

CREDIT OPINION

24 January 2024

Update



RATINGS

Turkiye Sise ve Cam Fabrikalari A.S.

Domicile	Turkiye
Long Term Rating	B3
Type	LT Corporate Family Ratings
Outlook	Positive

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Turkiye Sise ve Cam Fabrikalari A.S.

Update following change in outlook to positive

Summary

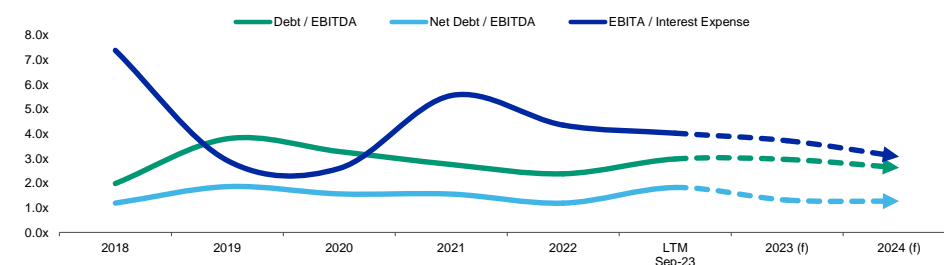
On 19 January 2024, we changed the outlook of [Turkiye Sise ve Cam Fabrikalari A.S.](#) (Sisecam) to positive from stable and affirmed the company's ratings at B3. The rating action is a direct consequence of the ratings affirmation of the Government of Türkiye B3 long-term issuer rating and change in outlook to positive on 12 January 2024.

Sisecam's B3 Corporate Family Rating (CFR) reflects the company's strong credit fundamentals, and benefits from (1) a leading market position in Türkiye; (2) a balanced revenue and product mix derived from its architectural glass, automotive glass, glassware, glass packaging and chemicals businesses which mitigates single product line exposure; and (3) adequate financial profile with Moody's adjusted debt/EBITDA of 3.0x for the 12 months to 30 September 2023. Sisecam also benefits from its access to foreign currency revenues from international operations and exports. The company generated 22% of its revenue from the EU based operations while an additional 14% was generated from the US based soda ash business during the first nine months of 2023.

The rating reflects Sisecam's tight liquidity position on the back of high levels of short term debt maturities (45% of total reported borrowings) and capital investment requirements in the next 12 months. With improved levels of liquidity, the company's exposure to Türkiye's political, legal, fiscal and regulatory environment could constrain Sisecam's ratings at Türkiye's foreign currency bond ceiling of B2.

Exhibit 1

Sisecam's credit metrics will remain adequate despite high capex and foreign currency volatility



All ratios are calculated using Moody's estimates and standard adjustments. Moody's estimates (f) are Moody's opinion and do not represent the views of the issuer. Periods are financial year-end unless indicated; LTM = last twelve months.

Source: Moody's Investors Service

Credit strengths

- » Leading market position in Türkiye
- » Adequate geographic diversification outside Türkiye
- » Balanced revenue and product mix
- » Moderate leverage and adequate financial metrics

Credit challenges

- » Exposure to Türkiye and Türkiye-based financial institutions
- » High maintenance capital requirements and high raw material costs
- » Low historical free cash flow generation and expected cash outflows during 2024 and 2025
- » Tight liquidity for the next 12 to 18 months with high levels of short term debt maturities

Rating outlook

The positive rating outlook mirrors that of the Government of Türkiye, reflecting Sisecam's exposure to the country's political, legal, fiscal and regulatory environment.

Factors that could lead to an upgrade

Absent sovereign considerations, positive pressure on the rating would require a strengthening of Sisecam's liquidity position including significantly reduced reliance on short-term facilities. An upgrade would also require no material deterioration in the company's operating and financial performance.

Factors that could lead to a downgrade

Downward pressure on the rating could occur if Sisecam's liquidity position weakens and if the company is not able to secure funding for its upcoming debt maturities and capital expenditure projects. Additionally, Sisecam could be downgraded in case of a downgrade of Türkiye's sovereign rating.

