

**SELL** (Unchanged)

Change in Numbers

TP: Bt 23.00 (From: Bt 25.00)

Downside : 13.2%

4 NOVEMBER 2024

# PTT Global Chemical Pcl (PTTGC TB)

## Multiple challenges

PTTGC faces multiple challenges simultaneously, including low oil prices, low petrochemical spreads, weak GRM, and policy risk. We reaffirm our SELL rating on the stock with a TP of 23.



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### Facing tough times; SELL

This report is a part of Energy sector – *Missing the mark*, dated 4 November 2024. We reaffirm our SELL call on PTTGC with a lower DCF-based 12-month TP (2025F base year) of Bt23 from Bt25. **First**, the company faces multiple challenges at the same time. While low oil prices are negative for its gas-based petrochemical units, weak petrochemical spreads are bad for its naphtha-based petrochemical units. A weak gross refining margin (GRM) is also hitting its refinery business. Meanwhile, rising ethane cost from new ethane price formula with its parent PTT remains an overhang concern. **Second**, PTTGC is far less profitable than in the past, despite our assumption that it will turn around next year, and we forecast its ROE at only 3.3% in 2026F. **Lastly**, we regard the stock as expensive at 24.1x PE and 0.4x P/BV in 2025F.

### More earnings cuts

We cut our core earnings estimates for PTTGC from a profit to a loss this year and by 35/27% in 2025-26F due to weaker-than-expected petrochemical spreads and GRM (Exhibit 1). As the downcycle drags on, we lower our HDPE-naphtha spread assumptions by 4/12/18% to US\$330/350/370 for 2024-26F. The refining market is also weak, and we cut our GRM assumptions by 14/16/13% to US\$4.3/4.2/5.0 per bbl in 2024-26F.

### Multiple hits to petrochemical business

Multiple factors are hitting PTTGC's petrochemical business. **First**, low oil prices are negative for its gas-based petrochemical units. This is because while its ethane gas cost is much more stable than oil prices, end petrochemical product prices move with oil prices. **Second**, due to the profitability of its gas-based petrochemical units also being linked to PTT's gas separation plants' (GSP) profit, GSPs' falling profit due to the government's subsidization policy would also mean lower profitability for PTTGC. We estimate this will reduce PTTGC's earnings base by Bt2.7bn p.a. from 2025F onward. **Third**, weak petrochemical spreads (over naphtha) have also hit its naphtha-based petrochemical units. Note that gas (ethane) accounts for around 35% of feedstock costs and naphtha 65%.

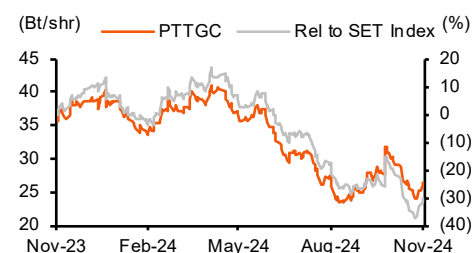
### Weak 3Q24F on the cards

We project a bottom-line loss of Bt12bn in 3Q24F vs. a profit of Bt1.8bn in 2Q24. Of the total loss, Bt9bn is due to an impairment from Vencorex. On a normalized earnings basis, we estimate a normalized loss of Bt3.8bn in 3Q24F vs. Bt2bn loss in 2Q24. We also expect a similar loss in 4Q24F due to lower GRM and a lower contribution from Allnex due to the low season.

### COMPANY VALUATION

Y/E Dec (Bt m)	2023A	2024F	2025F	2026F
Sales	616,635	629,194	620,183	624,887
Net profit	999	(20,202)	4,454	9,287
Consensus NP	—	(9,872)	8,536	12,246
Diff frm cons (%)	—	na	(47.8)	(24.2)
Norm profit	(2,753)	(3,722)	4,951	9,287
Prev. Norm profit	—	922	7,565	12,697
Chg frm prev (%)	—	na	(34.6)	(26.9)
Norm EPS (Bt)	(0.6)	(0.8)	1.1	2.1
Norm EPS grw (%)	na	na	na	87.6
Norm PE (x)	na	na	24.1	12.9
EV/EBITDA (x)	11.3	11.8	9.2	7.2
P/BV (x)	0.4	0.4	0.4	0.4
Div yield (%)	2.8	2.8	1.5	3.1
ROE (%)	na	na	1.8	3.3
Net D/E (%)	73.9	78.7	67.8	57.8

