Taiwan Cement Corp. (1101)

MSCI ESG RATINGS

A

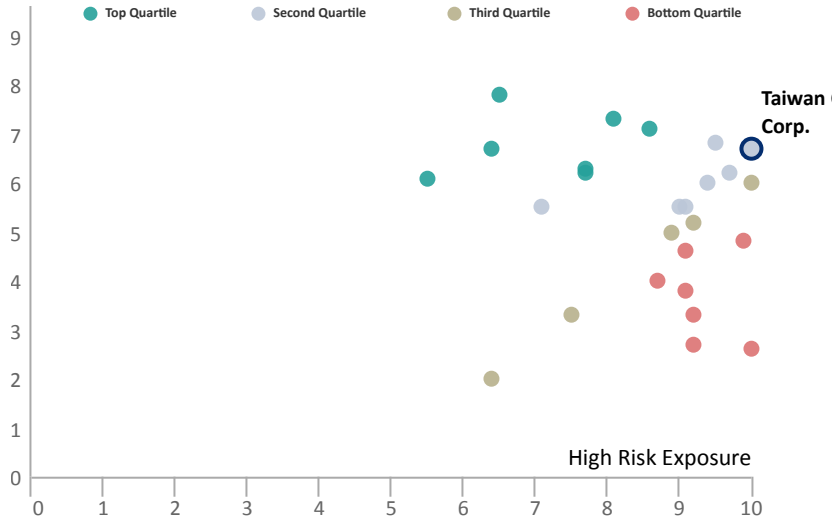
CCC | B | BB | BBB | A | AA | AAA

RATING ACTION DATE: December 05, 2022
LAST REPORT UPDATE: April 03, 2023

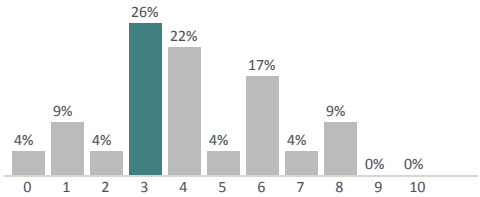
Carbon Emissions

Score	Change (since rating)	Quartile	Weight	Last score change date
3.7	▼ -0.5	●●●	20.0%	Mar 16, 2023

Strong Risk Management



KEY ISSUE SCORE DISTRIBUTION*



Key Issue Score

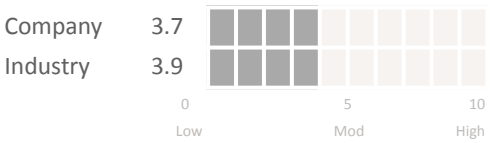
TOP 5 INDUSTRY LEADERS

GRASIM INDUSTRIES LTD	8.3
The Siam Cement Public Company Limited	7.6
JAMES HARDIE INDUSTRIES PUBLIC LIMITED COMPANY	7.3
CEMEX, S.A.B. de C.V.	6.2
MARTIN MARIETTA MATERIALS, INC.	5.6

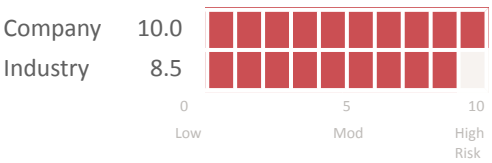
BOTTOM 5 INDUSTRY LAGGARDS

AMBUJA CEMENTS LIMITED	2.5
CHINA RESOURCES CEMENT HOLDINGS LIMITED	1.9
Huaxin Cement Co., Ltd.	1.1
China National Building Material Company Limited	0.5
TANGSHAN JIDONG CEMENT CO.,LTD.	0.0

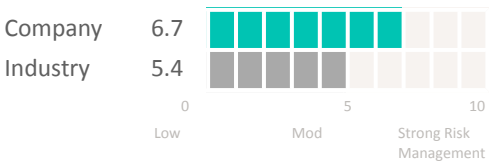
KEY ISSUE ASSESSMENT



RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure

Business Types

Business Locations

Drivers of Risk Management

Practices Score

Performance Score

METHODOLOGY NOTE

Companies are evaluated on the carbon intensity of their operations and their efforts to manage climate-related risks and opportunities.