Key indicators

Exhibit 2

(in USD billions)	2018	2019	2020	2021	2022	LTM Sep-23	2023 (f)	2024 (f)
Revenue	3.3	3.2	3.1	3.7	5.8	6.0	5.6	6.8
EBITA Margin	19%	17%	18%	27%	17%	17%	17%	15%
EBITA / Interest Expense	7.4x	2.9x	2.6x	5.6x	4.4x	4.0x	3.7x	3.1x
Debt / EBITDA	2.0x	3.8x	3.3x	2.8x	2.4x	3.0x	3.0x	2.6x
Retained Cash Flow / Net Debt	57%	29%	32%	28%	77%	46%	49%	39%
Free Cash Flow / Debt	-8%	-5%	3%	8%	1%	0%	-6%	-12%

All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's estimates (f) are Moody's opinion and do not represent the views of the issuer. Periods are financial year-end unless indicated; LTM = last twelve months.

Source: Moody's Investors Service

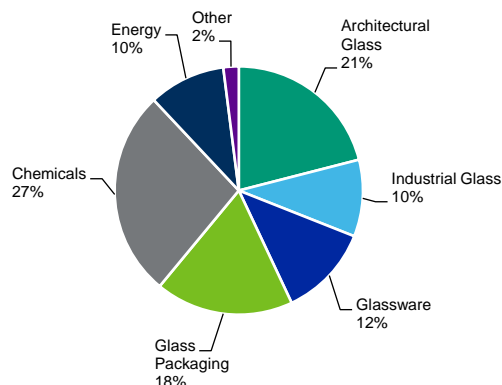
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

Profile

Founded in 1935, Türkiye Sise ve Cam Fabrikalari A.S. is a Turkish industrial manufacturer of glass products including flat glass (architectural glass and auto glass), glassware and packaging, as well as soda ash and chromium-based chemicals. The company operates in Eastern Europe, Western Europe, CIS and the United States. Sisecam is 51% owned by [Türkiye İs Bankası A.Ş.](#) (İsbank, B3 stable), 7% by Efes Holding A.Ş., 2% of shares are held by Sisecam itself and 40% listed on Borsa İstanbul. Sisecam reported consolidated revenues of TRY124 billion and a Moody's adjusted operating profit of TRY18.0 billion in the 12 months to 30 September 2023.

Exhibit 3

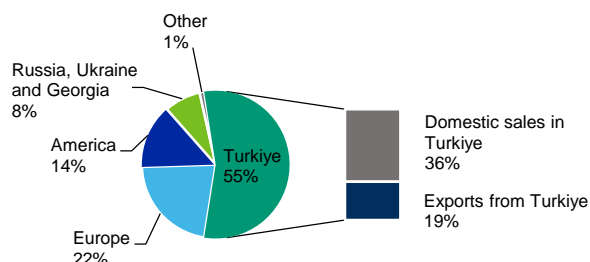
Revenue breakdown by product



Nine months to 30 September 2023
Source: Company data

Exhibit 4

Revenue breakdown by geography



Nine months to 30 September 2023
Source: Company data

Detailed credit considerations

Leading market position in Türkiye and geographic diversification, a credit strength

Sisecam's ratings reflect the competitive advantages of being the market leader in Türkiye across its core product lines. The group benefits from a diversified revenue base through sales of products such as architectural glass, automotive glass, food and beverage glass packaging, retail and wholesale glassware, and soda ash and chromium-based chemicals. The individual products have different demand drivers and varying sensitivities to the economic cycle, with the glass packaging and chemicals segment historically being relatively stable and resilient to economic downturns, while flat glass and glassware are more cyclical in nature. During 2023, Sisecam's performance has remained resilient amid improvement in the energy business and the industrial glass and glassware business lines while volumes materially dropped in the architectural glass, glass packaging and chemicals businesses driven by a slowdown in global economic activity. At the same time, the glass manufacturing sector is a very capital intensive industry requiring substantial and recurring maintenance capital spending.

