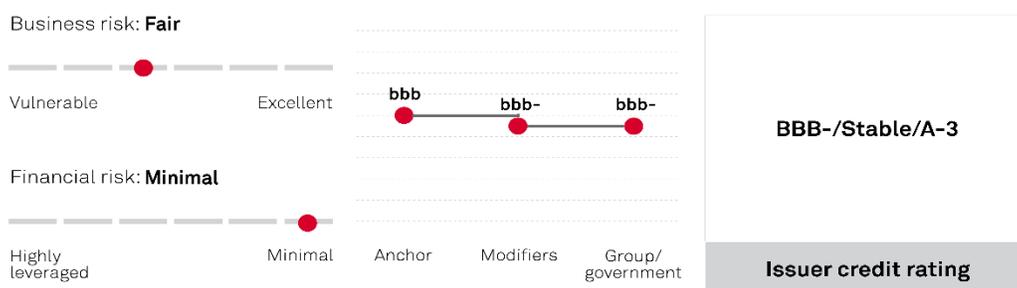


Metsa Board Corp.

March 31, 2023

Ratings Score Snapshot



PRIMARY CONTACT

Lina Sanchez
Frankfurt
49-0-1622104469
lina.sanchez
@spglobal.com

SECONDARY CONTACT

Desiree I Menjivar
London
44-20-7176-7822
desiree.menjivar
@spglobal.com

Credit Highlights

Overview

Key strengths

Leading market positions in folding boxboards and white kraftliner.

Vertical integration into pulp and energy, limiting exposure to input cost volatility.

Premium positioning.

Key risks

Cyclical and capital-intensive nature of pulp and paper industry.

Financial policy allows for additional leverage.

Rating capped by credit quality of parent Metsä Group.

Concentrated asset base, product portfolio, and geographic exposure.

In 2023 we expect S&P Global Ratings-adjusted EBITDA to remain at similar levels to 2022, supported by Metsä Fibre's dividend contribution. We forecast no revenue growth for 2023, due to flat volumes and marginal increases in paperboard prices, which we expect will be offset by declining pulp prices. We expect Metsä Board will generate S&P Global Ratings-adjusted EBITDA of €450 million-€460 million in 2023, broadly in line with 2022. We anticipate S&P Global Ratings-adjusted EBITDA margins of 18.3%-18.8% in 2023 (from 18.2% in 2022), supported by €80 million-€85 million of dividends received from Metsä Fibre. The latter reflects Metsä

Metsä Board Corp.

Fiber's strong performance in 2022, when exceptionally favorable market conditions supported record high pulp prices. In our view, this will offset any negative impact from potential cost increases and declining selling prices for pulp.

In 2024 we expect revenue to decline by 2%-3%, as price declines in paperboard and pulp outweigh the uplift from higher paperboard volumes (due to the ramp-up of production at the Kemi and Husum mills). In 2024, we expect EBITDA margins to decline to 17.0%-17.5%, due to lower dividends from Metsä Fibre. We anticipate these dividends at €35 million-€40 million on the back of lower, more normalized pulp prices.

In our view, Metsä Board has limited exposure to natural gas. Metsä Board is 80% self-sufficient in terms of electricity, its main source of energy. This includes Metsä Board's direct share in the nuclear power plants operated by Teollisuuden Voima Oyj (TVO) through its shareholding in Pohjolan Voima Oy (PVO), from which it buys electricity at cost. Therefore, Metsä Board has only limited exposure to potential local gas shortages in the winter of 2023. This is further mitigated by its investments in alternative energy sources such as liquefied natural gas and oil.

Metsä Board's large capital expenditure (capex) continues to be majorly funded from internal cash flows and therefore has limited impact on the company's credit metrics. Metsä Board will spend €250 million-€300 million in 2023 and a somewhat lower amount in 2024, mostly on capacity expansions in the Husum and Kemi mills. The group expects to increase Kemi's annual white kraftliner capacity by 40,000 tonnes by 2023 and Husum's annual folding boxboard capacity by 200,000 tonnes by 2024. We also expect these projects will reduce the group's marginal production cost as well as its marginal water and energy needs. These investments will cap free operating cash flow (FOCF) at €130 million-€140 million in 2023 and €135 million-€145 million in 2024. That said, we forecast leverage will remain below 1.0x in 2023 and 2024, commensurate with our current rating.