### PRICE PERFORMANCE



### COMPANY INFORMATION

Price as of 1-Nov-24 (Bt)	26.50
Market Cap (US\$ m)	3,524.4
Listed Shares (m shares)	4,508.8
Free Float (%)	54.8
Avg Daily Turnover (US\$ m)	15.6
12M Price H/L (Bt)	41.00/23.40
Sector	PETRO
Major Shareholder	PTT Pcl 45.18%

Sources: Bloomberg, Company data, Thanachart estimates

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## Ex 1: Earnings Revisions

	2022	2023	2024F	2025F	2025F
<b>Net profit (Bt m)</b>					
- New	(8,752)	999	(18,756)	4,454	9,287
- Old			(15,558)	7,068	12,697
- Change (%)			na	(37.0)	(26.9)
<b>Normalized profit (Bt m)</b>					
- New	17,381	(2,753)	(3,722)	4,951	9,287
- Old			922	7,565	12,697
- Change (%)			na	(34.6)	(26.9)
<b>Market GRM (US\$/bbl)</b>					
- New	12.0	12.7	4.3	4.2	5.0
- Old			4.7	6.0	6.5
- Change (%)			(8.9)	(30.8)	(23.0)
<b>Px-Naphtha (US\$/tonne)</b>					
- New	243	274	300	320	350
- Old			350	380	400
- Change (%)			(14.3)	(15.8)	(12.5)
<b>HDPE-Naphtha (US\$/tonne)</b>					
- New	392	386	330	350	370
- Old			344	400	450
- Change (%)			(4.1)	(12.5)	(17.8)

Sources: Company data, Thanachart estimates

## Ex 2: 12-month DCF-based TP Calculation, Using A Base Year Of 2025F

(Bt m)	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	Terminal Value
EBITDA & equity income	34,037	39,837	34,784	32,503	31,443	35,338	34,667	34,667	34,667	34,667	34,667	
Free cash flow	31,458	35,269	31,855	15,727	25,527	28,513	27,301	27,388	27,463	27,538	28,653	355,524
PV of free cash flow	28,952	29,867	24,822	11,273	16,837	17,304	14,801	13,601	12,496	11,481	10,946	135,813
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.2											
WACC (%)	8.7											
Terminal growth (%)	1.0											
Enterprise value - add investments	328,193											
Net debt	219,046											
Minority interest	7,150											
Equity value	101,997											
# of shares (m)	4,509											
Equity value / share	23.0											

Source: Thanachart estimates

## Valuation Comparison

### Ex 3: Comparison With Regional Peers

Name	BBG code	Country	EPS growth		— PE —		— P/BV —		EV/EBITDA		– Div yield –	
			24F (%)	25F (%)	24F (x)	25F (x)	24F (x)	25F (x)	24F (x)	25F (x)	24F (%)	25F (%)
Sinopec Shanghai	338 HK	Hong Kong	na	na	63.7	17.5	0.5	0.5	13.4	8.3	0.8	1.7
Sinopec Yizheng	1033 HK	Hong Kong	42.3	27.0	18.6	14.7	1.4	1.3	13.4	14.3	na	na
AKR Corporindo	AKRA IJ	Indonesia	0.0	9.6	10.2	9.3	2.2	2.1	8.2	7.4	6.4	6.5
Reliance Industries Ltd	RIL IN	India	1.7	7.7	na	na	na	na	12.9	12.0	na	na
LG Chem	051910 KS	South Korea	(60.8)	na	40.6	12.8	0.7	0.7	8.2	5.5	1.0	1.6
SK Energy	096770 KS	South Korea	na	na	na	13.3	0.6	0.5	11.9	7.1	2.3	2.6
Petronas Chemicals Group	PCHEM MK	Malaysia	11.3	13.2	18.2	16.1	1.0	1.0	8.6	7.7	3.0	3.4
Formosa Chemical	1326 TT	Taiwan	(24.2)	63.5	31.6	19.3	0.7	0.7	16.2	12.1	2.6	4.1
Far Eastern New Century	1402 TT	Taiwan	16.7	12.9	20.5	18.1	0.8	0.9	10.7	9.6	4.0	4.6
IRPC Pcl *	IRPC TB *	Thailand	na	na	na	na	0.4	0.4	20.2	15.2	0.0	0.0
Indorama Ventures *	IVL TB *	Thailand	298.1	28.1	22.7	17.7	1.0	0.9	7.4	6.7	0.0	1.7
PTT Global Chemical *	PTTGC TB *	Thailand	na	na	na	24.1	0.4	0.4	11.8	9.2	2.8	1.5
Siam Cement *	SCC TB *	Thailand	(44.9)	76.8	30.4	17.2	0.7	0.7	24.0	12.1	1.6	2.9
<b>Average</b>			<b>51.4</b>	<b>38.9</b>	<b>24.7</b>	<b>18.0</b>	<b>0.7</b>	<b>0.7</b>	<b>13.8</b>	<b>9.9</b>	<b>2.1</b>	<b>2.6</b>

