

REIMAGINING CHEMISTRY TOGETHER TO CREATE A BETTER WORLD

INDORAMA VENTURES PUBLIC COMPANY LIMITED



**INNOVATIVE &
SUSTAINABLE
PRODUCTS**



**DECARBONIZE
OUR OPERATION**



**FUTURE READY
ORGANIZATION**



Purpose

Reimagining chemistry together
to create a better world.



Vision

To be a world-class sustainable chemical company
making great products for society.



Mission

We commit to be a responsible industry
leader leveraging on the excellence of
our people, processes, and technologies
to create value for our stakeholders.



Values

- **The customer is why we exist.** We measure ourselves by our customers' success. Through unparalleled innovation and attention to quality we aim to exceed their expectations.
- **Our people make the difference.** A company is its people and people provide the competitive advantage. We respect every voice and rely on one another to grow.
- **We see change as an opportunity.** The business landscape is constantly evolving. We embrace the challenges of change to be world-class and maintain our differentiation.
- **Diversity is our strength.** As a global company we value the variety of knowledge, perspectives and experiences in our organization, and draw strength from these to fuel our competitiveness.
- **We are responsible.** In our pursuit of business growth and profitability we do things the right way – economically, socially, and environmentally. Furthermore, health and safety are non-negotiable.



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Performance Highlights

US\$million (except where stated otherwise)	USD Million		
	2020	2021	2022
Production Volume (MMT)⁵	13.72	14.72	14.65
Sales Volume (MMT)⁵	14.08	14.83	14.68
Consolidated Revenue ¹	10,594	14,629	18,715
Core EBITDA^{2,3,6}	1,124	1,743	2,278
Combined PET	794	1,103	1,328
Integrated Oxides and Derivatives ⁶	115	377	730
Fibers	195	268	212
Core EBIT ⁶	511	1,108	1,544
Core Net Profit after Tax and NCI^{4,6}	255	684	986
Core Net Profit after Tax and NCI (THB m) ⁶	7,987	21,887	34,561
Core EPS after PERP Interest (THB)⁶	1.29	3.76	6.02
Core EBITDA/T (\$)⁶	82	118	155
Operating Cash Flow	1,388	1,055	2,224
Net Operating Debt to Equity⁶ (times)	1.05	0.84	0.96

* Combined PET includes Integrated PET, Specialty Chemicals and Packaging.

¹ Consolidated financials are based upon elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to holding segment.

³ Core EBITDA are EBITDA adjusted with net extraordinary expenses/(income) and inventory losses/(gains).

⁴ Core net profits are reported net profits adjusted with net extraordinary expenses/(income) and inventory losses/(gains) post tax.

⁵ Volumes exclude PX and ethylene being captive.

⁶ In 2020 and 2021, IVOL P&L values are moved below EBITDA to extraordinary items and consider IVOL capital employed as Non-operating Debt.

US\$million (except where stated otherwise)	USD Million		
	2020	2021	2022
Net profit after Tax and NCI	77	822	884
Rationalization of footprint (impairments)	-	-	237
Extraordinary taxes	-	-	(46)
Impairments - provision of expenses and inventory	-	-	23
Acquisition cost and pre-operative expense	32	9	17
(Gain) loss on disposal of property, plant and equipment, net	4	4	(3)
Insurance income	(16)	(9)	(91)
Impairment loss of PPE	20	9	10
Lakes Charles cracker (IVOL) performance	50	73	-
Gains on bargain purchases	(58)	-	-
Extra expenses related to PO/MTBE turnaround	3	-	-
Other extraordinaries (income)/expense	12	(12)	12
Inventory (gains)/losses	173	(274)	(76)
Tax on inventory gains/losses	(42)	62	19
= Core Net Profit after Tax and NCI	255	684	986

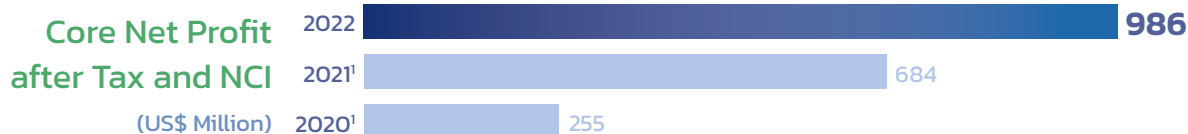
Performance Charts



¹ In 2020 and 2021, IVOL P&L values are moved below EBITDA to extraordinary items.



¹ In 2020 and 2021, IVOL P&L values are moved below EBITDA to extraordinary items.



¹ In 2020 and 2021, IVOL P&L values are moved below EBITDA to extraordinary items.



¹ In 2020 and 2021, consider IVOL capital employed as Non-operating Debt.



Financial Status and Performance

Financial Information

The consolidated and separate financial statements for the year ended December 31, 2020, 2021, and 2022 were audited by Mr. Yoottapong Soontalinka, Certified Public Accountant, with registration No. 10604 at KPMG Phoomchai Audit Ltd.

Summary of audit report by the Certified Public Accountant of the Company

Financial statements for the year ended 31 December 2022

The auditor gave an opinion that the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2022, and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Key audit matters are as follows:

On 1 April 2022, the Group completed the significant acquisition of a 100% equity stake in Oxiteno S.A. for a cash consideration of BRL 6,694.2 million (Baht 47,535.8 million). The Group assessed that this acquisition is qualified as a business combination. The acquisition method of accounting for business combinations is a complex and judgmental exercise, requiring the Group to determine the fair value of identifiable assets acquired and liabilities assumed and consideration transferred with any resulting

differences recognised as goodwill or a gain on bargain purchase. Due to the significance of the acquisition of Oxiteno S.A. business, and the significant judgements and complexities involved in determining the fair value of identifiable assets acquired and liabilities assumed, the auditor considered accounting for that business combination as a key audit matter.

At 31 December 2022, the Group identified that the impairment indicators existed in some of European Cash Generating Units (“CGUs”). Therefore, the Group performed impairment assessments for these CGUs by applying the value-in-use (discounted cash flow (“DCF”)) method to determine the recoverable amount of these CGUs. Due to the significant judgement and complexities involved in determining the future cash flows attributable to CGUs, the auditor considered the measurement of the recoverable amount derived from the value in use as a key audit matter.

As at 31 December 2022, the Group had goodwill of Baht 17,888.2 million. The CGUs to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (DCF) method to determine the recoverable amount of each CGU to which goodwill belongs. Any shortfall of the recoverable amounts against the carrying amounts would be recognised as impairment losses. Due to the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the individual CGUs to which goodwill belongs, the auditor considered the measurement of the recoverable amount as a key audit matter.

The following table sets forth a summary of the consolidated financial statements of Indorama Ventures Public Company Limited from 2020 to 2022

Statement of Financial Position (Consolidated Financial Statements)

Unit: Baht million	As of December 31					
	2020 ¹	%	2021 ¹	%	2022	%
Assets						
Current assets						
Cash and cash equivalents	18,948.5	4.2	16,215.3	3.0	21,211.1	3.4
Current investments	441.9	0.1	240.5	0.0	533.2	0.1
Trade accounts receivable	33,421.6	7.4	53,171.9	9.8	55,580.3	8.9
Other receivables	1,969.1	0.4	3,294.6	0.6	2,708.0	0.4
Short-term loans to related parties and interest receivable from related parties	126.7	0.0	30.2	0.0	23.7	0.0
Inventories	53,938.5	11.9	88,979.0	16.4	115,872.3	18.6
Other current financial assets	1,079.2	0.2	913.8	0.2	1,312.6	0.2