Sisecam's rating takes into consideration the scale and geographic footprint of its operations. The company's operations span Türkiye, Western and Eastern Europe, the CIS and the United States with 64% of total revenue for the first nine months of 2023 generated outside Türkiye (including 19% of Türkiye based exports). Around 55% of the company's exports from Türkiye are sold to the European Union.

The geographic diversity reduces Sisecam's exposure to Türkiye, but it also exposes the company to additional geopolitical risks and potential changes in regulations and policies. The company's exposure to Russia, Ukraine and Georgia has reduced to less than 10% of revenue generated in the first nine months of 2023 compared to 15% during 2021. The operations in the CIS region continue to be managed independently with local labor and debt raised in local currencies limiting Sisecam's exposure to the Russia-Ukraine conflict.

Global economic uncertainties persist and we forecast G-20 real GDP growth of 1.7% in 2023 and 1.0% in 2024 versus 2.7% in 2022. The Moody's [Global Manufacturing Outlook](#) remains negative driven by persistent macroeconomic uncertainties, high inflation

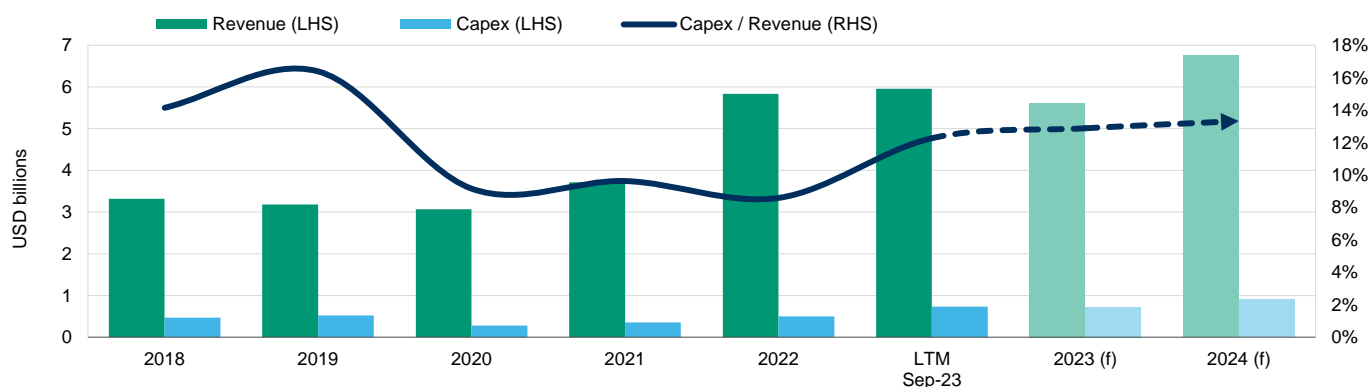
and supply-chain risks. Additionally, a sustained deterioration in the macroeconomic environment in Türkiye would lead to a more challenging business and operating environment for Sisecam, particularly in the flat glass and glassware segments.

Investment in US will weaken credit metrics and bear execution risks

In 2021 Sisecam announced the acquisition of a 60% stake in Ciner Resources, a natural soda ash mining facility in Wyoming and two natural soda ash solution mining projects. The company plans to develop a large scale soda ash mining facility project with production running at full capacity estimated by 2028. These investments will increase Sisecam's controlled annual soda ash production capacity to more than 10 million tons (mt) once the project is completed, from 5mt today. However, the investments are capital intensive, carry a degree of execution risk through construction and development of the mines and will weaken Sisecam's credit metrics until 2025 as debt is incurred to partly finance the project.

Exhibit 5

Capital expenditure needs will grow and weaken credit metrics until 2024



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Source: Moody's Investors Service

The acquisition and mass production of natural soda ash will improve Sisecam's profitability in the long term because natural soda is significantly cheaper to produce than its synthetic equivalent and benefits from better environmental credentials due to its significantly less energy and water-intensive production process. The investments will also allow Sisecam to gain a foothold in the United States and are a step towards a larger expansion into glass manufacturing in the country, which is one of the long-term strategic objectives of the company.

