

30 May 2023 – Neuss, Germany

Rating Action / Update:

Creditreform Rating has affirmed the unsolicited corporate issuer rating of Stora Enso Oyj, at **BBB**. The outlook remains **positive**.

Creditreform Rating (CRA) has affirmed the unsolicited, public corporate issuer ratings of Stora Enso Oyj – hereinafter referred as “Stora Enso” or “the Group” – as well as the unsolicited corporate issue rating of the long-term local currency senior unsecured notes issued by Stora Enso Oyj at **BBB** with a **positive** outlook. We also refer to the previous year’s rating report of 04.03.2022 and the press releases of 01.07.2022 and 22.12.2022, which contain further relevant information with respect to the unsolicited corporate issuer rating of Stora Enso Oyj.

Current relevant factors for the rating

The following considerations were of specific relevance for the rating assessment:

- Significantly higher revenues (and operating profit) during the 2022 business year
- Increasing cost pressures weighing down on segmental operating margins in both 2022 and 2023
- Structural changes in Paper business and disposal of several paper sites
- Exit from the Russian market
- Acquisition of De Jong Packaging Group completed in January 2023
- Expected cash outflows related to a ramp up in capital expenditure, particularly linked to the consumer board investment at the Oulu site

ESG-criteria:

CRA generally considers ESG factors (environment, social and governance) within its rating decisions. In the case of Stora Enso Oyj we have identified ESG factors with significant influence on the following categories, which is described in the sections below.

(E) Environment (S) Social (G) Governance

(E): Stora Enso has a well-defined sustainability framework and clearly defined science based targets with regard to its sustainability strategy. In terms of the environment, the Group has an overall positive net CO² removal¹ from the atmosphere of 16.2 million tons. This is achieved through sustainable management of its forest assets, as well as its products portfolio, which focuses on the substitution of fossil based products, and carbon storing.

In 2021 Stora Enso launched a new sustainability agenda. The Group aims to achieve a 50% reduction of CO² (Scope 1, 2, 3) emissions by the end of 2030 against the base year of 2019, and strives for a product portfolio of 100% technically recyclable products, while maintaining a level of at least 96% of owned and leased lands in wood production and harvesting covered by forest certification schemes. At the end of 2022 the reduction of fossil CO² emissions against 2019 was 27% (Scope 1, 2 and 3).

The Group also has a green bond framework, which links the proceeds of the bond issuance to sustainability targets. In total the Group issued 7 green bonds or bilateral loans in the period

¹ As calculated by the Swedish University of Agricultural Sciences in 2021, based on its production, forest and wood use and emission figures

Analysts

Rudger van Mook
Lead Analyst
R.vanMook@creditreform-rating.de

Artur Kapica
Co-Analyst
A.Kapica@creditreform-rating.de

Neuss, Germany

ESG factors are factors related to environment, social issues and, governance. For more information, please see the "Regulatory requirements". CRA generally takes ESG relevant factors into account, when assessing the rating object and discloses them when they have a significant influence on the creditworthiness of the rating object, leading to a change in the rating result or the outlook.

between 2019 and 2021 with a total nominal amount of EUR 1,500 million. 90% of these proceeds have been allocated to sustainable forest management, 8% to renewable, low-carbon and eco-efficient products, product technologies and processes and 2% to renewable energy and waste to energy. The Group did not issue any green bonds in 2022.

The EU Taxonomy is still under development and the forest industry and its main products are currently still largely out of the scope of the EU Taxonomy, which is why the categories reported on for Stora Enso Oyj with regard to the Taxonomy remain limited.

A general valid description of Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Rating result

The current rating attests Stora Enso Oyj a highly satisfactory level of creditworthiness, representing a low-to medium default risk. The main positive factors contributing to the rating result are the Group's leading market position, its high degree of diversification and its strong financial profile with strong cash flow generation and high deleveraging capabilities. Additionally, the Group has successfully changed its strategic growth focus from the paper market, which is in structural decline, to growth markets in renewable packaging, sustainable wood-based solutions, and bio-based solutions to replace fossil-based and hazardous materials. The integration of De Jong Packaging is going according to plan. We believe this to have a positive influence on the rating as the acquisition will accelerate growth in Stora Enso's renewable packaging business, give access to complementary markets and will increase EBITDA generation.