Our view of Metsä Group's creditworthiness remains unchanged at 'bbb-'. We continue to assess Metsä Board as a highly strategic subsidiary of Metsä Group, given the close integration and strong commitment of support from the parent. As a result, our rating on Metsä Board is capped by Metsä Group's group credit profile. The latter is supported by the group's low leverage and high product diversification, partly offset by its exposure to the volatile sawn timber and pulp segments. Our assessment is constrained, though, by Metsä Group's maximum leverage tolerance (minimum equity ratio of 40%), which gives it significant headroom to increase leverage beyond current levels. We believe that large investment plans at Metsä Board, Metsä Fibre, and Metsä Tissue may weigh on the group-level credit metrics over 2023-2025, but they will remain consistent with a minimal financial risk profile, in our view.

Outlook

The stable outlook indicates that we expect Metsä Board's leading market positions in Europe to support our weighted-average adjusted leverage at below 2x over the next 24 months.

Downside scenario

We could lower the rating if we no longer anticipated that Metsä Board could maintain adjusted debt to EBITDA below 2.0x on a weighted-average basis over a sustained period. This could happen if Metsä Board's operational performance weakened, for example, due to a significant fall in paperboard prices, a material increase in wood prices, or operational issues that led to margin pressures.

Furthermore, we could downgrade Metsä Board if we revised Metsä Group's group credit profile to 'bb+' or lower.

Upside scenario

We view an upgrade as unlikely, as it would require Metsä Board to publicly commit to a more-conservative financial policy, including capping S&P Global Ratings-adjusted debt to EBITDA at 1.5x. An upgrade would also require S&P Global Ratings-adjusted funds from operations (FFO) to debt to exceed 60% on a sustainable basis.

We would not raise our rating on Metsä Board unless we had revised Metsä Group's group credit profile to 'bbb' or higher. This would imply a low risk of leverage increasing from current levels--for example, through major debt-funded investments. It would also imply that our current assessment of the business risk profile remained unchanged.

Our Base-Case Scenario

Assumptions

- Real respective GDP growth rates of 0.5% (2023) and 2.0% (2024) in Europe, -0.1% (2023) and 1.4% (2024) in North America, and 4.4% (2023) and 4.5% (2024) in Asia-Pacific.
- No revenue growth in 2023 based on flat volumes in paperboard and pulp, a modest increase in paperboard selling prices and a drop in pulp prices. A revenue decline of 2%-3% in 2024 mainly as further price decreases outweigh the positive impact of additional paperboard volumes (from capacity additions at Kemi and Husum).
- S&P Global Ratings-adjusted EBITDA margin to increase to 18.3%-18.8% in 2023 (from 18.2% in 2022), primarily because of higher dividends (about €80 million-€85 million) received from Metsä Fibre. Excluding the dividend received, we forecast a marginal decline in EBITDA margins due to lower pulp prices. In 2024, we expect a slightly lower S&P Global Ratings-adjusted EBITDA margin of 17.0%-17.5% as the dividend from Metsä Fibre declines to €35 million-€40 million (because of the expected decline in pulp prices in 2023).
- Capex of €250 million- €300 million in 2023, falling below €250 million in 2024, reflecting paperboard capacity expansions.
- Working capital outflows of €50 million in 2023 due to higher inventory valuation (wood costs are likely to continue increasing) and a further €20 million outflow in 2024 driven by ramp up of capacity in Kemi and Husum mills.
- €80 million-€85 million dividends received from Metsä Fibre in 2023; decreasing to €35 million-€40 million in 2024.
- Annual dividend payments of about €216 million in 2023, decreasing to about €185 million in 2024. These amounts include dividends paid to Norra Skog for its ownership in the Husum pulp mill.
- No acquisitions.