Sources: Bloomberg, \* Thanachart estimates

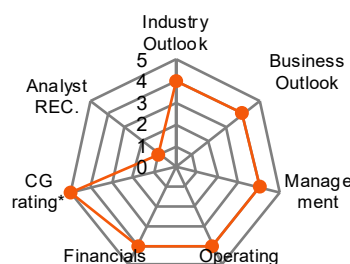
Based on 1 November 2024 closing prices

## COMPANY DESCRIPTION

PTT Global Chemical Pcl (PTTGC) became a fully integrated petrochemical and refining company after the amalgamation of PTTCH (PTT Chemicals) and PTTAR (PTT Aromatics & Refining) in late 2011. The company produces olefins and derivatives, and its key products are ethylene, propylene, HDPE, LDPE, LLDPE, and MEG. Together, the olefins value chain made up about half of 2022 EBITDA. PTTGC is one of the few gas-based crackers in Asia, and it has a competitive cost structure compared with other naphtha-based crackers. The company also has fully integrated refinery and aromatics plants that produce mainly paraxylene and benzene. The company also recently moved into the specialty coating business, investing in Allnex Holdings GmbH (Allnex).

Source: Thanachart

## COMPANY RATING



### Rating Scale

<b>Excellent</b>	<b>5</b>
<b>Good</b>	<b>4</b>
<b>Fair</b>	<b>3</b>
<b>Weak</b>	<b>2</b>
<b>Very Weak</b>	<b>1</b>
<b>None</b>	<b>0</b>

Source: Thanachart; \*CG Rating

## THANACHART'S SWOT ANALYSIS

### S — Strength

- It is a low-cost producer leveraging its gas-based and flexible cracker.
- Substantial economies of scale due to synergies from its fully integrated facilities.
- Being a PTT group company helps ensure feedstock and raises its franchise value.

### O — Opportunity

- Significant growth potential in terms of chemical demand in the region.
- Value enhancement from synergies, debottlenecking of its units, and further downstream integration.
- M&A activity that could lead to higher returns to investors.

### W — Weakness

- Cyclical business with volatile earnings and cash flow.
- Potential impact of stock losses (due mainly to oil price movements) on earnings.
- Reliance on bulk chemicals and limited exposure to specialty chemicals.

### T — Threat

- Depleting low-cost domestic gas supply would reduce its competitive edge of being a low-cost producer.
- Low oil prices erode its competitive advantage.
- Increasing competition from low-cost producers in the Middle East and US-based crackers.
- Overpaying for acquisitions and limited synergies.

## CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
<b>Target price (Bt)</b>	29.20	23.00	-21%
<b>Net profit 24F (Bt m)</b>	(9,872)	(20,202)	na
<b>Net profit 25F (Bt m)</b>	8,536	4,454	-48%
<b>Consensus REC</b>	<b>BUY: 7</b>	<b>HOLD: 14</b>	<b>SELL: 6</b>

## HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2024-25F net profits are lower than the Bloomberg consensus estimates, likely due to us having weaker chemical spread assumptions.
- Our DCF-based TP is consequently lower than the Street's.

Sources: Bloomberg consensus, Thanachart estimates

## RISKS TO OUR INVESTMENT CASE

- Higher-than-expected oil prices and/or chemical spreads would be the key upside risk to our call.
- Increased gas supply from its parent company, PTT, or lower outages at the complex would be another upside risk.