These factors are in part offset by the Group's high exposure to fluctuations in input costs. Despite the fact that approximately one third of its fiber supply comes from own forest assets and that the majority of electricity needs are covered by the Group's own production, fluctuations in these commodities significantly impact the Group's financial performance. Additionally, the market price development of other input costs such as logistics and commissions, chemicals and fillers as well as other costs also impact Stora Enso's performance. The high exposure to these price fluctuations are currently a limiting factor for the rating and have been made apparent since the last quarter of 2022 and the first quarter in 2023 when variable costs have been increasing disproportionately, which significantly affected the operating margins of the Group.

Outlook

The one-year outlook for the unsolicited corporate issuer rating remains **positive**. The divestures of the paper sites and the integration of De Jong Packaging are going according to plan and are in line with the Group's strategy to exit the paper markets and to put a stronger emphasis on sustainable growth markets. Additionally, the Group's strong financial profile and the effect of the change in our rating methodology exert upward pressure on the current rating result. However, we believe that the weakening demand and increasing cost pressures in Stora Enso's markets, as well as the anticipated ramp up in capital expenditure currently still outweighs the upwards pressure on the rating result. As a result we expect a slight deterioration in the 2023 Group's credit metrics against the 2022 business year.

Please note:

The scenarios are based on information available at the time of the rating. Within the forecast horizon, circumstances may occur that could lead to a change of the rating out of the indicated range.

Best-case scenario: BBB+

In our best-case scenario for one year, we assume a rating of BBB+. Such a scenario would be possible if the market demand in the Group's main segments would rebound and the increasing cost pressures would subside leading to a strong rebound in (operating results) and cash-flow.

Worst-case scenario: BBB-

In our worst-case scenario for one year, we assume a rating of BBB-. Such a scenario would be possible if the market demand would continue to weaken and the cost pressures would continue to increase without being able to pass on increasing costs to the customers. This, in combination with the increasing capital expenditure could lead to an increase in indebtedness and a strong deterioration in the Group's credit metrics.

Business development and outlook

During the 2022 business year, the Group was faced with lower volumes in paper and corrugated packaging deliveries as well as a reduction in production and wood product deliveries. The decline in these areas was largely driven by the Group's exit from its Russian operations with the divestment of three corrugated packaging plants and two sawmills in Russia. The significant change in paper production and deliveries was driven by the closures of the Veitsiluoto and Kvarnsveden production facilities in the third quarter of 2021. However, despite lower volumes Stora Enso managed to increase its revenues to EUR 11,680 million (2021: EUR 10,164 million) mainly resulting from significant price hikes. This also led to a considerably higher EBITDA and EBIT, which increased to EUR 2,322 million (2021: EUR 1,972 million) and EUR 1,788 million (2021: EUR 1,423 million respectively). On a consolidated level the Group has outpaced inflationary pressure with an operating margin that improved to 14.98% (2021: 13.83%). However, when assessing individual business segments it becomes clear that the increase in operating margin was predominantly driven by structural changes in the paper segment and to a lesser extent due to the Biomaterials segment. The residual segments all showed a significant decrease in operating margin, indicating that the increasing input costs could not be fully compensated by the higher prices. Increasing cost pressure, especially in packaging and wood products, had already showed adverse effects on the Group's margin at the end of 2022.

Table 1: Overview of segmental revenues and reported EBIT | Source: Stora Enso Oyj annual report 2022

In Mio. EUR	Revenues		Reported EBIT	
	2021	2022	2021	2022
Dezember 31				
Packaging Materials	3,898	4,690	552	595
Packaging Solutions	723	737	23	-101
Biomaterials	1,728	2,180	506	668
Wood Products	1,872	2,195	363	253
Forest	2,311	2,519	622	523
Paper	1,703	1,772	-423	172
Other	1,092	1,097	-67	-59
Eliminations	-3,163	-3,512	-8	-41
Total	10,164	11,680	1,568	2,009

In total the Group's EBIT was positively influenced by several non-recurring and non-operational items. The Group recorded a positive effect of EUR 363 million, caused mainly by fair value changes in its biological assets, as well as in its at-equity accounted participation in Tornator Oyj. This was however partially offset by negative effects of EUR 245 million, the majority of which was related to losses on disposal and impairments due to the exit from Russian operations. Adjusted by non-recurring and non-operational items the EBIT margin improved against the prior year, but was widely driven by the paper segment and to a lesser extent the Biomaterials division. The profit margin in the other segments deteriorated due to increased (operating) costs. The Group's finance income and expenses remained relatively stable, leading to a significantly higher net profit of EUR 1,536 million (2021: EUR 1,268 million).