Key metrics

Mil. €	2021a	2022a	2023f	2023f
Revenue	2,084	2,480	2,400-2,500	2,350-2,450
Revenue growth (%)	10.3	19.0	0.0	(2)-(3)
EBITDA	324	452	450-460	410-420
EBITDA margin (%)	15.6	18.2	18.0-18.5	17.0-17.5
Funds from operations (FFO)	278	373	350-360	320-330
Capital expenditure	210	266	250-300	220-250
Free operating cash flow (FOCF)	116	(42)	130-140	135-145
Dividends	92	157	216	180-190
Debt	0	106	190-200	225-275
Debt to EBITDA (x)	0	0.2	0.3-0.8	0.5-1.0
FFO to debt (%)	N/A	352	180-190	120-140
FOCF to debt (%)	N/A	(40)	65-75	55-65

*All figures adjusted by S&P Global Ratings. Among other adjustments, our adjusted measure of EBITDA includes dividends received from Metsä Fibre and excludes its share of results from associated companies (mainly Metsä Fibre).

Metsa Board Corp.

a--Actual. e--Estimate. f--Forecast. N/A--Not applicable.

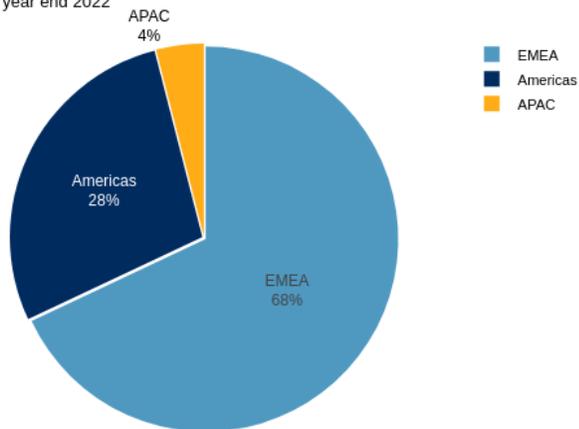
Company Description

Metsä Board is a Finland-based paperboard and pulp producer. The group produces folding boxboards (57% of sales), white kraftliners (25%), and market pulp (15%). Other operations account for the remaining 3%. Its paperboards are ultimately used in packaging applications in the consumer goods, retail, and food service industries.

The group generated €2.5 billion sales in 2022, most of which in EMEA (see chart below) . The group has eight mills (in Finland and Sweden) and approximately 2,248 employees. It is listed on the Nasdaq Helsinki.

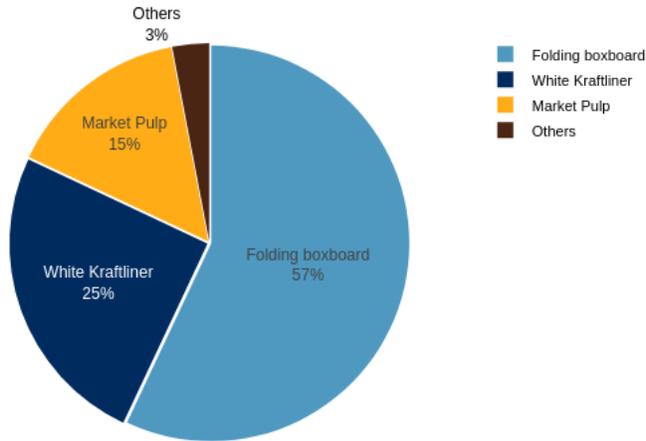
Net Sales By Geography

As of year end 2022



Source: Metsa Board 2022 Report

Net Sales By Product
As of year end 2022



Source: Metsa Board 2022 Report

Peer Comparison

Metsä Board's closest rated peers in EMEA include Holmen AB (BBB+/Stable/A-2), Svenska Cellulosa AB SCA (SCA; BBB/Stable/A-2), and UPM-Kymmene Corp. (UPM; BBB/Positive/A-2).

Holmen has higher EBITDA margins due to a higher degree of vertical integration and higher product diversification. The latter is offset by its exposure to the structurally declining printing paper segment.

SCA is larger and has stronger EBITDA margins due to a very efficient asset base. The company's position benefitted from its exit from the publication paper segment and high self-sufficiency rate in terms of wood sourcing, energy, electricity, and logistics.

UPM is much larger and much more diversified in terms of products and geographies. However, it also still has high exposure to the declining communication papers segment.