During 2023, the company also announced an additional investment in a US West Coast based port operation which will benefit the company with the export operations of the ongoing soda ash investment.

Market overcapacity driven by large scale investments will pressure pricing

Sisecam's growth ambitions of being among the top three glass producers in its operating fields globally has positive credit implications but raise short term investment and execution risks as well as liquidity pressures. Sisecam has a track record of managing its investments and new capacity to avoid creating material excess capacity in the market. However there are risks associated with the large scale of the projects and time required to complete them. To avoid material increase in overcapacity, the company manages the cold repair schedules of its furnaces to mitigate the risk. Internal demand in Türkiye during 2023 was not as expected and due to high capacity, Sisecam materially reduced production, through cold repairs and planned maintenance.

The glass manufacturing industry requires substantial and recurring maintenance capital spending. In 2021, Sisecam announced the construction of a €255 million glass packaging greenfield project in Hungary with two furnaces with 330K tons of annual production capacity to be fully operational by 2025 and growth plans in Türkiye which include (1) a 5th furnace investment for glass packaging in the Eskisehir plant to increase capacity by 155k tons per year; (2) a new flat glass plant in Mersin with a 400K tons annual production capacity, expected to reach full capacity by 2024-2025; (3) a new flat glass furnace in Türkiye with a 200K tons annual production capacity dedicated to auto glass production; and (4) a new frosted glass furnace which will add 244k tons annual production capacity to the company's flat glass line, as well as an energy glass processing line. The incremental capacity of over 1.3 million tons per year will

be fully operational between 2023 and 2025. During 2023 the company also announced an investment in the mining field to ensure the raw material supply in its new flat glass and frosted glass investments in Mersin.

Sisecam's capital spending, which includes maintenance and projects, has averaged 11% of revenue between 2017 and 2022 with a peak of 16% in 2019. We expect these levels to remain above 10% during the next 3 years, weakening the company's cash flows as it delivers on its capacity expansion projects. We understand that between 15% and 25% of the company's annual capex program is focused on cold repairs and maintenance capex which we expect will continue to play a key part on the overcapacity management.

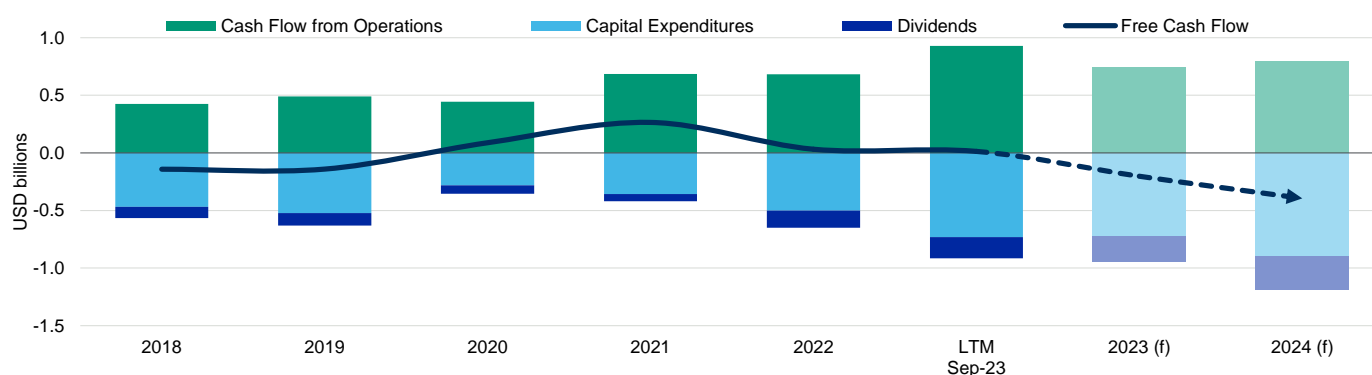
Healthy financial profile despite currency volatility

Sisecam continues to display a healthy financial profile. The company has maintained an average Moody's-adjusted debt/EBITDA below 3.0x over the past five year, despite the large currency depreciation over the period which substantially increased the value of its foreign currency-denominated debt in Turkish lira terms. We expect the company's Moody's-adjusted debt/EBITDA to be sustained below 3.0x in the 2023-2025 period but free cash flow generation will remain negative in 2023 and 2024 because of the announced investment plans.