Unit: Baht million	As of December 31					
	2020 ¹	%	2021 ¹	%	2022	%
Other current assets	9,909.1	2.2	14,013.8	2.6	18,466.7	3.0
Total current assets	119,834.7	26.4	176,859.1	32.6	215,707.8	34.6
Non-current assets						
Other non-current financial assets	2,193.0	0.5	983.3	0.2	6,685.5	1.1
Investments in associate and joint ventures (2021: Investments in joint ventures)	2,954.9	0.7	3,488.7	0.6	3,729.1	0.6
Other long-term investments	108.5	0.0	114.3	0.0	336.0	0.1
Long-term loans to related parties	165.9	0.0	-	-	-	-
Property, plant and equipment	264,290.9	58.3	291,676.9	53.8	320,630.1	51.4
Right-of-use assets	11,865.3	2.6	11,450.2	2.1	12,393.4	2.0
Goodwill	15,385.8	3.4	17,410.6	3.2	17,888.2	2.9
Intangible assets other than goodwill	31,230.6	6.9	33,869.3	6.3	34,684.5	5.6
Deferred tax assets	2,611.7	0.6	2,657.0	0.5	4,540.5	0.7
Other non-current assets	2,530.1	0.6	3,318.6	0.6	7,283.3	1.2
Total non-current assets	333,336.8	73.6	364,969.1	67.4	408,170.6	65.4
Total assets	453,171.5	100.0	541,828.2	100.0	623,878.4	100.0
Liabilities and equity						
Current liabilities						
Bank overdrafts and short-term loans from financial institutions	20,725.6	4.6	26,618.8	4.9	31,247.8	5.0
Trade accounts payable	57,782.6	12.8	90,875.9	16.8	106,720.7	17.1
Current portion of long-term loans from financial institutions	8,919.8	2.0	9,587.6	1.8	28,502.0	4.6
Current portion of debentures	7,583.6	1.7	7,783.8	1.4	5,274.9	0.8
Current portion of lease liabilities	1,713.6	0.4	1,831.3	0.3	2,254.9	0.4
Income tax payable	1,448.9	0.3	3,029.7	0.6	2,899.3	0.5
Other current financial liabilities	356.5	0.1	237.5	0.0	2,142.1	0.3
Other current liabilities	18,630.9	4.1	21,156.2	3.9	23,158.6	3.7
Total current liabilities	117,161.4	25.9	161,120.7	29.7	202,200.4	32.4
Non-current liabilities						
Long-term loans from financial institutions	99,448.0	21.9	101,076.2	18.7	102,464.1	16.4
Lease liabilities	8,944.5	2.0	8,512.0	1.6	8,645.4	1.4
Debentures	64,625.4	14.3	68,816.7	12.7	75,924.2	12.2
Deferred tax liabilities	16,685.9	3.7	19,902.5	3.7	19,529.1	3.1
Non-current provisions for employee benefits	7,658.5	1.7	7,499.7	1.4	6,172.8	1.0
Other non-current financial liabilities	1,485.7	0.3	2,331.9	0.4	625.5	0.1
Other non-current liabilities	1,554.4	0.3	1,565.1	0.3	7,431.5	1.2
Total non-current liabilities	200,402.3	44.2	209,704.1	38.7	220,792.6	35.4
Total liabilities	317,563.7	70.1	370,824.8	68.4	422,993.0	67.8
Equity						
Share capital:						
Authorised share capital	5,666.0	1.3	5,666.0	1.0	5,670.7	0.9

Unit: Baht million	As of December 31					
	2020 ¹	%	2021 ¹	%	2022	%
Issued and paid-up share capital	5,614.6	1.2	5,614.6	1.0	5,614.6	0.9
Share premium:						
Share premium on ordinary shares	60,331.4	13.3	60,331.4	11.1	60,331.4	9.7
Hedging reserve	(400.8)	(0.1)	812.6	0.1	4,988.0	0.8
Translation reserve	(16,361.9)	(3.6)	(6,036.1)	(1.1)	(6,494.9)	(1.0)
Excess of cost over book value of acquired subsidiaries	(3,758.3)	(0.8)	(4,115.2)	(0.8)	(4,115.2)	(0.7)
Differences arising from common control transactions	(1,235.6)	(0.3)	(1,235.6)	(0.2)	(1,235.6)	(0.2)
Retained earnings						
Appropriated						
Legal reserve	5,303.5	1.2	6,508.0	1.2	9,112.1	1.5
Unappropriated	62,257.3	13.7	81,984.3	15.1	102,884.6	16.5
Subordinated perpetual debentures	14,904.8	3.3	14,904.8	2.8	14,904.8	2.4
Equity attributable to owners of the Company (2021: Equity attributable to owners of the parent)	126,655.0	27.9	158,768.7	29.3	185,989.7	29.8
Non-controlling interests	8,952.8	2.0	12,234.8	2.3	14,895.7	2.4
Total equity	135,607.8	29.9	171,003.4	31.6	200,885.4	32.2
Total liabilities and equity	453,171.5	100.0	541,828.2	100.0	623,878.4	100.0

Statements of Income (Consolidated Financial Statements)

Unit: Baht million	For the year ended December 31					
	2020 ¹	%	2021 ¹	%	2022	%
Income (2021: Revenue)						
Revenue from sale of goods	331,512.9	100.0	468,108.3	100.0	656,266.4	100.0
Net foreign exchange gain	119.4	0.0	-	-	976.1	0.1
Gains on a bargain purchases	1,806.4	0.5	-	-	-	-
Other income	3,031.5	0.9	4,748.9	1.0	8,335.4	1.3
Total income (2021: Total Revenue)	336,470.2	101.5	472,857.2	101.0	665,577.9	101.4
Expenses						
Cost of sales of goods	287,881.9	86.8	383,128.0	81.8	544,321.3	82.9
Distribution costs	21,161.7	6.4	27,849.6	5.9	36,701.7	5.6
Administrative expenses	17,542.3	5.3	19,172.7	4.1	25,714.3	3.9
Impairment loss of property, plant and equipment, goodwill and other intangible assets (2021: Impairment loss of property, plant and equipment and right-of-use assets)	624.9	0.2	290.0	0.1	8,645.1	1.3
Management benefit expenses	309.3	0.1	321.0	0.1	478.9	0.1
Net foreign exchange loss	-	-	297.2	0.1	-	-
Total expenses	327,520.1	98.8	431,058.5	92.1	615,861.3	93.8
Profit from operating activities	8,950.1	2.7	41,798.8	8.9	49,716.7	7.6
Finance income	192.0	0.1	215.7	0.0	946.8	0.1
Finance costs	(7,673.9)	(2.3)	(7,120.7)	(1.5)	(10,495.2)	(1.6)
Expected credit loss, net (2021: Impairment loss determined in accordance with TFRS 9, net)	(54.1)	(0.0)	(97.1)	(0.0)	(41.6)	(0.0)

Unit: Baht million	For the year ended December 31					
	2020 ¹	%	2021 ¹	%	2022	%
Share of net profit (loss) of associate and joint ventures accounted for using equity method (2021: <i>Share of net profit of joint ventures accounted for using equity method</i>)	142.8	0.0	160.2	0.0	(22.8)	(0.0)
Profit before tax expense	1,556.9	0.5	34,957.0	7.5	40,103.9	6.1
Tax expense (income)	(1,243.1)	(0.4)	6,703.3	1.4	5,773.7	0.9
Profit for the year	2,800.1	0.8	28,253.7	6.0	34,330.2	5.2
Profit attributable to:						
Owners of the Company (2021: <i>Owners of the parent</i>)	2,414.3	0.7	26,288.0	5.6	31,006.1	4.7
Non-controlling interests	385.8	0.1	1,965.7	0.4	3,324.1	0.5
Profit for the year	2,800.1	0.8	28,253.7	6.0	34,330.2	5.2
Earnings per share						
Basic and diluted earnings per share (2021: <i>Basic earnings per share</i>) (in Baht)	0.30		4.55		5.39	
Core earnings per share (in Baht)*	1.29		3.76		6.02	

* Core financials are calculated as reported financials less Inventory gain/loss and less extraordinary items, if any to reflect operations before any extraordinary items.

¹ Certain amounts in the 2020 and 2021 financial statements have been reclassified to conform with current year presentation.