Source: Thanachart



## INCOME STATEMENT

FY ending Dec (Bt m)	2022A	2023A	2024F	2025F	2026F
Sales	678,267	616,635	629,194	620,183	624,887
Cost of sales	631,848	587,414	601,424	585,138	584,189
<b>Gross profit</b>	<b>46,419</b>	<b>29,221</b>	<b>27,770</b>	<b>35,045</b>	<b>40,698</b>
% gross margin	6.8%	4.7%	4.4%	5.7%	6.5%
Selling & administration expenses	31,457	26,824	27,370	26,978	27,183
<b>Operating profit</b>	<b>14,962</b>	<b>2,397</b>	<b>400</b>	<b>8,067</b>	<b>13,515</b>
% operating margin	2.2%	0.4%	0.1%	1.3%	2.2%
Depreciation & amortization	26,646	27,504	28,404	25,970	26,322
<b>EBITDA</b>	<b>41,608</b>	<b>29,901</b>	<b>28,804</b>	<b>34,037</b>	<b>39,837</b>
% EBITDA margin	6.1%	4.8%	4.6%	5.5%	6.4%
Non-operating income	7,526	8,001	6,500	6,500	6,500
Non-operating expenses	0	0	0	0	0
Interest expense	(9,170)	(10,708)	(10,035)	(9,671)	(8,880)
<b>Pre-tax profit</b>	<b>13,318</b>	<b>(310)</b>	<b>(3,135)</b>	<b>4,896</b>	<b>11,135</b>
Income tax	(2,272)	1,352	723	880	2,784
<b>After-tax profit</b>	<b>15,590</b>	<b>(1,662)</b>	<b>(3,859)</b>	<b>4,016</b>	<b>8,351</b>
% net margin	2.3%	-0.3%	-0.6%	0.6%	1.3%
Shares in affiliates' Earnings	2,908	(1,225)	0	800	800
Minority interests	(1,117)	134	137	135	136
Extraordinary items	(26,134)	3,752	(16,480)	(497)	0
<b>NET PROFIT</b>	<b>(8,753)</b>	<b>999</b>	<b>(20,202)</b>	<b>4,454</b>	<b>9,287</b>
<b>Normalized profit</b>	<b>17,381</b>	<b>(2,753)</b>	<b>(3,722)</b>	<b>4,951</b>	<b>9,287</b>
EPS (Bt)	(1.9)	0.2	(4.5)	1.0	2.1
Normalized EPS (Bt)	3.9	(0.6)	(0.8)	1.1	2.1

*We expect a turnaround in 2024-25F earnings, but there could be a risk*

## BALANCE SHEET

FY ending Dec (Bt m)	2022A	2023A	2024F	2025F	2026F
<b>ASSETS:</b>					
Current assets:	172,009	186,874	213,672	210,720	216,159
Cash & cash equivalent	31,963	46,249	70,000	70,000	75,000
Account receivables	45,254	57,761	58,937	58,093	58,534
Inventories	76,619	68,517	70,151	68,252	68,141
Others	18,173	14,347	14,584	14,375	14,484
Investments & loans	81,236	74,836	74,836	74,836	74,836
Net fixed assets	296,321	285,860	267,115	249,545	230,468
Other assets	170,399	171,435	171,435	171,435	171,435
<b>Total assets</b>	<b>719,965</b>	<b>719,005</b>	<b>727,059</b>	<b>706,537</b>	<b>692,898</b>
<b>LIABILITIES:</b>					
Current liabilities:	103,976	125,841	146,084	203,993	123,491
Account payables	57,613	71,163	72,860	70,887	70,772
Bank overdraft & ST loans	4,318	2,203	0	0	0
Current LT debt	9,341	18,915	40,000	100,000	20,000
Others current liabilities	32,704	33,560	33,224	33,105	32,719
<b>Total LT debt</b>	<b>263,890</b>	<b>243,934</b>	<b>249,046</b>	<b>163,587</b>	<b>223,816</b>
Others LT liabilities	53,272	53,048	53,737	53,296	53,527
<b>Total liabilities</b>	<b>421,138</b>	<b>422,824</b>	<b>448,867</b>	<b>420,876</b>	<b>400,834</b>
Minority interest	7,528	7,287	7,150	7,015	6,879
Preferreds shares	0	0	0	0	0
Paid-up capital	45,088	45,088	45,088	45,088	45,088
Share premium	36,937	36,937	36,937	36,937	36,937
Warrants	0	0	0	0	0
Surplus	(3,299)	(5,775)	(5,775)	(5,775)	(5,775)
<b>Retained earnings</b>	<b>212,574</b>	<b>212,644</b>	<b>194,792</b>	<b>202,396</b>	<b>208,934</b>
Shareholders' equity	291,300	288,895	271,042	278,646	285,185
<b>Liabilities &amp; equity</b>	<b>719,965</b>	<b>719,005</b>	<b>727,059</b>	<b>706,537</b>	<b>692,898</b>