As a result of the improved (operating) results the Group's 2022 credit metrics improved slightly against the prior year. The Group's equity ratio increased to 59.17% (2021: 56.51%), due to the increased net result and OCI, although this was partially driven by fair value changes in biological assets, forest assets and equity instruments. The Group's internal financing power of the Group remains strong with net total debt /EBITDA adj. of 2.47 (2021: 3.51). Its cash generation remained strong as well, but was slightly curbed by cash-outflows with respect to working capital with cash flow from operating activities at EUR 1,582 million (2021: EUR 1,476 million). Despite strong operating cash flow, the cash-flow after investments and dividend payments was significantly lower than the prior year at EUR 406 million (2021: EUR 790 million) due to increased capital expenditure and investments in biological assets, a comparably lower cash-inflow from disposals (as the sale consideration for the divested Group companies are predominantly to be received at future dates), and a significantly higher cash dividend, which somewhat limited its deleveraging capabilities.

Table 2: Financials of Stora Enso Oyj | Source: Stora Enso Oyj annual report 2022, standardized by CRA

Stora Enso Oyj Selected key figures of the financial statement analysis Basis: Annual accounts and report of 31.12. (IAS, Group)	CRA standardized figures ²	
	2021	2022
Sales (million EUR)	10,164	11,680
EBITDA (million EUR)	1,972	2,322
EBIT (million EUR)	1,423	1,788
EAT (million EUR)	1,269	1,537
EAT after transfer (million EUR)	1,266	1,550
Total assets (million EUR)	15,933	17,090
Equity ratio (%)	56.51	59.17
Capital lock-up period (days)	61.19	57.22
Short-term capital lock-up (%)	8.80	14.27
Net total debt / EBITDA adj. (factor)	3.51	2.47
Ratio of interest expenses to total debt (%)	2.71	2.72
Return on Investment (%)	8.88	9.87

² For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. For example, when calculating the analytical equity ratio, deferred tax assets, goodwill (entirely or partly), and internally-generated intangible assets are subtracted from the original equity, whilst deferred tax liabilities are added. Net total debt takes all balance sheet liabilities into account. Therefore, the key financial figures shown often deviate from the original values of the company.

The last quarter of 2022 had already shown a more challenging business environment for Stora Enso. This continued during the first quarter of 2023 as market demand continued to weaken and increasing costs continued to put pressure on the Group's margins. During the first quarter of 2023 Stora Enso generated revenues of EUR 2,721 million (Q1 2022: EUR 2,798 million), operational EBITDA and EBIT of EUR 399 million (Q1 2022: EUR 662 million) and EUR 234 million (Q1 2022: EUR 503 million) respectively and EAT of EUR 185 million (Q1 2022: EUR 185 million). Revenues declined slightly, as the higher sales prices, as well as the integration of De Jong packaging Group were offset by declining deliveries and structural changes such as, the divestment of paper sites in Nymölla and Maxau and the exit from Russia. Operating profit was mainly negatively impacted by the lower volumes and disproportionately increasing variable costs. As a result, the Group's reported operational EBIT margin decreased to 8.6% (Q1 2022: 18.0%). The decreased operating profit, as well as cash outflows due to working capital led to a lower operating cash flow of EUR 254 million (Q1 2022: EUR 403 million) and cash flow after investments and dividend payments was significantly negative due to the higher capex, the investment in De Jong Packaging Group and the payment of the Group's dividend over the year 2022.

As of the end of the first quarter 2023 the liquidity situation of the Group is good with cash and cash equivalents of EUR 1,238 million and committed fully undrawn credit facilities of EUR 900 million and access to EUR 1,050 million of statutory pension premium loans in Finland. It is the policy of the Group to have available cash and cash equivalents and undrawn committed credit facilities to cover all debt maturing within the following 12 months, including supply chain financing and factoring.