Statement of Cash Flows (Consolidated Financial Statements)

Unit: Baht million	For the year ended December 31		
	2020 ¹	2021 ¹	2022
Cash flows from operating activities			
Profit for the year	2,800.1	28,253.7	34,330.2
Adjustments to reconcile profit to cash receipts (<i>payments</i>)			
Tax expense (income)	(1,243.1)	6,703.3	5,773.7
Finance costs	7,673.9	7,120.7	10,495.2
Depreciation	17,757.2	18,633.8	22,893.3
Expected credit loss, net (2021: <i>Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net</i>)	54.1	97.1	41.6
Amortisation of intangible assets and other assets	2,730.0	3,102.9	2,828.1
Employee benefits expense related to defined benefit plans	623.5	926.4	950.6
Unrealised foreign exchange (gain) loss, net	219.4	(789.0)	1,042.5
Unrealised (gain) loss on fair value adjustment of derivatives, net	8.6	(24.9)	(152.2)
Share of net (profit) loss of associate and joint ventures accounted for using equity method, net of tax (2021: <i>Share of net profit of joint ventures accounted for using equity method, net of tax</i>)	(142.8)	(160.2)	22.8
Impairment loss of property, plant and equipment, goodwill and other intangible assets (2021: <i>Impairment loss on property, plant and equipment and right-of-use assets</i>)	624.9	290.0	8,645.1
Provision for losses on inventories devaluation, net	118.7	238.1	2,098.5
Gain on bargain purchases	(1,806.4)	-	-
(Gain) loss on disposal/written-off of property, plant and equipment, net	128.4	142.4	(120.7)
Finance income	(192.0)	(215.7)	(946.8)
	29,354.5	64,309.5	87,901.9
Changes in operating assets and liabilities			
Trade accounts receivable	4,631.4	(19,559.4)	5,971.2

Unit: Baht million	For the year ended December 31		
	2020 ¹	2021 ¹	2022
Inventories	10,732.2	(35,706.2)	(15,779.6)
Other current assets	(155.1)	(5,464.8)	321.0
Other non-current assets	892.1	(853.7)	1,176.3
Trade accounts payable	(3,049.2)	31,260.4	6,731.3
Repayment of employee benefit related to defined benefit plans	(432.5)	(753.0)	(643.0)
Other current liabilities	2,390.2	3,006.5	1,708.7
Other non-current liabilities	386.1	53.7	(498.1)
Net cash generated from operating activities	44,749.6	36,293.0	86,889.6
Taxes paid	(1,313.6)	(2,521.2)	(8,908.5)
Net cash from operating activities	43,436.1	33,771.9	77,981.1
Cash flows from investing activities			
Net cash outflow on acquisitions of businesses	(59,942.1)	(2,363.1)	(46,232.9)
Cash outflow on payment of payable for acquiring joint operation	-	(151.5)	(288.7)
Cash outflow on additional investment in joint ventures	(252.1)	(216.6)	(188.0)
Cash outflow on acquisition of non-controlling interest	(23.0)	(624.3)	-
(Acquisition of) proceeds from sale of other investments (2021: Proceeds from sale (purchase) of other investments)	(501.9)	193.2	(507.9)
Proceeds from sale of property, plant and equipment	49.2	330.5	558.6
Acquisition of property, plant and equipment and capital expenditure prepayment (2021: Acquisition of property, plant and equipment)	(16,788.8)	(19,959.1)	(25,631.3)
Proceeds from sale of intangible assets	7.8	15.6	90.1
Acquisition of intangible assets	(1,340.2)	(3,239.2)	(2,929.6)
Loans to joint ventures, net	(93.0)	(61.3)	6.6
Dividend received from joint ventures	-	27.2	20.0
Finance income received	189.0	220.1	945.1
Net cash used in investing activities	(78,695.1)	(25,828.4)	(74,158.3)
Cash flows from financing activities			
Proceeds from bank overdrafts and loans with non-related parties (2021: Proceeds from short and long-term loans from financial institutions)	336,306.9	330,010.4	409,070.0
Repayment of bank overdrafts and loans with non-related parties (2021: Repayment of short and long-term loans from financial institutions)	(282,564.5)	(327,626.6)	(389,332.2)
Proceeds from debentures, net of debenture issuance costs	8,983.6	9,980.8	11,980.4
Proceeds from sale of subordinated perpetual debenture acquired by subsidiary	679.6	-	-
Payment of issuance expense of subordinated perpetual debentures	(0.8)	-	-
Repayment of debentures	(4,157.6)	(7,705.8)	(7,756.4)
Payment of lease liabilities	(2,265.1)	(2,304.9)	(2,899.1)
Dividends paid to owners of the Company	(3,930.1)	(5,193.3)	(8,140.9)
Dividends paid to non-controlling interests	(186.0)	(410.9)	(541.1)
Finance costs paid	(7,549.4)	(6,787.3)	(9,731.5)
Deferred financing cost paid	(742.7)	(45.3)	(383.3)
Coupon payment on subordinated perpetual debentures	(743.8)	(750.0)	(750.0)
Net cash from (used in) financing activities	43,830.1	(10,832.9)	1,515.9
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates	8,571.1	(2,889.5)	5,338.7

Unit: Baht million	For the year ended December 31		
	2020 ¹	2021 ¹	2022
Effect of exchange rate changes on cash and cash equivalents	(69.2)	156.2	(342.8)
Net increase (decrease) in cash and cash equivalents	8,501.8	(2,733.3)	4,995.9
Cash and cash equivalents at 1 January	10,446.7	18,948.5	16,215.3
Cash and cash equivalents at 31 December	18,948.5	16,215.3	21,211.1

¹ Certain amounts in the 2020 and 2021 financial statements have been reclassified to conform with current year presentation.

Key Financial Ratio

		For the year ended December 31		
		2020	2021 ¹	2022
Liquidity Ratio				
Current ratio	times	1.0	1.1	1.1
Quick ratio	times	0.5	0.4	0.4
Cash from operating ratio	times	0.4	0.2	0.4
Receivable turnover ratio	times	9.6	10.7	11.9
Collection days	days	37.5	33.8	30.2
Inventory turnover ratio	times	4.9	5.3	5.2
Average number of days sales	days	74.1	68.1	69.1
Account payable turnover ratio	times	5.0	5.2	5.5
Payment days	days	71.9	69.8	65.3
Cash cycle	days	39.6	32.1	34.0
Profitability Ratio				
Gross profit margin	%	13.2	18.2	17.1
Operating profit margin	%	1.4	8.0	7.5
Non-operating profit margin	%	1.5	0.9	1.4
Net profit margin	%	0.7	5.6	4.7
Return of equity (ROE)	%	1.9	18.4	18.0
Efficiency Ratio				
Return on asset (ROA)	%	0.7	5.7	5.9
Return on fixed asset	%	8.6	16.9	18.7
Asset turnover	times	0.8	1.0	1.1
Financial Policy Ratio				
Interest bearing debt to equity	times	1.6	1.3	1.3
Net interest bearing debt to equity	times	1.4	1.2	1.2
Interest coverage ratio (on EBITDA)	times	3.8	8.9	8.0

¹ Certain financial ratio in 2021 have been recalculated to conform with current year presentation.

Message from the Chairman

Mr. Sri Prakash Lohia



Dear Stakeholders,

When we listed Indorama Ventures on the Stock Exchange of Thailand in 2010, we had a clear vision of what we wanted to become. With a 'growth mindset,' we set out on our journey to become a truly diverse, global chemical company.

When, more than a decade later, we achieved that vision with a record financial performance in 2021, it was evident to me that we had a special company – one that is agile and resilient, and able to withstand formidable headwinds, such as the pandemic that swept across global markets. But no sooner was the ink dry on our success, in 2022 we faced yet another test as the war in Ukraine sent further shocks through the global economy. Yet again, our people and our unique model generated strong earnings through the disruptions, culminating in another record profit.

Today, we have an unparalleled global platform of three distinct growth businesses catering to diverse end-consumer markets. This achievement, through some of the most challenging times in our company's history, has given us confidence in our integrated model, our people, and our processes.

Indorama Ventures' strength is a consequence of a deliberate, disciplined strategy that we outlined when we listed more than 12 years ago, spearheaded by the Group CEO, his management team and generous support of the Board of Directors. It is also the result of our transformation programs towards creating a 'future-ready' organization and our commitment to developing the next generation of leaders. At our Group Management Conference annual meeting in Bangkok earlier this year, where I met many of these leaders for the first time since before the pandemic, it was clear to me that our company is very well served.

On behalf of the Board, I congratulate our more than 26,000 employees in 35 countries that make up our Indorama Ventures family. Our record 2022 performance is a testament to their unstinting response to the challenge.