*Balance sheet has grown following a major acquisition*

Sources: Company data, Thanachart estimates

**CASH FLOW STATEMENT**

<b>FY ending Dec (Bt m)</b>	<b>2022A</b>	<b>2023A</b>	<b>2024F</b>	<b>2025F</b>	<b>2026F</b>
Earnings before tax	13,318	(310)	(3,135)	4,896	11,135
Tax paid	1,753	(859)	(989)	(751)	(2,847)
Depreciation & amortization	26,646	27,504	28,404	25,970	26,322
Chg In working capital	(12,276)	9,145	(1,113)	771	(445)
Chg In other CA & CL / minorities	(4,265)	9,842	(362)	762	368
<b>Cash flow from operations</b>	<b>25,176</b>	<b>45,321</b>	<b>22,805</b>	<b>31,648</b>	<b>34,533</b>
Capex	(21,925)	(17,042)	(9,660)	(8,400)	(7,245)
Right of use	(14,235)	142	0	0	0
ST loans & investments	(532)	531	54	0	0
LT loans & investments	(6,530)	6,400	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(16,235)	(5,955)	(15,791)	(938)	230
<b>Cash flow from investments</b>	<b>(59,457)</b>	<b>(15,925)</b>	<b>(25,397)</b>	<b>(9,338)</b>	<b>(7,015)</b>
Debt financing	9,438	(11,706)	23,994	(25,459)	(19,771)
Capital increase	0	0	0	0	0
Dividends paid	(11,746)	(1,269)	2,350	3,150	(2,748)
Warrants & other surplus	(6,443)	(2,136)	0	0	0
<b>Cash flow from financing</b>	<b>(8,751)</b>	<b>(15,110)</b>	<b>26,343</b>	<b>(22,309)</b>	<b>(22,519)</b>
<b>Free cash flow</b>	<b>3,251</b>	<b>28,279</b>	<b>13,145</b>	<b>23,248</b>	<b>27,288</b>

*We expect positive FCF from limited capex*

**VALUATION**

<b>FY ending Dec</b>	<b>2022A</b>	<b>2023A</b>	<b>2024F</b>	<b>2025F</b>	<b>2026F</b>
Normalized PE (x)	6.9	na	na	24.1	12.9
Normalized PE - at target price (x)	6.0	na	na	20.9	11.2
PE (x)	na	119.6	na	26.8	12.9
PE - at target price (x)	na	103.8	na	23.3	11.2
EV/EBITDA (x)	8.8	11.3	11.8	9.2	7.2
EV/EBITDA - at target price (x)	8.4	10.8	11.2	8.7	6.8
P/BV (x)	0.4	0.4	0.4	0.4	0.4
P/BV - at target price (x)	0.4	0.4	0.4	0.4	0.4
P/CFO (x)	4.7	2.6	5.2	3.8	3.5
Price/sales (x)	0.2	0.2	0.2	0.2	0.2
Dividend yield (%)	3.8	2.8	2.8	1.5	3.1
FCF Yield (%)	2.7	23.7	11.0	19.5	22.8
<b>(Bt)</b>					
Normalized EPS	3.9	(0.6)	(0.8)	1.1	2.1
EPS	(1.9)	0.2	(4.5)	1.0	2.1
DPS	1.0	0.8	0.8	0.4	0.8
BV/share	64.6	64.1	60.1	61.8	63.2
CFO/share	5.6	10.1	5.1	7.0	7.7
FCF/share	0.7	6.3	2.9	5.2	6.1