We expect the financial key ratio for 2023 for Stora Enso to deteriorate slightly against the prior year, as we believe that the Group will increase indebtedness and that (operating) results will be significantly lower than in the 2022 business year. The 2023 business year, in our view, will remain very challenging as demand is expected to remain weak and high inflationary pressure could continue to put pressure on the Group's margins, weighing on operating results. Moreover, we expect an increase in indebtedness as operating cash flow will most likely remain affected by lower operating results, and the Group forecasts expected capital expenditure to range between EUR 1,200 and 1,300 million, leading to negative FCF.

In December 2022 the Group announced its intention to divest its consumer board and forest operations sites in Beihai, China. The sale of the investment would alleviate some pressure on the Group's cash flows during the business year. The integration of De Jong Packaging Material is proceeding according to plan and is expected to deliver average annual synergies of EUR 30 million over the cycle in the midterm.

Issue rating

The rating objects of this issue rating are exclusively the long-term senior unsecured Notes, denominated in euro, issued by Stora Enso Oyj, and which are included in the list of ECB-eligible marketable assets. The ECB list of eligible marketable assets can be found on the website of the ECB.

The notes have been issued under the EMTN program with its latest prospectus of 5 May 2023. This EMTN program amounts to EUR 4 billion. The senior Notes and coupons under the EMTN program constitute direct, unconditional, unsecured, unsubordinated obligations of the Issuer, and rank at least pari passu among themselves and with all other present and future unsecured obligations of the issuer.

Corporate issue rating result

We have provided the long-term EUR-denominated, unsubordinated and unsecured debt securities issued by Stora Enso Oyj. with an unsolicited corporate issue rating of **BBB** with **positive** outlook. The rating is predominantly based on the corporate rating of Stora Enso Oyj. In consideration of our corporate issue rating methodology, the rating is based on the unsolicited corporate issuer rating of Stora Enso Oyj. The terms and conditions did not give rise to the application of an extraordinary notching to the unsolicited corporate issuer rating. Other types of debt instruments or issues denominated in other currencies of the issuer have not been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Overview

Table 3: Overview of CRA Ratings | Source: CRA

Rating objects	Details	
	Date	Rating
Stora Enso Oyj.	26.05.2023	BBB / positive
Long-Term Local-Currency Senior-Unsecured Issues	26.05.2023	BBB / positive
Other	--	n.r.

Table 4: Overview of 2023 Euro Medium Term Note Program | Source: Stora Enso Oyj, Base Prospectus dated 5 May 2023

Overview 2023 EMTN Program			
Volume	EUR 4,000,000,000	Maturity	Depending on the respective bond
Issuer	Stora Enso Oyj	Coupon	Depending on the respective bond
Arranger	Citigroup	Currency	Depending on the respective bond
Credit enhancement	none	ISIN	Depending on the respective bond

All future LT LC senior unsecured Notes issued by Stora Enso Oyj with similar conditions to the current EMTN program, denominated in euros and included in the list of ECB-eligible marketable assets will, until further notice, receive the same ratings as the current LT LC senior unsecured Notes issued under the EMTN program. Notes issued under the program in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Appendix

Rating history

The rating history is available under:

<https://www.creditreform-rating.de/en/ratings/published-ratings.html>

Table 5: Corporate issuer rating of Stora Enso Oyj | Source: CRA

Event	Rating date	Publication date	Monitoring period	Result
Initial Rating	04.03.2022	10.03.2022	30.06.2022	BBB / stable

Table 6: LT LC senior unsecured issues by Stora Enso Oyj | Source: CRA

Event	Rating date	Publication date	Monitoring period	Result
Initial rating	04.03.2022	10.03.2022	30.06.2022	BBB / stable

Regulatory requirements

The rating³ was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

The present rating is, in the regulatory sense, an unsolicited rating that is public. The analysis was carried out on a voluntary basis by Creditreform Rating AG, which was not commissioned by the Issuer or any other third party to prepare the present rating.

The rating is based on the analysis of published information and on internal evaluation methods for the assessment of companies and issues. The rating object was informed of the intention of creating or updating an unsolicited rating before the rating was determined.

The rating object participated in the creation of the rating as follows:

With Rated Entity or Related Third Party Participation	No
With access to Internal Documents	No
With Access to Management	No

³ In these regulatory requirements the term "rating" is used in relation to all ratings issued by Creditreform Rating AG in connection to this report. This may concern several companies and their various issues.