Metsa Board Corp.--Peer Comparisons

	Metsa Board Corp.	Holmen AB	Svenska Cellulosa AB SCA	UPM-Kymmene Corp.
Foreign currency issuer credit rating	BBB-/Stable/A-3	BBB+/Stable/A-2	BBB/Stable/A-2	BBB/Positive/A-2
Local currency issuer credit rating	BBB-/Stable/A-3	BBB+/Stable/A-2	BBB/Stable/A-2	BBB/Positive/A-2
Period	Annual	Annual	Annual	Annual
Period ending	2022-12-31	2022-12-31	2022-12-31	2022-12-31
Mil.	EUR	EUR	EUR	EUR
Revenue	2,480	2,393	1,867	11,720
EBITDA	452	755	754	2,525
Funds from operations (FFO)	373	603	644	2,149

Metsa Board Corp.--Peer Comparisons

Interest	12	5	17	62
Cash interest paid	12	4	33	63
Operating cash flow (OCF)	224	492	553	488
Capital expenditure	266	125	521	1,457
Free operating cash flow (FOCF)	(42)	367	33	(969)
Discretionary cash flow (DCF)	(207)	200	(172)	(1,689)
Cash and short-term investments	356	174	75	2,067
Gross available cash	356	174	75	2,067
Debt	106	211	1,050	3,410
Equity	2,255	5,112	8,649	12,878
EBITDA margin (%)	18.2	31.5	40.4	21.5
Return on capital (%)	22.6	12.8	6.8	13.8
EBITDA interest coverage (x)	36.9	137.8	44.7	40.7
FFO cash interest coverage (x)	32.0	141.0	20.8	35.1
Debt/EBITDA (x)	0.2	0.3	1.4	1.4
FFO/debt (%)	352.2	286.4	61.3	63.0
OCF/debt (%)	210.9	233.8	52.7	14.3
FOCF/debt (%)	(39.9)	174.5	3.1	(28.4)
DCF/debt (%)	(195.5)	95.1	(16.4)	(49.5)

Business Risk

Our business risk assessment reflects Metsä Board's leading positions in fresh fiber boards, its premium positioning, and its vertical integration into pulp. The group is the leading producer of white kraftliners and folding boxboards in Europe and has market shares in excess of 30% in both. Metsä Board is vertically integrated into pulp via its 24.9% stake in Metsä Fibre and its own pulp production. In 2022, the group sold close to 500,000 tonnes of pulp, which accounted for 15% of its sales.

Our assessment also reflects its relatively small size as well as its narrow product and geographical scope compared with larger forest and paper groups such as Mondi Group and UPM. The group's production units are concentrated in Finland and Sweden.

In 2022, the group's adjusted EBITDA margins increased to 18.2% (from 15.6% in 2021) because of the €59 million dividend it received from Metsä Fibre (compared with no dividend in 2021). Given record high pulp prices in 2022, we expect Metsä Fibre to pay high dividends in 2023 of €80 million-€85 million. We expect these to decrease to €35 million-€40 million in 2024 as pulp prices come down.

Metsä Board is massively investing in its Husum pulp mill and in capacity expansion projects in Husum (folding boxboard) and Kemi (white kraftliner), which will reduce operating costs and generate efficiencies.

Financial Risk

Our assessment of Metsä Board's financial risk profile is based on its very low leverage and high capex. S&P Global Ratings-adjusted leverage increased slightly to 0.2x in 2022 (from 0.0x in 2021) because of its expansionary investments. We expect it will remain below 1.0x throughout 2023 and 2024. Capex is predicted at €250 million-€300 million in 2023 and somewhat lower in 2024. Most of this will relate to capacity expansions in Husum (folding boxboard) and Kemi (white kraftliner). We understand that Metsä Board will fund these

Metsä Board Corp.

investments from internally generated cash flows. These investments will cap FOCF generation at €130 million–€140 million in 2023 and €135 million–€145 million in 2024. We do not anticipate any acquisitions.