Inflation levels continue to remain high globally and with a greater effect in the Turkish economy driven by a depreciating lira and elevated raw material and energy costs. The production of glass is energy intensive, and Sisecam is a large consumer of natural gas. During 2022, natural gas tariffs in Türkiye increased by more than 500% year over year adding pressure to Sisecam's Moody's adjusted EBITA margin which dropped to 17.5% in 2022 from 27.3% in 2021. We expect profitability levels to remain under pressure in 2023 and 2024 despite natural gas price discounts in 2023 due to lower production levels and continued high inflation, particularly in Türkiye. Pressure on Sisecam's profitability levels will continue while Türkiye's domestic demand recovers although historically profitability has been supported by product pricing management across all business lines.

Exhibit 6

Free cash flow will turn negative in 2023 and decline further in 2024 due to capital intensive projects



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Source: Moody's Investors Service

Sisecam is managing its foreign-currency exposure prudently. The company had around 84% of its debt (c. \$2.3 billion) denominated in US dollar and Euro as of 30 September 2023. This is partly offset by large US dollar and euro-denominated cash reserves that provide a currency hedge against depreciation in the Turkish lira.

Exposure to Türkiye is a key credit challenge

Sisecam is domiciled in Türkiye and generated 36% of its revenues in Türkiye in the first nine months of 2023, with another 19% exported from the country. As such, it is materially exposed to Türkiye's political, legal, fiscal and regulatory environment. The country in recent years has experienced unpredictable government policy shifts fueled by unorthodox measures in an attempt to stabilize the currency and restore foreign-currency buffers which has posed a risk for Türkiye's corporates.

While Sisecam's operations are deeply embedded in Türkiye's economy, the company generates 64% of its year-to-date 2023 revenues internationally, including 8% from operations in Russia which are completely autonomous. This provides access to foreign

currencies and reduces the company's exposure to the Turkish lira. However, the volatility in foreign exchange rates and the Turkish lira depreciation suffered since the second half of 2021 and in particular in 2023 following the general elections held in May, continues to be a risk for companies in Türkiye that have liabilities denominated in hard currencies. Sisecam has more than 80% of its debt instruments denominated in USD or Euro. For the 2023 financial year, the lira depreciated about 57% (2022:40%) against the dollar with periods of high volatility.

ESG considerations

Türkiye Sise ve Cam Fabrikalari A.S.'s ESG credit impact score is CIS-3

Exhibit 7

ESG credit impact score

CIS-3



ESG considerations have a limited impact on the current rating, with potential for greater negative impact over time.

Source: Moody's Investors Service

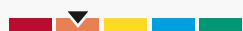
Sisecam's CIS-3 indicates the ESG considerations have a limited impact on the current credit rating with potential for greater negative impact over time especially through exposure to environmental and governance risks. The main ESG risks relate to governance considerations on the back of the company's tight liquidity profile for the next 12 to 18 months. The company's large short term debt maturities and capital expenditure projects increase Sisecam's liquidity risk. We also consider that Sisecam has a negative exposure to ESG risks because of its significant carbon footprint, and moderately negative exposure to social risks.

Exhibit 8

ESG issuer profile scores

ENVIRONMENTAL

E-4



SOCIAL

S-3



GOVERNANCE

G-3



Source: Moody's Investors Service

Environmental

Sisecam's **E-4** environmental issuer profile score reflects the company's exposure to carbon transition risks reflecting its significant use of natural gas in the glass manufacturing process. While glass manufacturing will remain an energy-intensive process, its carbon footprint can be reduced using renewable energy but requires dedicated investments. Sisecam is a large producer and consumer of synthetic soda ash, a raw material that could face increased regulations on energy and water use. The company made large investments in natural soda ash production to mitigate this exposure. The high recyclability and environmental efficiency of Sisecam's products and the increasing use of recycled raw materials reflect positively on its rating.