Recognition for our sustainability and corporate governance

In 2022, we continued to receive high marks for our ambitious investments in sustainability under our Vision 2030 and purpose of 'reimagining chemistry together to create a better world.' Recognitions include a ChemScore 1st rank among the world's top 54 chemical producers, and ongoing inclusion in the Dow Jones Sustainability Indices.


We also continued to introduce best-practice policies in boardroom ethics and governance, which was rewarded with an "Excellent 5 Star" score by the Thai Institute of Directors, the Stock Exchange of Thailand, and Security Exchange Commission of Thailand for the tenth consecutive year.

During the year, we bade farewell to Mr. William (Bill) Heinecke, who completed his term as Independent Director. As a successful entrepreneur, Bill exemplifies the 'growth mindset' that we prize at Indorama Ventures, and I thank him for his guidance. We are also benefiting from Dr. Harald Link's experience in his first full year as Independent Director.

Extending our appreciation

I would like to thank the management team for their leadership and our stakeholders who share our achievements. I am also grateful to my fellow Directors for their ongoing support. Finally, I would like to thank all our employees. I wish them every success as we step into 2023 with confidence.

Sri Prakash Lohia
Chairman



Message from the Group CEO

Mr. Aloke Lohia

Dear Stakeholders,

Last year, when I sat down to write my annual address, we had just recorded our best year ever, and I wrote with optimism as the pandemic showed signs of receding and the economy had started to breathe again. But even then, new threats were emerging. These took shape through the year as the war in Ukraine created volatility, sending energy and food prices soaring globally.

In 2022, as Indorama Ventures entered a third year of unprecedented macroeconomic challenges, we were well served by the confidence that we had gained during the pandemic in the previous two years. If the record financial result in 2021 was proof of our model's resilience, then the repeat record performance in 2022 showed our company's innate mettle in driving long-term value, even through the most challenging circumstances.

We have good reason to remain optimistic. As the world faces an extended period of geopolitical and economic disruption, our populations will continue to grow and urbanize, and seek to improve their living standards. These long-term consumer trends, to which our company's future is tied, will outlast short-term downturns, and underwrite our company's growth for many years to come.

Indorama Ventures' chemistry touches everyone in their everyday life, with more than 70% of our products serving daily necessities in consumer applications such as food and beverage packaging, home and personal care, and crop solutions to name a few. This diverse portfolio is an outcome of a carefully executed growth strategy over three decades that is impossible to imitate and makes our company a unique polyester and chemicals producer globally.

The last three years have been plagued by multiple challenges, beginning with the pandemic lockdowns, followed by the Russia-Ukraine conflict and worsening U.S.-China relations. The resilience of corporates has been tested through these 'black swan' events and, in my view, most of these challenges have today been mitigated. Energy costs and food prices are coming back down to 2019 levels and global supply chains are re-balancing, as seen by the drop in shipping costs. Countries in the Middle East, ASEAN, and India are emerging as beneficiaries, probably to China's and Europe's cost.

Our company's geographical presence is equally divided between America, Europe, and Asia, resulting in a balanced outcome in 2022. I feel we responded well to the changing landscape and showed that we can take advantage of change. When I attended the World Economic Forum at Davos this year, there was a view that Europe is heading towards a phase of deindustrialization. This opens an enormous export opportunity for ASEAN manufacturers. There are also opportunities to partner with the Gulf states, which are investing heavily in their unique proposition as a salve to Europe's energy crisis. Indorama Ventures is well positioned to capture these opportunities due to our unmatched geographic footprint and leadership in most of our markets.

2022 in review and outlook

The year ended with a record Core EBITDA of \$2.3 billion, up 31% year-on-year. This performance is a testimony to our geographically diversified, integrated, and resilient portfolio, backed by our management's agility, harnessed with a comprehensive transformation program. As was the case through the two-year pandemic, supply chain disruptions again played to our strengths in 2022 as our customer orders picked up, especially in

the first half of 2022, for safety and security reasons. As I said earlier, in 2023 we have seen normalization of factory demand for our products, but a lot of the higher-safety stock made in 2021 and 2022 has now been shed by the value chain partners as they nimbly responded to the easing supply chain and its predictability. We preemptively decided to de-stock, cutting operating rates to mid-60s levels from the more normal mid-80s.

We proactively grew our consumer necessities business in 2022 and successfully integrated the Oxiteno acquisition in Latin America as a complementary addition to our U.S. surfactants business. Additionally, Oxiteno's well-developed R&D expertise supports our customers in bio-based formulations. We have also integrated our first acquisition in PET packaging in Vietnam, a market that is benefitting from economic prosperity as well as its growing importance in the supply chain. We are in advanced stages of commercializing our expansion in polyester fibers and PET in India, a market with the highest growth rates.

The year demonstrated the benefits of our geographically diversified, interrelated, and integrated business model. A tough year for our Fibers segment was more than offset by the robust performance of Combined PET, our oldest and largest segment. Our newest platform, Integrated Oxides and Derivatives (IOD), delivered its best-ever result, complemented by the addition of Oxiteno's High-Value-Added (HVA) surfactants portfolio. Our segments are now supported by our corporate enabling functions in EHS and ESG, which are proving to be 'Centers of Excellence,' helping to build durability against short-term market fluctuations while also empowering each business to grow and thrive independently. At the 2022 Capital Markets Day, we also chalked out our Vision 2030 towards reducing our fossil fuel consumption by 25%. During 2022 we framed and rolled out our new purpose statement. All our businesses and employees worldwide now march unified as a single-threaded organization towards its realization.

I congratulate and thank our more than 26,000 employees, for whom the words 'agility' and 'resilience' are now embedded in our workplace culture as powerful drivers of our ambition for over three decades. As we build our future in a more sustainable world, we must continue to prize the confidence and optimism that we have gained over the last three years of overcoming relentless challenges.

Transformation through digitalization

Our ambitious transformation programs are generating efficiencies across our global enterprise, while also modernizing our processes and future-proofing the company. In 2022, the flagship SAP S/4HANA ERP program was successfully implemented in IOD segment and in Combined PET sites in the Americas.

Since 2020, our project Olympus savings and efficiencies program has returned \$475 million to our pocket and is close to its target of \$610 million by the end of 2023. Through project Titan, our six 'Enabling Functions' are increasingly entwined with the top 25 manufacturing plants to drive synergies, excellence, and innovation.

I am taking a personal hand in digitalizing our business as we adopt digital tools to drive sustainability, reliability, and empower our teams to make better and faster decisions. Digital transformation takes time, but we are

encouraged by several smaller wins during the year including developing solutions to improve sales performance and piloting a business dashboard for our PET plants in Asia.

Our Digital team now covers both manufacturing and business functions. Together with the SAP rollout, they are transforming our company into a globally integrated digital platform with standardized data, processes, and practices. Digital transformation has immense potential to optimize our decision making, for instance, in risk management and inventory exposure, therefore optimizing our working capital needs.

A playbook for M&A excellence

The Oxiteno acquisition is a milestone event in Indorama Ventures' growth story. Not only for its world-class talent and HVA downstream assets, but also because of the new integration playbook that we piloted in the first 100 days following the April close. This new addition to our M&A methodology ensured seamless collaboration that is resulting in better portfolio management for the combined business. Learning from this first-time experience, we replicated the playbook for other acquisitions, including Vietnam Packaging.

At our Capital Markets Day in March this year, we explained our M&A strategy in more detail. This was necessary as a company that remains committed to our goal of doubling our EBITDA every five years, through both organic and inorganic growth. Having acquired some 50 businesses over 20 years, we have built a successful methodology for identifying and integrating acquisitions against strict performance criteria. As we expand into adjacent businesses, the same rigorous discipline that we have practiced for three decades gives us a unique advantage in our industry.

Building an agile, high-performance organization

With each acquisition, we add new talent to our ranks. My intention has always been to transform Indorama Ventures into an agile, high-performance organization that is ambitious and steadfast. Agile organizations bring creativity, adaptability, and resilience that incumbent organizations do not.