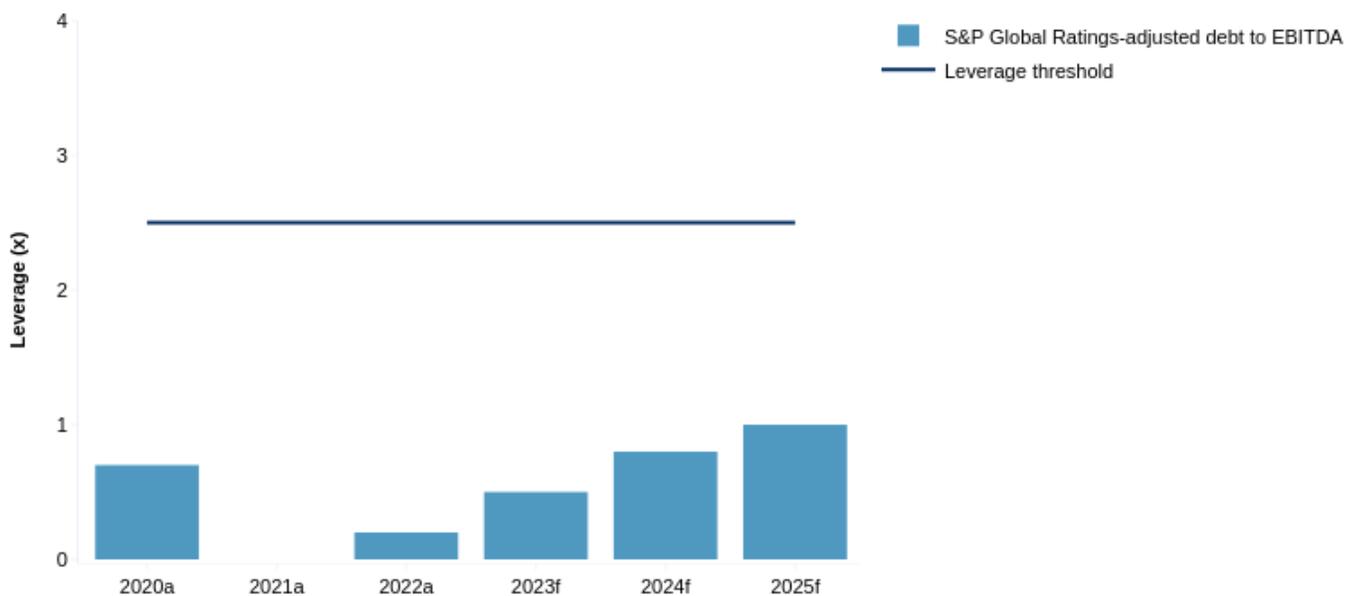
When calculating our adjusted credit ratios, we remove the results of Metsä Fibre (€163 million share in 2022) from reported EBITDA and add the dividends received from that entity. Other adjustments to EBITDA are less material and are highlighted in the financial reconciliation table below.

Our S&P Global Ratings-adjusted credit ratios include in our adjusted debt as of Dec. 31, 2022 (€106 million), around €16 million of leases and minimal adjustments for pension liabilities. Our debt calculations are net of the company's cash balances.

We estimate adjusted debt to EBITDA at 0.3x-0.8x at year-end 2023 and expect this ratio to stay below 1.0x throughout 2024.

Although Metsä Board's publicly communicated financial leverage tolerance allows for an increase in reported leverage to 2.5x (2.5x-3.0x on an S&P Global Ratings-adjusted basis), we do not anticipate that it will fully use this additional headroom. Nevertheless, we still apply a one-notch negative financial policy modifier to account for the risk that it could re-leverage above its current minimal financial risk profile.

Metsä Board's Leverage Trajectory



Source: S&P Global Ratings.
a--actual. f--forecast.

Metsä Board Corp.--Financial Summary

Period ending	Dec-31-2017	Dec-31-2018	Dec-31-2019	Dec-31-2020	Dec-31-2021	Dec-31-2022
---------------	-------------	-------------	-------------	-------------	-------------	-------------