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*[For symbols and terms used in this report, refer to the Glossary section at the end of the report]

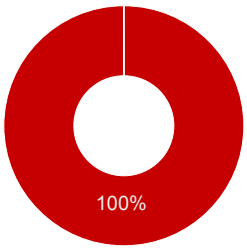
EXPOSURE

RISK EXPOSURE ASSESSMENT

Key Drivers of Risk Exposure

Exposure to: Risks of having to pay increased compliance costs tied to carbon emissions regulations

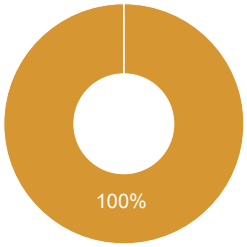
Business Types : Percentage of operations in business segments with high/moderate/low carbon intensity



- Cement, Power generation
- No exposure to medium risk segments
- No exposure to low risk segments

Source: IERS' Comprehensive Environmental Data Archive (CEDA); Air Emissions Accounts (Eurostat); Refinitiv; MSCI ESG Research; company disclosures

Business Locations : Percentage of operations in countries with strengthening or pending carbon emissions regulation

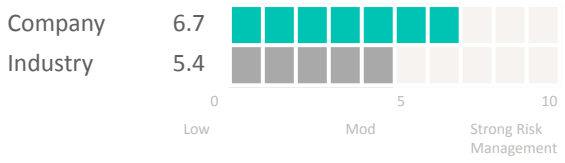


- No operations in markets with high risks
- Europe, China, Taiwan
- No operations in markets with low risks

Source: MSCI ESG Research; Refinitiv; company disclosures

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



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Description	Company Practice	Best Practice	Practices Score[2]
Targets			
Aggressiveness of the company's reduction target in the context of its current performance	Aggressive target with a low base	Aggressive target with a low base	- LOW MID TOP

Carbon Improvement Targets

Baseline Year	Target Year	Target Description	Target Reduction (%)
	2030	Supply chain carbon reduction by 2030 50%	50.00%
	2030	Target of a net-zero emissions in Operation Headquarters and offices by 2030	100.00%
	2050	Target of a net-zero emissions in production sites by 2050.	100.00%
	2025	Increase 570MW renewable energy source by 2025	
	2050	Increase 1GW renewable energy source by 2050	
	2030	Cut carbon emissions by 25 percent by 2030.	25.00%
	2023	Increase 190 MW renewable energy source by 2023	
	2030	Increase 700MW renewable energy source by 2030	
	2050	Target to achieve net zero carbon by 2050	100.00%
2016	2025	Reduce 11% of Scope 1 carbon emission intensity in Taiwan by 2025	11.00%
2016	2025	Reduce 32% of Scope 2 carbon emission intensity in Taiwan by 2025	32.00%
2016	2030	Reduce 31% of carbon emission intensity in Taiwan by 2030	31.00%
2016	2030	Reduce 20% of carbon emission intensity in Mainland China by 2030	20.00%
2016	2050	Carbon neutral concrete products by 2050	
2016	2020	Reduce energy consumption by over 5% of the 2016-2020 accumulative consumption in 2021	5.00%
2016	2021	Reduce carbon emission intensity by 2% of the 2016-2020 accumulative average in 2021	2.00%
2016	2030	Reduce 20 percent tCO2 per Metric Ton of Cementitious Materials in Mainland China by 2030 compared to 2016	20.00%
2016	2025	Taiwan Cement also commits to reduce scope 2 GHG emissions 32 percent per ton of cementitious materials within the 2016 to 2025	32.00%
2016	2030	Reduce 31 percent tCO2 per Metric Ton of Cementitious Materials in Taiwan by 2030 compared to 2016	31.00%
2016	2025	Taiwan cement manufacturer Taiwan Cement Corp TCC commits to reduce scope 1 GHG emissions 11 percent per ton of cementitious materials by 2025 from a 2016 base year	11.00%
2016	2025	Reduce 11 percent tCO2 per Metric Ton of Cementitious Materials by 2025 from 2016 in mainland China	11.00%
2013	2030	Reduce emissions by 30% by 2030.	30.00%

Mitigation

Strength of Greenhouse Gas Mitigation Strategy (0-10 Score, 0=worst, 10=best)	7.00

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Programs or actions to reduce the emissions intensity of core operations

Use of cleaner sources of energy	Some efforts	Aggressive efforts	- LOW **MID** TOP
Capture GHG emissions	Aggressive efforts	Aggressive efforts	- LOW MID **TOP**
Energy consumption management and operational efficiency enhancements	Some efforts	Aggressive efforts	- LOW **MID** TOP
CDP disclosure	Yes	Yes	- LOW **TOP**