Our imperative is to support the next generation of strong and capable leaders by building a culture that liberates and empowers them to model behavior that supports transformation. In 2021, we started by including our segment executive presidents on our Indorama Management Council (IMC), our highest executive body. We are now involving our top 500 leaders in key decision-making structures. As agile 'owners' with a growth mindset, they will need to think more strategically and be accountable for their decisions. Beyond the top 500 leaders, it gives me immense pleasure observing the passion and enthusiasm of our 3,000 people who underwent three years of leadership training with INSEAD.

We have taken transformative steps in important people development areas, including learning and capability development; talent retention and employee engagement; succession planning; and diversity and inclusion. I am personally focused on supporting our HR team as they build their own capabilities to this end.

As travel resumed in 2022, I was excited to meet new members of our leadership team globally. In January, we hosted the first physical Group Management Conference in Bangkok for the top 200 leaders, some of whom we had never met in person or had not seen since before the lockdowns. It was thrilling to see our industry's best talent under one roof exchanging ideas and crafting strategies to take our company to its next phase of profitable growth.

Sustainability at the center of Vision 2030

In 2022, we set up a dedicated taskforce to explore projects that fit our bold Vision 2030 to invest significantly over the next eight years in recycling technologies and biomass feedstock. This ambitious commitment to building our industry leadership in sustainability will require substantial resourcing and management focus. But we are not starting from scratch. All our businesses are connected by polyester, which is fully circular. We are already the world's biggest recycler of PET resin used in beverage bottles, and much of our feedstock across our portfolio can be replaced with biodegradable or circular materials.

During the year, we strengthened our ESG governance and sustainability teams and entered partnerships with UCY Polymer, a PET recycler in the Czech Republic; and Polymateria, a London-based innovator in biodegradable packaging solutions. We also entered a study with Carbios, a green biotech company in France, to process 'difficult to recycle waste.' We progressed plans for a new recycling site in Indonesia and launched a state-of-the-art facility in the Philippines in partnership with Coca-Cola. As an early mover, our company is best placed to create a hub of world-class recycling plants.

We are also excited by the long-awaited regulatory approval in Thailand and India allowing the use of recycled plastic material in food-contact applications, which brings opportunities catering close to 1.5 billion people in these markets.

In our own operations, we committed to science-based targets to decarbonize our sites and reduce greenhouse gas emissions under the U.N.'s Sustainable Development Goals. All three segments have now mapped out their sustainability strategies, overseen by Yash Lohia, the next generation of the Lohia family, in his role as Chairman of the ESG Council.

My priorities

When I outlined our Vision 2030 in my last report, I also named my four personal priorities, namely:

Succession planning, introducing more bio-based feedstock to our products, developing our segment strategy, and implementing digitalization as a critical part of our transformation. I hope I have outlined some of the important steps we took in 2022 towards fulfilling this commitment. Many of them will take more time to implement, but the outcomes of the actions that we undertook during the year will have profound consequences for our company well beyond the record financial result. The result of our work is that we have an unprecedented platform for further growth.

Stepping into 2023, it is likely that surging inflation, energy insecurity, and softening commodity prices will continue to challenge our industry. But time and time again, our geographic footprint, regional supply chains, balanced portfolio serving resilient end-markets, and agile leadership have proven to be more than equal to the task. As we look forward to the year ahead, with a well-practiced confidence, I am as excited and energized as I have ever been. I hope you are too!



Alope Lohia
Group Chief Executive Officer

Message from the Deputy Group CEO and Group Chief Financial Officer



Mr. Dilip Kumar Agarwal

Dear Stakeholders,

Building on the theme of my previous shareholder letter in 2021, it is with deep pride and gratitude to our teams around the world that we once again withstood enormous disruptions in 2022 to post another record financial result. This extended, exceptional performance through a multi-year period of unprecedented geopolitical and macroeconomic headwinds is a testament to Indorama Ventures' resilient model as, first, the global pandemic struck in 2020 and 2021, and then the war in Ukraine further muddled the outlook in 2022.

Throughout this period, we showed how our strong market leadership, our integrated global model, and diverse product portfolio allow us to generate earnings that outlast fluctuations. As always, my colleagues were able to respond with agility and efficiently cover our customers' needs amid global supply chain disruptions, volatile commodities prices, and surging energy costs.

A diverse, global business such as ours has inherent advantages, which were tested in recent years. For example, our leading regional and global footprint means we benefited from supply chain disruptions in the form of advantageous import parity pricing. Our diverse portfolio also has inbuilt resilience, with more than 70 percent of our products used to make daily household necessities.

I believe our impressive performance through the global pandemic in 2020 and 2021 instilled a deep confidence in our people, which in turn inspired and encouraged them to deliver another record result in 2022, even as new geopolitical challenges in Europe brought more uncertainty to our world. I am deeply grateful to all of them – a team which expanded by some 2,500 employees during the year to more than 26,000 globally as we continued to add talent through acquisitions including Oxiteno in LATAM, a packaging business in Vietnam, and wool plants in Italy and Poland.

2022 Earnings Highlights

In 2022, we delivered a record performance as our geographically diversified, integrated platform, backed by management's agility, withstood global events to generate earnings through the business cycle. Core EBITDA grew 31% on a year-on-year basis to \$2.3 billion on a 28% increase in revenue to \$18.7 billion. Core Net Profit After Tax rose 44% to \$986 million, and Core ROCE improved to 14.2% from 11.8% in 2021. Over the course of the year, we continued to strengthen our balance sheet, ending with a Net Debt to Equity ratio of 1.16, and we generated operating cash flow of \$2.2 billion.

As a result of this record performance, the company's Board approved a full-year dividend of 1.60 Baht per share, our highest-ever dividend, on the back of an 18% rise in earnings per share to 5.39 Baht year-on-year.

As about 98% of our earnings were converted to cash, this gives us confidence to maintain our focus on our long-term growth plan in 2022, including successfully integrating our new strategic surfactants business in Latin America and Vietnamese packaging acquisition. Our transformation programs continued to drive operational and financial gains across the organization, including the continued rollout of our global SAP S/4HANA ERP (Enterprise Resource Planning), and our 'Project Olympus' cost transformation program that delivered an annual run rate of \$449 million in efficiencies.

As was the case in 2021, the year highlighted our advantage of providing for the safety and wellbeing of billions of consumers, whose lives we touch every day through our safe, useful, and responsible products. This inherent robustness in our integrated business model allowed us to successfully navigate the pandemic as well as the more recent recessionary concerns, while serving as a springboard for further growth.

Our three business segments – Combined PET (CPET), Fibers, and Integrated Oxides & Derivatives (IOD) – continue to demonstrate the benefits of building an integrated and diversified global model across our polyester-based value chain. Our largest CPET segment achieved a 20% year-on-year increase in Core EBITDA to \$1.3 billion, even as volumes declined 3%. The first 6 months saw strong Integrated PET

margins; however, the fourth quarter represented an unusual challenge as customers destocked inventories on fears of a recession and normalization of the supply chain. Surging energy prices impacted our European operations, part of which we were able to pass on. Reliability issues and staff shortages put pressure on recycling profitability, while specialty chemicals suffered from a slowdown in construction. The packaging business performed well and expanded in Vietnam, a new market.

Our IOD segment recorded a Core EBITDA of \$730 million, an increase of 94% from a year earlier, following the successful integration of Oxiteno which added \$215 million to earnings. The acquisition of Oxiteno adds higher-value-added downstream surfactant products to our increasingly diversified portfolio as well as important expertise in green energy innovation and sustainable bio-based feedstock. I heartily welcome, and congratulate, our talented new Oxiteno employees in their first nine months with us. Oxiteno, together with the acquisition of Huntsman assets in 2020, forms the bulk of our newest IOD segment as a substantial new strategic growth platform for Indorama Ventures.

Fibers segment recorded a Core EBITDA of \$212 million, a 21% decline as the deteriorating geopolitical situation in Europe sparked severe energy and utility price increases. The resulting reduced demand for vehicle tires impacted our Mobility business, while our Lifestyle vertical was affected by higher inventories across key apparel markets as the prolonged lockdowns in China continued to dampen demand through the year. Lower post-pandemic demand for wipes affected our Hygiene vertical.