Metsa Board Corp.--Financial Summary

Reporting period	2017a	2018a	2019a	2020a	2021a	2022a
Display currency (mil.)	EUR	EUR	EUR	EUR	EUR	EUR
Revenues	1,849	1,944	1,932	1,890	2,084	2,480
EBITDA	263	244	282	332	324	452
Funds from operations (FFO)	217	210	247	275	278	373
Interest expense	35	19	15	11	11	12
Cash interest paid	36	18	16	12	15	12
Operating cash flow (OCF)	239	154	201	308	326	224
Capital expenditure	65	68	94	154	210	266
Free operating cash flow (FOCF)	175	87	106	154	116	(42)
Discretionary cash flow (DCF)	107	12	3	68	24	(207)
Cash and short-term investments	215	110	134	214	524	356
Gross available cash	215	110	134	214	524	356
Debt	380	355	319	246	0	106
Common equity	1,167	1,323	1,338	1,384	1,846	2,255
Adjusted ratios						
EBITDA margin (%)	14.3	12.5	14.6	17.6	15.6	18.2
Return on capital (%)	12.5	14.7	10.1	13.0	20.0	22.6
EBITDA interest coverage (x)	7.6	12.7	18.5	29.4	29.7	36.9
FFO cash interest coverage (x)	7.0	12.6	16.2	24.7	19.3	32.0
Debt/EBITDA (x)	1.4	1.5	1.1	0.7	0.0	0.2
FFO/debt (%)	57.2	59.1	77.7	112.1	NM	352.2
OCF/debt (%)	63.0	43.4	62.9	125.2	NM	210.9
FOCF/debt (%)	46.0	24.4	33.3	62.5	NM	(39.9)
DCF/debt (%)	28.2	3.4	1.0	27.8	NM	(195.5)

Reconciliation Of Metsa Board Corp. Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

Financial year	Shareholder		Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
	Debt	Equity								
Dec-31-2022										
Company reported amounts	437	2,082	2,480	615	532	4	452	232	157	274
Cash taxes paid	-	-	-	-	-	-	(67)	-	-	-
Cash interest paid	-	-	-	-	-	-	(4)	-	-	-
Lease liabilities	16	-	-	-	-	-	-	-	-	-

Reconciliation Of Metsa Board Corp. Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

	Shareholder Debt	Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Incremental lease liabilities	4	-	-	-	0	0	(0)	(0)	-	-
Postretirement benefit obligations/deferred compensation	3	-	-	-	-	-	-	-	-	-
Accessible cash and liquid investments	(356)	-	-	-	-	-	-	-	-	-
Capitalized interest	-	-	-	-	-	8	(8)	(8)	-	(8)
Dividends from equity investments	-	-	-	59	-	-	-	-	-	-
Asset-retirement obligations	2	-	-	-	-	-	-	-	-	-
Income (expense) of unconsolid. cos.	-	-	-	(163)	-	-	-	-	-	-
Nonoperating income (expense)	-	-	-	-	3	-	-	-	-	-
Noncontrolling/minority interest	-	173	-	-	-	-	-	-	-	-
EBITDA - Gain/(loss) on disposals of PP&E	-	-	-	(56)	(56)	-	-	-	-	-
EBITDA: Business divestments	-	-	-	(3)	(3)	-	-	-	-	-
Total adjustments	(331)	173	-	(163)	(56)	8	(79)	(8)	-	(8)
S&P Global Ratings adjusted	Debt	Equity	Revenue	EBITDA	EBIT	Interest expense	Funds from Operations	Operating cash flow	Dividends	Capital expenditure
	106	2,255	2,480	452	476	12	373	224	157	266

Liquidity

We assess Metsä Board's liquidity as strong and believe that the company's liquidity sources will comfortably cover liquidity uses by over 1.5x in the 12 months from Jan. 1, 2023, and over 1.0x in the subsequent 12 months. The company has a long-dated debt maturity profile, access to numerous funding sources, well-established relationship with banks, and a satisfactory standing in the credit markets.

Principal liquidity sources

- €346 million of cash on balance sheet as of Dec. 31, 2022. This includes around €339 million of short-term deposits with Metsä Group Treasury under a cash-pooling arrangement. We understand that Metsä Board has access to these funds at short notice;
- Expected cash FFO of €450 million-€460 million;
- Access to loans from pension funds of about €228 million; and
- €200 million available under the revolving credit facility (RCF) due in 2027.

Principal liquidity uses

- Capex of €275 million;
- Dividend payments of about €216 million;
- Working capital outflows of €70 million, including seasonal needs of about €20 million; and
- Debt amortization of about €18 million.

Covenant Analysis

Requirements

The documentation of the €150 million term loan and €200 million RCF specifies a maximum net gearing ratio of 100%, tested on a quarterly basis.

Compliance expectations

We expect Metsä Board will comfortably comply with its covenant over the two-year forecast horizon.