Sources: Company data, Thanachart estimates

## FINANCIAL RATIOS

FY ending Dec	2022A	2023A	2024F	2025F	2026F
<b>Growth Rate</b>					
Sales (%)	45.8	(9.1)	2.0	(1.4)	0.8
Net profit (%)	na	na	na	na	108.5
EPS (%)	na	na	na	na	108.5
Normalized profit (%)	(38.6)	na	na	na	87.6
Normalized EPS (%)	(38.6)	na	na	na	87.6
Dividend payout ratio (%)	(51.5)	338.5	40.0	40.0	40.0
<b>Operating performance</b>					
Gross margin (%)	6.8	4.7	4.4	5.7	6.5
Operating margin (%)	2.2	0.4	0.1	1.3	2.2
EBITDA margin (%)	6.1	4.8	4.6	5.5	6.4
Net margin (%)	2.3	(0.3)	(0.6)	0.6	1.3
D/E (incl. minor) (x)	0.9	0.9	1.0	0.9	0.8
Net D/E (incl. minor) (x)	0.8	0.7	0.8	0.7	0.6
Interest coverage - EBIT (x)	1.6	0.2	0.0	0.8	1.5
Interest coverage - EBITDA (x)	4.5	2.8	2.9	3.5	4.5
ROA - using norm profit (%)	2.4	na	na	0.7	1.3
ROE - using norm profit (%)	5.7	na	na	1.8	3.3
<b>DuPont</b>					
ROE - using after tax profit (%)	5.1	na	na	1.5	3.0
- asset turnover (x)	0.9	0.9	0.9	0.9	0.9
- operating margin (%)	3.3	na	na	2.3	3.2
- leverage (x)	2.4	2.5	2.6	2.6	2.5
- interest burden (%)	59.2	(3.0)	(45.4)	33.6	55.6
- tax burden (%)	117.1	na	na	82.0	75.0
WACC (%)	8.2	8.2	8.2	8.7	8.7
ROIC (%)	3.4	0.4	(0.0)	1.4	2.1
NOPAT (Bt m)	17,514	2,397	(202)	6,617	10,136
invested capital (Bt m)	536,886	507,698	490,088	472,233	454,001

Sources: Company data, Thanachart estimates

## ESG Information - Third Party Terms

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ESG Scores by Third Party data from www.SETTRADE.com

1. MSCI (CCC- AAA)
2. ESG Book (0-100)
3. Refinitiv (0-100)
4. S&P Global (0-100)
5. Moody's ESG Solutions (0-100)
6. SET ESG Rating (BBB-AAA)

### SETESG Index (SETESG)

The SETESG Index reflects the price movement of stock of companies that have sustainable business practices which consider environmental, social and governance (ESG) aspect.

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### SET ESG Index (SET ESG)

Currently, long-term investment guidelines abroad are beginning to focus on investing in companies that have sustainable business practices. which considers environmental, social and governance factors (Environmental, Social and Governance or ESG) of the company in making investment decisions along with analyzing the company's financial data.

Stock Exchange Has prepared the results of evaluating sustainable stocks which are stocks of listed companies (SETESG Rating) as an alternative for investors who want to invest in stocks of listed companies that are outstanding in ESG, including to support listed companies with operations. sustainable business Taking into account all stakeholders in both social and environmental aspects. There is a management process to create sustainability for the organization, such as risk management. Supply chain management and innovation development. Therefore, the SETESG index was created to be an index that reflects the price movement of a group of securities. of companies with sustainable business operations that meet the required size and liquidity criteria

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Score range	Description
CCC - B	<b>LAGGARD:</b> A company lagging its industry based on its high exposure and failure to manage significant ESG risks
BB - BBB - A	<b>AVERAGE :</b> A company with a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers
AA - AAA	<b>LEADER:</b> A company leading its industry in managing the most significant ESG risks and opportunities

### The Dow Jones Sustainability Indices (DJSI)

The Dow Jones Sustainability Indices (DJSI) are a family of best-in-class benchmarks for investors who have recognized that sustainable business practices are critical to generating long-term shareholder value and who wish to reflect their sustainability convictions in their investment portfolios. The family was launched in 1999 as the first global sustainability benchmark and tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria. Created jointly by S&P Dow Jones Indices and SAM, the DJSI combine the experience of an established index provider with the expertise of a specialist in Sustainable Investing to select the most sustainable companies from across 61 industries. The indices serve as benchmarks for investors who integrate sustainability considerations into their portfolios, and provide an effective engagement platform for investors who wish to encourage companies to improve their corporate sustainability practices.

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ESG risk combines the concepts of management and exposure to arrive at an absolute assessment of ESG risk. We identify five categories of ESG risk severity that could impact a company's enterprise value

### Moody's ESG Solutions

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90-100	▲▲▲▲▲	Excellent
80-89	▲▲▲▲	Very Good
70-79	▲▲▲	Good
60-69	▲▲	Satisfactory
50-59	▲	Pass
Below		N/A

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