Outlook and strategy

As we move into 2023, fundamental demand for our products remains strong, and China's re-opening from extended pandemic restrictions is providing a welcome spur to the global economy. The elevated level of customer destocking that we saw late in 2022 was an unusual event, driven by fears of a recession and reduced transit times, and is expected to level out as business returns to normal. We will also benefit from the impairment of underperforming businesses that we undertook in 2022, including an EBITDA uplift of as much as \$65 million by 2025.

Even as we have proved our robustness, in our annual management meeting in Bangkok this year I cautioned that disruptions will be a constant for the immediate future. Interest rates have gradually moved up and inflation is rampant across the globe. While many of our products are resistant to inflation-led dips in demand, the resultant higher interest rates do increase our interest expenses, even as many of our borrowings are in long-term instruments with fixed rates. We also undertook hedging strategies against energy, forex, and commodities fluctuations as part of our rigorous risk management program.

In these circumstances, robust and resilient companies such as ours should not sit back and wait for the recovery. Our teams are leveraging the confidence they have built over several years of similar disruptions to turn ambiguity into opportunity. This requires a mindset of "sense, adapt and thrive" and a focus on balance sheet discipline, scenario planning, business playbooks, a continual search for growth, and a dedication to building a future-ready organization. Developing and empowering our leaders is key to this approach and is a fundamental cornerstone of our Vision 2030 that we announced in 2022.

Disciplined, strategic M&A

Over the past 20 years, we have made more than 50 acquisitions, which allows us to continuously strengthen our platform, people, and systems. Through M&A, we have evolved from a PET company into a global chemicals business with an exceptional compound annual growth rate of 11% since 2012.

All three of our business segments - CPET, Fibers and IOD - are connected by polyester, and our M&A strategy includes selectively building our portfolio in diversified segments along our chosen value chain. The success of our Oxiteno integration in its first nine months is an example of our disciplined approach to identifying and successfully integrating strategic acquisitions that must deliver against strict criteria. These metrics include an enhanced core EBITDA margin, a 15% return on employed capital, contribution to earnings quality, and allowing us to maintain balance sheet discipline.

The benefits of providing our customers with a more intimate regional and global capability helped us to benefit from the supply chain disruptions in recent years. In addition, we are accumulating important technologies, intellectual property, and R&D capabilities to drive the next phase of innovation, particularly in meeting our customers' increased sustainability needs. We have also bolstered our leadership teams with talented managers from these acquisitions.

Having successfully blended a global team of more than 26,000 people of 80 nationalities spread across 35 countries, Indorama Ventures is now much more than a PET company. It is a world-class leading chemical company with a global footprint, and we are excited to take the next steps in our journey.

Investing in a more sustainable world

I mentioned earlier how polyester connects all our businesses across our integrated, global footprint. Polyester is fully circular, which means sustainability potential is built into our model. Our 'Vision 2030' is about building on our industry leadership in sustainability, including through increasing our recycling capacity, introducing more circular feedstock into our products, and increasing resilience throughout our business.

In 2022, we continued investing in new sustainable technologies, including in biodegradable materials, with an ambition to use more bio-based and circular materials as feedstock. Expanding our recycled PET capacity is critical to fortify our leadership position in our largest and oldest business segment. Around half of the world's PET is recycled today, and this will continue to grow as collection improves. In 2022, we were delighted to launch our newest recycling facility in the Philippines in partnership with Coca-Cola. More plants are planned as we build towards our commitment to recycle 750,000 tons of post-consumer PET bottles by 2025, and 1.5 million tons by 2030, for an investment of \$1.5 billion.

As part of our efforts to be a purposeful leader in sustainability, we established Indorama Ventures Investments & Holdings (IVIH), our start-up business incubator investing in start-up businesses that drive advancements in recycling, bio-based chemicals and polymers, renewable feedstock, and biodegradable polymers. We have already identified 30 projects with the potential to deliver on these commitments.

¹ Excluding Oxiteno acquisition.

A truly global chemical company

As I review, not only the past year but also the last few years, I am filled with pride. When I joined Indorama Ventures nearly 30 years ago, we were just starting to establish ourselves as a niche PET business. Today, we have a footprint across the globe and are still growing. We are strategically positioned in growth markets as a global business with local production, and as the preferred supplier for our customers, many of which are global household brands. Our scale has created barriers to entry and cemented our leadership position as largest or second-largest producer in most markets. We are the largest global PET producer. In the Americas, we are the largest non-ionic surfactants and EO (Ethylene Oxide) producer. We also have leading positions in tire cord, air bag yarns and premium hygiene fibres. This scale has allowed us to invest in innovation and customer satisfaction, as well as our commitment to building a better world as a purposeful company. We have seen this strategy pay off, especially during the last two years when we could take advantage of huge disruptions to global business.

Our integrated and diverse portfolio across geographies, segments, and end-markets, means we can deliver resilient earnings for our shareholders for years to come. We are focused on attractive and growing end-markets where our diverse products touch millions of lives every day as essential daily necessities. In many of these markets, the growth potential is enormous as their populations grow, urbanize, and improve their quality of life. To capture this opportunity, we are progressing with our plan to transform, improve and modernize our processes, platforms, and people.

Acknowledgements

I have never been more confident of Indorama Ventures' continued success. Even as our world faces one existential challenge after the next, our people are delivering our clear growth plan with growing confidence. Our performance is entirely due to their dedication, and on behalf of the Indorama Management Council (IMC) we would like to thank everyone for their tireless pursuit of the company's goals. I also thank our shareholders, lenders, suppliers, and customers for their unstinting and continued support.

But we must not be complacent or lose the innate agility for which Indorama Ventures is known. In 2022, we crafted our purpose – 'Reimagining chemistry together to create a better world'. Let us do that.



Dilip Kumar Agarwal
Deputy Group Chief Executive Officer
and Group Chief Financial Officer

Message from the Chairman of the ESG Council



Mr. Yash Lohia

Dear Stakeholders,

Having celebrated 10 years of sustainability reporting in 2021, in the past year we set our ambition higher with our 'Vision 2030' to build on our industry leadership as a sustainable company, guided by our new purpose statement: Reimagining Chemistry Together to Create a Better World.

Under this vision, we will drive shareholder value in three ways – grow the core of our business, make bold portfolio moves, and increase our efforts in sustainability. All three growth drivers, including our ESG strategy, are governed by strict business metrics, including an enhanced EBITDA margin, a return on employed capital of more than 15%, improved earnings quality, and maintaining balance sheet discipline. Under this direction, our sustainability investments must both protect our future earnings and drive current business value, monitored against measurable goals, while demanding more from our products and less from our planet.

We have a clear roadmap for achieving our ESG ambitions under Vision 2030. Indorama Ventures is capturing more carbon from our operations, increasing our renewable energy consumption, and phasing out coal. We are also investing over \$8 billion in expanding our global PET recycling capacity, shifting a quarter of our raw materials away from fossil fuel-based feedstock, and decarbonizing our plants.

In 2022, we made tangible strides. Specifically, we increased our PET recycling capacity to 690,000 tons per year towards our 2025 target of 750,000 tons annually as part of our commitment to the Ellen MacArthur Foundation. We also increased our use of renewable electricity to 3.3% of total towards our 2025 target of 10%; reduced greenhouse gas intensity by 3.1% (vs. 2020) towards our 2025 target of 10%; and we diverted 67% of hazardous waste away from landfills towards our 2025 goal of 90%.

To make these commitments real and verifiable, in 2022, we signed a letter to set evidence-based goals according to the Science-Based Targets Initiative (SBTi), and we have until May 2024 to submit our targets for validation. With these science-based metrics, sustainability is increasingly part of our overall business reporting processes. This commitment to greater transparency and more robust reporting will foster greater understanding among investors of the business rationale for our aggressive sustainability investments as a fundamental driver of growth.

Indeed, our efforts are already being recognized by the financial markets. In 2022, we secured a range of sustainability-linked loans as part of our corporate financing strategy from various financial institutions, including Bank of China, Siam Commercial Bank, SMBC, and BNP. The expansion of our sustainability ambition under Vision 2030, backed by new industry standards like SBTi, will further increase investors' confidence and provide the foundation for developing our sustainability program for years to come.

This includes investing in partnerships and start-up businesses with innovative technologies in recycling, decarbonization, green chemistry, and bio-based and circular raw materials that will transform our operations as well as our product portfolio to meet our customers' evolving sustainability needs. We have made several key investments in 2022 and identified a further 30 projects with the potential to deliver on our commitments.