Environmental, Social, And Governance

ESG Credit Indicators



ESG credit indicators provide additional disclosure and transparency at the entity level and reflect S&P Global Ratings' opinion of the influence that environmental, social, and governance factors have on our credit rating analysis. They are not a sustainability rating or an S&P Global Ratings ESG Evaluation. The extent of the influence of these factors is reflected on an alphanumeric 1-5 scale where 1 = positive, 2 = neutral, 3 = moderately negative, 4 = negative, and 5 = very negative. For more information, see our commentary "ESG Credit Indicators: Definition And Applications," published Oct. 13, 2021.

Environmental factors are an overall neutral consideration in our credit rating analysis of Metsä Board Corp. A pure-play paperboard producer, it is part of a group with extensive forest assets. Metsä Board owns a 24.9% stake in Metsä Fibre, which produces pulp, sawn timber, biochemicals, and bioenergy. It does not own any forest assets. Environmental trends have benefited Metsä Board because it produces sustainable paper packaging that is progressively replacing plastic. Pollution risks stem from its use of chemicals to produce some types of paperboard, but there have been no polluting incidents.

Group Influence

Given Metsä Board's close integration with its parent Metsä Group, we consider that Metsä Board cannot be rated higher than our assessment of the creditworthiness of Metsä Group--currently 'bbb-'. We assess Metsä Board as a highly strategic subsidiary of Metsä Group, which in turn is a subsidiary of Metsäliitto Cooperative. This is because:

- Metsä Group is unlikely to sell Metsä Board in the near term, in our view, given that it provides forward integration in the forest and paper products value chain;

Metsä Board Corp.

- Metsä Group's senior management has a track record and long-term commitment of support for Metsä Board;
- Metsä Board accounts for about 33 % of group sales; and
- Metsä Board's reputation, brand, name, and treasury management are closely tied to those of Metsä Group.

We assess Metsä Group's group credit profile (GCP) as 'bbb-'. This is supported by the very low consolidated leverage, modest growth prospects among its paperboard and pulp segments, and strong product diversification. However, we think that these strengths are offset by exposure to cyclical and volatile pulp and sawn timber segments, tissue operations with below-average profitability, and the fact that there are large minority shareholders across the Metsä Group structure, which somewhat distorts the consolidated financials.

The GCP is further constrained by the large investment plans in Kemi (bioproduct mill and expansion of paperboard capacity), Husum (folding box board capacity expansion), and Mariestad (renewal and expansion of tissue mill). We expect these projects (and potential new investments in Äänekoski and Kaskinen) to lead to somewhat increased leverage at the group level in the medium term.

Issue Ratings--Subordination Risk Analysis

Capital structure

As of Dec. 31, 2022, Metsä Board's debt comprised a €250 million senior unsecured bond due 2027, a €100 million senior unsecured syndicated term loan due 2025, and about €88 million of bilateral bank loans due 2030, all of them issued by Metsä Board Oyj.

Analytical conclusions

The €250 million senior unsecured fixed-rate notes due 2027 issued by Metsä Board Corp. are rated 'BBB-', the same as the issuer credit rating, as no sources of significant subordination have been identified.

Rating Component Scores

Foreign currency issuer credit rating	BBB-/Stable/A-3
Local currency issuer credit rating	BBB-/Stable/A-3
Business risk	Fair
Country risk	Low
Industry risk	Moderately High
Competitive position	Fair
Financial risk	Minimal
Cash flow/leverage	Minimal
Anchor	bbb
Diversification/portfolio effect	Neutral (no impact)
Capital structure	Neutral (no impact)
Financial policy	Negative (-1 notch)
Liquidity	Strong (no impact)
Management and governance	Satisfactory (no impact)
Comparable rating analysis	Neutral (no impact)
Stand-alone credit profile	bbb-

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011

Ratings Detail (as of March 31, 2023)*

Metsa Board Corp.

Issuer Credit Rating	BBB-/Stable/A-3
Senior Unsecured	BBB-

Issuer Credit Ratings History

28-Feb-2018	BBB-/Stable/A-3
24-Feb-2016	BB+/Positive/B
18-Feb-2015	BB/Stable/B

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings credit ratings on the global scale are comparable across countries. S&P Global Ratings credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

Copyright © 2023 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgment at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.