Social

Sisecam's **S-3** social issuer profile score reflects its exposure to human capital risks considering potential disruptions linked to the availability of highly skilled labour, labour standards, wage and legal issues associated with its workforce. The company faces health &

safety risks given the use of heavy equipment and machinery in the manufacturing facilities, supply chain complexities that can disrupt production and risks associated with product failures or technical issues. Sisecam has lower demographic and societal risks than many companies in the sector due to the easy recyclability of glass and the positive public sentiment towards it.

Governance

Sisecam's **G-3** governance issuer profile score reflects the company's risks in the areas of financial strategy and risk management which are linked to the company's large scale investments with execution risk. Management credibility and track record, organizational structure and compliance and reporting are neutral-to-low. Sisecam's ownership concentration is moderately negative. Türkiye İş Bankası A.Ş., a private Turkish bank and founding shareholder of Sisecam, owns a majority stake in the company. We consider the bank as a passive shareholder, with no evidence of interference with the company's business.

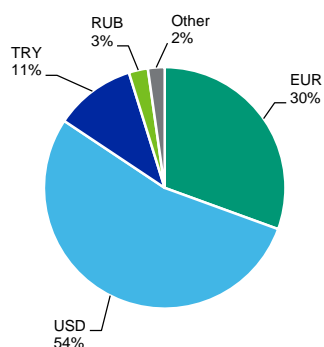
Liquidity analysis

Sisecam's liquidity is supported by cash of TRY31 billion (\$1.1 billion) and to a lesser extent by a Eurobond investment portfolio and cash held with FX-protected deposits and other financial assets with an aggregate book value of TRY10.4 billion (\$0.3 billion) as of 30 September 2023. The company's large cash balance helps offset short term debt repayment needs (45% of reported borrowings as of 30 September 2023).

We expect Sisecam to generate operating cash flow of around TRY24 billion during 2024. This expected cash flow, along with its cash holdings, will cover (1) short-term debt repayments of TRY28.8 billion and the current maturities of long term debt of TRY5.7 billion; (2) estimated capital spending of TRY 27 billion; and (3) dividend payouts. As a result, we expect Sisecam to incur additional debt or roll-over existing facilities.

Exhibit 9

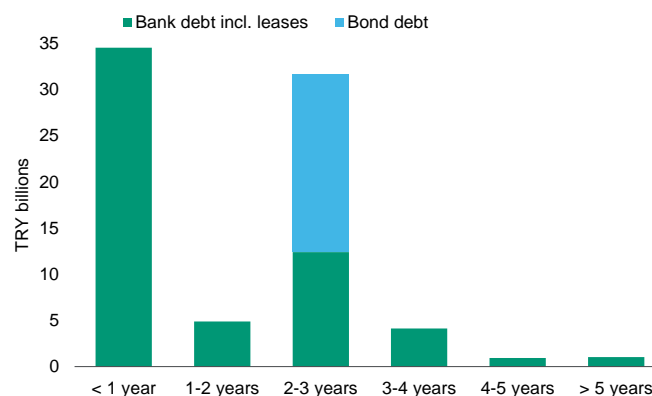
Debt breakdown by currency



As of 30 September 2023
Source: Company data

Exhibit 10

Debt breakdown by maturity



As of 30 September 2023
Source: Company data

Structural considerations

Sisecam does not have any secured debt in its capital structure with the group utilising long-term project loans in combination with short-term working capital loans. The rating of the outstanding notes is the same as the corporate family rating because we rank the company's senior unsecured notes pari-passu with its other senior unsecured obligations.

Rating methodology and scorecard factors

We used our [Manufacturing Methodology](#) industry rating methodology, published in September 2021, to assist in our assessment of Sisecam's credit quality. The B3 long-term issuer rating assigned to Sisecam is six notches below the scorecard-indicated outcome for the next 12-18 months, reflecting the company's credit links with the Turkish economy, which are not fully captured by the methodology grid.