The work our teams achieved in 2022 will continue to drive sustainability outcomes well into this year and beyond. During the year, each of our three business segments developed their separate ESG strategies, aligned to our overall group objectives. The six 'Enabling Functions,' including the Corporate Sustainability Team, began their collaboration with our 25 most important manufacturing sites to improve their processes and operations, including optimising their respective contributions to achieving the group's decarbonization targets.

We also launched our new Sustainable Supply Chain Collaboration Program, in which we are engaging with our top suppliers to contribute to their own product carbon footprint ambitions as part of a "whole of value chain" approach. In turn, deeper engagement with our supply chain

will help us to calculate our Scope 3 emissions, identify lower emission suppliers, and share decarbonization best practice with our partners to improve our value chain overall.

ESG extends beyond decarbonization. We are exploring how to improve our impact on biodiversity and dependencies as a new area of potential shareholder value. We are also introducing global diversity, equity, and inclusion (DEI) practises that recognize the benefits of an increasingly diverse, modern workplace across 35 countries. A new Sustainability Academy will educate our leaders and employees about its importance, while Sustainability Regional Roundtables will amplify our shared goals across the organization at all levels.

Indorama Ventures has embarked on a sustainability journey for well over a decade and has a long way to go. I am emboldened by the challenge, not daunted. The past year has demonstrated the positive impact of our work in building the three core elements that drive our Vision 2030 objectives – responsible operations, empowering our people, and promoting ethical economic prosperity. Whether it be addressing climate change through decarbonizing our operations, expanding our recycling capacity to reduce plastic waste, meeting our United Nations’ Sustainable Development Goals, developing our ESG-led financing program, or implementing better ways to measure our performance, our company is already creating a better world as a more purposeful organization.



Yash Lohia
Chairman of the ESG Council



Business Operations

Strategy and Overview of Business Operations

Group Strategy

Indorama Ventures Public Company Limited, listed in Thailand, is a global sustainable chemicals producer with predominant applications in health, personal hygiene, human safety, and packaging solutions, with a global manufacturing footprint across Asia-Pacific, Europe, the Americas, and Africa. Our portfolio comprises Combined PET, Integrated Oxides and Derivatives (IOD) and Fibers. Indorama Ventures products serve major FMCG and automotive sectors, i.e., beverages, hygiene, personal care, tires, and safety segments. We have over 26,000 employees worldwide and consolidated revenue of USD 18.7 billion in 2022.

We have broadened our vision towards 2030 with a new purpose statement: **“Reimagining Chemistry Together to Create a Better World.”**

Vision 2030 represents the significant progression of our continued journey towards net zero, centered on three pillars: Decarbonization of our Operations, Innovative & Sustainable Products, and being a Future-Ready Organization.

- **Decarbonization of our Operations**

IVL is investing in operational efficiency, carbon capture technology, renewable energy, and the phasing out of coal to address Scope 1 and Scope 2 GHG emissions. We are also building the infrastructure needed to deliver a circular economy and address Scope 3 emissions, with the ambition that by 2030, one-third of our feedstock mix

will come from sustainable sources. Today, more than 80% of our feedstock serves polyester-related products, which have the potential to be made from bio-renewable and circular sources.

- **Innovative & Sustainable Products**

Reimagining our products for value, performance, and environment through next level R&D, doubling down on recycled PET leadership, and increasing portions of biomass feedstock.

- **A Future-Ready Organization**

We continue to develop and future-proof our organization with leadership that embraces a growth mindset and is empowered with the right tools to lead.

Portfolio Evolution

Today, IVL has a platform of businesses that is relatively (compared to other chemical peers) less susceptible to volatile macroeconomic conditions due to 3 key differentiating factors:

1. **Geographical Diversity**

With manufacturing locations in 35 countries evenly distributed across three regions, IVL’s widespread presence provides natural mitigation to the increasingly volatile geopolitical landscape.

Moreover, with the recent global disruptions, IVL's ability to provide shorter supply chains and serve from multiple locations brings trust and reliability to our customers.

2. Multiple Earning Streams

With three strong business segments and 10 business verticals, IVL's combined portfolio acts as a meaningful hedge to disruptions in one area at any given time. The whole is stronger than its parts. As we build an increasingly balanced portfolio, IVL is creating further opportunities for growth, especially in the downstream portfolio in areas such as home and personal care and food packaging.

3. Attractive End Markets

Over 70% of IVL's products serve consumer daily necessities in applications such as food and beverage packaging, home and personal care, and crop solutions. Not only are these end markets relatively demand inelastic, but they also have attractive growth rates catering to increasingly favorable consumer needs such as safety and hygiene.

The result of this combination of competencies is resiliency of earnings across a cycle. Our current portfolio has a variability of 19% in its EBITDA performance in the last five years on a proforma basis and delivers an average Core EBITDA of US\$130 per ton across the cycle. If we exclude 2020, this variability becomes 13% (average Core EBITDA/ton of US\$140). With each era of growth, we are successfully lifting the quality of our earnings.

In addition to the evolution of our platform, we continue to enhance our systems to strengthen and future-proof the organization. This includes investments in SAP S/4HANA, an integrated central ERP platform, continual productivity improvements through Project Olympus, and the six new corporate functions to support our business leaders in navigating the challenges of the future.

Changes and Important Developments

Company Overview

Formerly known as Beacon Global Limited, the Company was established on February 21, 2003, and renamed Indorama Ventures Public Company Limited on March 19, 2009. Indorama Ventures Public Company Limited is a holding company with investments in companies operating in the intermediate petrochemicals industry in Thailand and globally.

Company Background

We commenced business operations in 1994 with the incorporation of Indorama Holdings Ltd., which was the first worsted wool yarn producer in Thailand.

Entry into the Combined PET Business

This segment includes businesses in the Aromatics and PET value chain, including PX, PIA, NDC, PTA, PET resins, and PET packaging. This segment will also include IVL's recycling initiatives across the polyester value chain.

In 1995, we entered the petrochemical industry focusing on the polyester value chain business with the establishment of a PET resin facility in

Thailand. By end of 2022, we were the largest PET resin producer with around 18% global market share. We are also the largest PET to PET recycler globally. In various regions IVL commands #1 to #2 positions where we operate.

In 2022, we completed the acquisition of a Packaging Businesses in Vietnam, Ngoc Nghia Industry-Service-Trading Joint Stock Company (NN). NN is a leading PET converter in Vietnam, with manufacturing presence in both the North and South of Vietnam.

Entry into the Integrated Oxides and Derivatives Business (IOD)

We entered this segment by acquiring a MEG and PEO facility in the state of Texas in 2012.

In 2015, we acquired an ethylene production facility, located in Westlake, Louisiana, which is now called Indorama Ventures Olefins (IVOL).

In January 2020, we completed our acquisition of IVOX, investing in the Integrated EO and PO derivatives business, which is fully integrated downstream in surfactants (used in personal and home care) and in propylene oxides (used in insulation and foam materials).

In April 2022, we completed the acquisition of Oxiteno, a leading integrated surfactants producer, catering to highly attractive end-use markets in LATAM. This acquisition gives us a unique portfolio in high-value surfactants and significantly extends our existing IOD business. The acquisition includes 11 manufacturing plants in Latin America and USA, 5 R&D centers, an experienced management team, a strong environmental governance record, and expertise in green chemistry innovation.

Entry into the Fibers Business

This segment includes all our offerings in the mobility (automotive and tires), personal hygiene and lifestyle domains. Growth in the Fibers business comes as a result of trends towards lightweighting, use of sustainable materials, increasing attention being paid to personal hygiene and changes in the choice of personal wear, especially by the younger generation. Our Fibers business comprises 3 separate verticals – Mobility fibers, Hygiene fibers, and Lifestyle fibers - and have business heads to improve and grow the verticals. IVL has leadership positions regionally in these verticals and ranks #1 to #3 in the geography where we operate.

In 2022, we completed the acquisition of the corporate capital of Filatura Tollegno 1900 S.r.l., an Italian company located in Tollegno (Italy), active in the yarn dyeing business in Italy and the spinning and top dyeing operation in Poland. This acquisition is a strategic fit for IVL's unique integrated business platform and will make a significant contribution to the sustainable growth of the Wool business.