Performance

Carbon Emissions Performance Relative to Peers (0-10 Score, 0=worst, 10=best) 3.00

GHG Emissions - metric tons CO2e

Year	Scope 1 Disclosed	Scope 1 Estimate Key	Scope 2 Disclosed	Scope 2 Estimate Key	Scope 1+2 Disclosed	Scope 3 (upstream)	Scope 3 (downstream)	Scope 3 (undefined)	Scope 1 Estimated	Scope 2 Estimated	Scope 1+2 Estimated	Scope 1+2 Estimate Key	GHG Emissions Details
2021	30,666,623.0	Reported	1,314,789.0	Reported	31,981,412.0	28,761.0		814.0				Reported	
2020	35,668,384.0	Reported	1,468,494.0	Reported	37,136,878.0	22,427.0		907.0				Reported	
2019	35,630,691.0	Reported	1,543,312.0	Reported	37,174,003.0	21,083.0		942.0				Reported	
2018	4,230,680.0	Reported	256,018.0	Reported	4,486,698.0	15,041.0						Reported	
2017	4,144,669.0	Reported	241,691.0	Reported	4,386,360.0	8,873.0						Reported	
2016	4,396,724.0	Reported	253,768.0	Reported	4,650,492.0							Reported	
2015	4,614,890.0	Reported	281,352.0	Reported	4,896,242.0							Reported	
2014	5,097,453.0	Reported	284,379.0	Reported	5,381,832.0							Reported	
2013	6,545,197.0	Reported	306,790.0	Reported	6,851,987.0							Reported	
2012		E.CSI		E.CSI					6,318,540.0	351,160.0	6,669,700.0	E.CSI	April 2018 Estimations
2011		E.CSI		E.CSI					6,012,913.0	334,174.0	6,347,087.0	E.CSI	April 2018 Estimations
2010		E.CSI		E.CSI					5,594,964.0	310,946.0	5,905,910.0	E.CSI	April 2018 Estimations
2009		E.CSI		E.CSI					4,169,956.0	231,750.0	4,401,706.0	E.CSI	April 2018 Estimations
2008		E.CSI		E.CSI					3,674,763.0	204,229.0	3,878,992.0	E.CSI	April 2018 Estimations

GHG Emissions Intensity - metric tons CO2e / USD million sales

Year	GHG Intensity	GHG Intensity Details	GHG Intensity - Reported	GHG Intensity - Reported Details
2021	8,266.20		1.52	tCO2e/metric ton of cementitious materials
2020	9,123.90		0.81	tons of CO2e per metric ton of cementitious material
2019	9,075.90			
2018	1,106.90			
2017	1,325.70			
2016	1,673.40			
2015	1,715.90			
2014	1,437.30			
2013	1,760.70			

Year	GHG Intensity	GHG Intensity Details	GHG Intensity - Reported	GHG Intensity - Reported Details
2012	1,622.20			
2011	1,622.20			
2010	1,622.20			
2009	1,622.20			
2008	1,622.20			

Energy Consumption

Year	Total energy consumption (reported)	Total energy consumption (MWh)	Energy intensity (reported)	Reported intensity details	Total energy consumption intensity	Energy consumption details
2021	39,081,361.42	39,081,361.42			10,101.36	Energy Consumption of Taiwan and Mainland China
2020	45,907,747.26	45,907,747.26			11,278.71	Energy Consumption of Taiwan and Mainland China
2019	46,660,855.04	46,660,855.04			11,392.06	Energy Consumption of Taiwan and Mainland China
2018	4,860,469.73	4,860,469.73			1,199.06	Annual energy consumption (plants and HQ): coal, diesel and electricity
2017	5,231,866.67	5,231,866.67			1,581.28	Annual energy consumption (plants and HQ): coal, diesel and electricity
2016	5,574,619.73	5,574,619.73			2,005.98	Annual energy consumption (plants and HQ): coal, diesel and electricity
2015	9,524,741.95	9,524,741.95			3,337.96	Annual energy consumption (plants and HQ): coal, diesel and electricity
2014	10,290,800.01	10,290,800.01			2,748.39	Annual Energy Consumption
2013	12,603,016.40	12,603,016.40			3,238.48	Annual Energy Consumption