Exhibit 11

Rating factors

Manufacturing Industry Scorecard			Current LTM 9/30/2023		Moody's 12-18 Month Forward View	
Factor 1 : Scale (20%)	Measure	Score			Measure	Score
a) Revenue (USD Billion)	\$6.0	Baa			\$5.6 - \$6.8	Baa
Factor 2 : Business Profile (25%)						
a) Business Profile	Baa	Baa			Baa	Baa
Factor 3 : Profitability and Efficiency (5%)						
a) EBITA Margin	17%	A			15% - 17%	Baa
Factor 4 : Leverage and Coverage (35%)						
a) Debt / EBITDA	3.0x	Baa			2.6x - 3.0x	Baa
b) Retained Cash Flow / Net Debt	46%	Aa			39% - 49%	A
c) Free Cash Flow / Debt	0.3%	B			-6% - -12%	Ca
d) EBITA / Interest Expense	4.0x	Ba			3.1x - 3.7x	B
Factor 5 : Financial Policy (15%)						
a) Financial Policy	Ba	Ba			Ba	Ba
Rating:						
a) Scorecard-Indicated Outcome		Baa3				Baa3
b) Actual Rating Assigned						B3

All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's forward view is Moody's opinion and does not represent the views of the issuer. LTM = last twelve months.

Source: Moody's Investors Service

Ratings

Exhibit 12

Category	Moody's Rating
TURKIYE SISE VE CAM FABRIKALARI A.S.	
Outlook	Positive
Corporate Family Rating	B3

Source: Moody's Investors Service

Appendix

Exhibit 13

Peer Comparison

	Türkiye Sise ve Cam Fabrikalari A.S. B3 Positive			Owens Corning Baa1 Stable			Verallia S.A. Baa3 Stable		
(in USD millions)	FYE Dec-21	FYE Dec-22	LTM Sep-23	FYE Dec-21	FYE Dec-22	LTM Sep-23	FYE Dec-21	FYE Dec-22	LTM Jun-23
Revenue	\$3,714	\$5,838	\$5,957	\$8,498	\$9,761	\$9,658	\$3,164	\$3,532	\$4,037
EBITA Margin	27%	17%	17%	17%	18%	17%	17%	18%	21%
EBITA / Interest Expense	5.6x	4.4x	4.0x	10.5x	14.7x	16.7x	8.6x	10.1x	10.3x
Debt / EBITDA	2.8x	2.4x	3.0x	1.7x	1.5x	1.5x	3.3x	2.7x	2.3x
Retained Cash Flow / Net Debt	28%	77%	46%	67%	80%	84%	22%	29%	38%
Free Cash Flow / Debt	8%	1%	0%	30%	35%	29%	9%	11%	7%

All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are financial year-end unless indicated; LTM = last twelve months.

Source: Moody's Investors Service

Exhibit 14

Moody's-Adjusted Debt Reconciliation

(in USD millions)	2018	2019	2020	2021	2022	LTM Sep-23
As Reported Debt	1,398	2,663	2,306	2,084	2,506	2,810
Pensions	86	89	96	130	186	127
Moody's-Adjusted Debt	1,484	2,751	2,402	2,214	2,692	2,937

All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are financial year-end unless indicated; LTM = last twelve months.

Source: Moody's Investors Service

Exhibit 15

Moody's-Adjusted EBITDA Reconciliation

(in USD millions)	2018	2019	2020	2021	2022	LTM Sep-23
As Reported EBITDA	1,038	905	915	1,689	1,745	1,642
Pensions	(16)	(9)	(12)	(21)	(77)	(60)
Unusual	(173)	(108)	(121)	(432)	(372)	(283)
Non-Standard Adjustments	0	(29)	0	0	0	0
Moody's Adjusted EBITDA	848	759	782	1,236	1,297	1,298

All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are financial year-end unless indicated; LTM = last twelve months.

Source: Moody's Investors Service

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REPORT NUMBER

1390163