The rating was conducted based on the following information.

A management meeting did not take place within the framework of the rating process.

The documents and information gathered were sufficient to meet the requirements of Creditreform Rating AG's rating methodologies.

The rating was conducted based on the following rating methodologies and the basic document.

Rating methodology	Version number	Date
Corporate Ratings	2.4	July 2022
Non-financial Corporate Issue Ratings	1.0	October 2016
Rating Criteria and Definitions	1.3	January 2018

The documents contain a description of the rating categories and a definition of default.

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Rudger van Mook	Lead-analyst	C.Konieczny@creditreform-rating.de
Artur Kapica	Analyst	C.Konieczny@creditreform-rating.de

The rating was approved by the following person (person approving credit ratings, PAC):

Name	Function	Mail-Address
Philip Michaelis	PAC	P.Michaelis@creditreform-rating.de

On 30 May 2023, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 30 May 2023. There has not been a subsequent change to the rating.

The rating will be monitored until Creditreform Rating AG withdraws the rating. The rating can be adjusted as part of the monitoring, if crucial assessment parameters change.

In 2011, Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on this registration, Creditreform Rating AG is allowed to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

ESG-factors

You can find out whether ESG factors were relevant to the rating in the upper section of this rating report "Relevant rating factors".

A general valid description for Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Conflict of interests

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or in approving credit ratings and rating outlooks.

In the event of providing ancillary services to the rated entity, Creditreform Rating AG will disclose all ancillary services in the credit rating report at this point:

No ancillary services in the regulatory sense were carried out for this rating object.

Rules on the presentation of credit ratings and rating outlooks

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our "Rating Committee Policy", all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, Creditreform Rating AG has used following substantially material sources:

Corporate issuer rating:

1. Annual report
2. Website
3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating
2. Documents on issues / instruments

There are no other attributes and limitations of the credit rating or rating outlook other than those displayed on the Creditreform Rating AG website. Furthermore, Creditreform Rating AG considers as satisfactory the quality and extent of information available on the rated entity. With respect to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the time of disclosure of the credit rating to the rated entity and the public disclosure, no amendments were made to the credit rating.

The Basic Data Information Card indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating report and indicates how the different methodologies or other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings and best-case scenario credit ratings are explained.

The date at which the credit rating was initially released for distribution and the date when it was last updated, including any rating outlooks, is indicated clearly and prominently in the Basic Data Information Card as a "rating action"; initial release is indicated as "initial rating", other updates are indicated as an "update", "upgrade" or "downgrade", "not rated", "confirmed", "selective default" or "default".

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the Basic Data Information Card.

In accordance with Article 11 (2) EU-Regulation (EC) No 1060/2009, a registered or certified credit rating agency shall make available, in a central repository established by ESMA, information on its historical performance data including the rating transition frequency and information about credit ratings issued in the past and on their changes. Requested data are available at the [ESMA website](#).

An explanatory statement of the meaning of Creditreform Rating AG's default rates are available in the credit rating methodologies disclosed on the website.

Disclaimer

Any rating performed by Creditreform Rating AG is subject to the Creditreform Rating AG Code of Conduct, which has been published on the web pages of Creditreform Rating AG. In this Code of Conduct, Creditreform Rating AG commits itself – systematically and with due diligence – to establish its independent and objective opinion as to the sustainability, risks and opportunities concerning the enterprise or the issue under review.

Future events are uncertain, and forecasts are necessarily based on assessments and assumptions. This rating is therefore no statement of fact, but an opinion. For this reason, Creditreform Rating AG cannot be held liable for the consequences of decisions made on the basis of any of their ratings. Neither should these ratings be construed as recommendations for investors, buyers or sellers. They should only be used by market participants (entrepreneurs, bankers, investors etc.) as one factor among others when arriving at corporate or investment decisions. Ratings are not meant to be used as substitutes for one's own research, inquiries and assessments.

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Creditreform Rating AG

Contact information

Creditreform Rating AG

Europadamm 2-6
D-41460 Neuss

Phone: +49 (0) 2131 / 109-626
Telefax: +49 (0) 2131 / 109-627

E-Mail: info@creditreform-rating.de
Web: www.creditreform-rating.de

CEO: Dr. Michael Munsch
Chairman of the Board: Michael Bruns

HR Neuss B 10522