa Arauco y Constitucion S.A.	BBB						
	BBB	2021	5,614	32.4	22.7	2.3	-0.8
	BBB	2020	3,890	20.9	8.9	5.0	-12.0
	BBB	2019	4,744	19.7	8.3	4.2	-15.3

Source: Fitch Ratings

## Fitch Adjusted Financials

(EURm)	Notes and formulas	Reported values	Sum of adjustments	CORP- lease treatment	Other adjustments	Adjusted values
31 Dec 22						
<b>Income statement summary</b>						
Revenue		11,680				11,680
EBITDAR		2,232	-67	-67		2,165
EBITDAR after associates and minorities	(a)	2,257	-67	-67		2,190
Lease expense	(b)	0				0
EBITDA	(c)	2,232	-67	-67		2,165
EBITDA after associates and minorities	(d) = (a-b)	2,257	-67	-67		2,190
EBIT	(e)	1,597	97	-17	114	1,694
<b>Debt and cash summary</b>						
Other off-balance-sheet debt	(f)	0				0
Debt <sup>b</sup>	(g)	3,923	-94	-375	281	3,829
Lease-equivalent debt	(h)	0				0
Lease-adjusted debt	(i) = (g+h)	3,923	-94	-375	281	3,829
Readily available cash and equivalents	(j)	1,917	-150			1,767
Not readily available cash and equivalents		0	150			150
<b>Cash flow summary</b>						
EBITDA after associates and minorities	(d) = (a-b)	2,257	-67	-67		2,190
Preferred dividends (Paid)	(k)	0				0
Interest received	(l)	13				13
Interest (paid)	(m)	-119	17	17		-102
Cash tax (paid)		-178				-178
Other items before FFO		70				70
Funds from operations (FFO)	(n)	2,043	-50	-50		1,993
Change in working capital (Fitch-defined)		-461	-9		-9	-470
Cash flow from operations (CFO)	(o)	1,582	-59	-50	-9	1,523
Non-operating/nonrecurring cash flow		0				0
Capital (expenditures)	(p)	-704				-704
Common dividends (paid)		-434				-434
Free cash flow (FCF)		444	-59	-50	-9	385
<b>Gross leverage (x)</b>						
EBITDAR leverage <sup>a</sup>	(i/a)	1.7				1.7
FFO adjusted leverage	(i)/(n-m-l-k+b))	1.8				1.8
FFO leverage	(i-h)/(n-m-l-k)	1.8				1.8
EBITDA leverage <sup>a</sup>	(i-h)/d	1.7				1.7
(CFO-capex)/debt (%)	(o+p)/(i-h)	22.4%				21.4%
<b>Net leverage (x)</b>						
EBITDAR net leverage <sup>a</sup>	(i-j)/a	0.9				0.9
FFO adjusted net leverage	(i-j)/(n-m-l-k+b)	0.9				1.0
FFO net leverage	(i-h-j)/(n-m-l-k)	0.9				1.0
EBITDA net leverage <sup>a</sup>	(i-h-j)/d	0.9				0.9
(CFO-capex)/net debt (%)	(o+p)/(i-h-j)	43.8%				39.7%
<b>Coverage (x)</b>						
EBITDAR fixed charge coverage <sup>a</sup>	a/(-m+b)	19.0				21.5
EBITDA interest coverage <sup>a</sup>	d/(-m)	19.0				21.5
FFO fixed-charge coverage	(n-l-m-k+b)/(-m-k+b)	18.1				20.4
FFO interest coverage	(n-l-m-k)/(-m-k)	18.1				20.4

<sup>a</sup>EBITDA/R after dividends to associates and minorities.<sup>b</sup>Includes other off-balance-sheet debt.

Source: Fitch Ratings, Fitch Solutions, Stora Enso Oyj

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