Extraordinary actions

In 2022, IVL impaired a few assets in Europe fibers and one PTA asset in CPET in Asia to improve future performances of these assets. Total impairment was US\$260M of which US\$257M was non-cash impairment and US\$7M is related to provision for expenses.

Success in Raising Capital

Our Initial Public Offering

Indorama Ventures became a public company on September 25, 2009. In January 2010, IVL completed an initial public offering of 400,000,000 ordinary shares at an offering price of THB 10.20 per ordinary share. The total amount raised in cash from the initial public offering of shares totaled THB 4,080 million. Simultaneously, the minority shareholders of Indorama Polymers Public Company Limited, a subsidiary of IVL listed on the Stock Exchange of Thailand, were offered under an exchange offer, 582,727,137 ordinary shares of Indorama Ventures Public Company Limited. The ordinary shares of Indorama Ventures Public Company Limited were listed and commenced trading on the Stock Exchange of Thailand (SET) on February 5, 2010, under the ticker symbol IVL. The company soon became a member of the major indices, the SET 50 Index, FTSE SET Large Cap Index, and MSCI.

Rights Offering

In November 2010, the Board of Directors passed a resolution to increase the authorized share capital from THB 4,334,271,047 to THB 4,815,856,719 and to reserve the increase in the authorized share capital of THB 481,585,672 for the exercise of Transferable Subscription Rights (TSRs). The Board approved a rights issue of TSRs to existing shareholders at the ratio of one TSR for every nine existing ordinary shares held of IVL. The conversion ratio was 1:1. One TSR to one ordinary share and the exercise price of the TSR to ordinary shares was THB 36 per ordinary share. On December 17, 2010, at the extraordinary general meeting of shareholders (EGM), the shareholders approved the issue, allocation and the terms and conditions of the TSRs. On February 24, 2011, the subscription of TSRs was completed with 99.67% of TSRs being exercised into shares. A total of 479,986,198 new shares started trading on the SET on March 3, 2011. The total amount raised in cash from this rights issue totaled THB 17,280 million.

Tender Offer

Our PET business was listed on the SET as Indorama Polymers Public Company Limited (IRP) in 2005. On December 24, 2009, IVL offered to purchase up to 100% of IRP through a tender offer whereby IRP shareholders (other than IVL and its subsidiaries) were offered IVL shares in exchange for IRP shares. The said tender offer was completed on February 1, 2010, which resulted in IVL holding directly and indirectly (through its subsidiary Indorama Holdings [Thailand] Limited) around 99.08% of the issued and paid-up capital of IRP. IRP shares were delisted from the SET on February 5, 2010.

Warrants IVL-W1 Exercised

Upon conversion of IVL-W1 until the last exercise date, which took place on August 24, 2017, the paid-up capital of the Company increased to THB 5,244,965,472 representing 5,244,965,472 ordinary shares.

Warrants IVL-W2 Exercised

Upon conversion of IVL-W2 until the last exercise date, which was on August 24, 2018, the paid-up capital of the Company increased to THB 5,614,551,908 representing 5,614,551,908 ordinary shares.

Debenture Issuance and Offering

In October 2014, the Company completed the offering of subordinated perpetual debentures No. 1/2557 for THB 15 billion, with a fixed rate coupon of 7.0% per annum for the first five years, after which the coupon will be adjusted every five years as per the stated terms and conditions.

In October 2015, the Company issued its first overseas senior unsecured bond in the amount of SGD 195 million to institutional investors in Singapore through its wholly owned subsidiary, IVL Singapore PTE Ltd. The Bond was rated AA (Stable) by Standard and Poor's with a tenure of 10 years at an interest rate of 3.73 percent per annum. It is guaranteed by the Credit Guarantee & Investment Facility (CGIF), a trust fund of the Asian Development Bank and listed on the SGX-ST.

In November 2019, the Company issued and offered subordinated perpetual debentures of Indorama Ventures Public Company Limited No. 1/2019 for THB 15 billion, with a coupon of 5.0% per annum for the first five years, after which the coupon will be adjusted every five years as per the stated terms and conditions.

In November 2020, the Company issued and offered unsubordinated and unsecured debentures with a debenture holders' representative in the name-registered certificate of Indorama Ventures Public Company Limited No. 1/2020 for THB 9 billion.

- Tranche 1 Due B.E. 2568 with a tenure of five years for a principal amount of four billion baht with a fixed coupon rate of 2.78 per cent per annum.
- Tranche 2 Due B.E. 2570 with a tenure of seven years for a principal amount of 1,990,000,000 baht with a fixed coupon rate of 3.15 per cent per annum.
- Tranche 3 Due B.E. 2573 with a tenure of 10 years for a principal amount of 3,010,000,000 baht with a fixed coupon rate of 3.42 per cent per annum.

In November 2021, IVL issued THB 10 billion in sustainability-linked bonds. The triple-tranche structure includes five, seven, and 10.5-year tenors, offering coupons of 2.48%, 3.00% and 3.60% per year respectively.

In April 2022, the Company had issued unsubordinated and unsecured debentures with debenture holders' representative in the amount of THB 12,000 million.

- Tranche 1 Due B.E. 2570 with a tenure of five years for a principal amount of 4,300,000,000 baht with a fixed coupon rate of 2.66 per cent per annum.
- Tranche 2 Due B.E. 2572 with a tenure of seven years for a principal amount of 2,700,000,000 baht with a fixed coupon rate of 3.24 per cent per annum.
- Tranche 3 Due B.E. 2575 with a tenure of ten years for a principal amount of 5,000,000,000 baht with a fixed coupon rate of 3.65 per cent per annum.



Nature of the Business

Revenue Structure

Details	Year Ended December 31, 2020		Year Ended December 31, 2021		Year Ended December 31, 2022		Operated by*
	Total		Total		Total		
	(Bt million)	%	(Bt million)	%	(Bt million)	%	
Revenue breakdown by segment							
Combined PET	212,272	64	293,470	63	404,957	62	<ul style="list-style-type: none"> AlphaPet, Inc., USA Indorama Ventures Polymers Mexico, S. de R.L. de C.V., Mexico IVL DHUNSERI Petrochem Industries Private Limited, India
Integrated Oxides and Derivatives	48,553	15	80,440	17	147,696	23	<ul style="list-style-type: none"> Indorama Ventures Oxides LLC, USA Oxiteno S.A. Indústria e Comércio, Brazil Indorama Ventures (Oxide & Glycols) LLC, US
Fibers	84,358	25	117,105	25	131,205	20	<ul style="list-style-type: none"> Indo Rama Synthetics (India) Limited, India Avgol Industries 1953 Ltd., Israel FiberVisions Corporation, USA
Elimination	(13,669)	(4)	(22,907)	(5)	(27,591)	(4)	
Consolidated revenue from sale of goods	331,513	100	468,108	100	656,266	100	

*Top 3 entities that generate the highest revenue in each segment for 2022.

Source: The Company's consolidated financial statements.

Business Overview

Indorama Ventures (SET: IVL) is a major global intermediate and downstream petrochemicals producer with 147 sites in 35 countries around the world (as of December 31, 2022) providing value-added and differentiated products and services to several diversified consumer goods industries which serve common consumer needs in hygiene, improved lifestyles, and safety.

IVL has integrated businesses which are aligned to create a sustainable value proposition. Our customer orientation, global reach, and scale allow us to benchmark ourselves globally to enhance operational excellence, while our industry leading ESG initiatives make us a sustainable global producer.

Business Description

IVL operates in three segments i.e., Combined PET, Integrated Oxides and Derivatives, and Fibers. All these segments are pioneers in their region and industry. All of them have a global ambition to grow in the right geographies and products. Ethane, PX, PP, recycled PET, and biomass are key feedstock of IVL, and end products are primarily sold to FMCG companies globally.

Portfolio Development

We continue to consolidate and gain leadership in our existing businesses while continuing to diversify our portfolio in adjacent business opportunities in a disciplined manner.

1. Combined PET

Manufacture and distribution of PET value chain comprising PX, PTA, PET, and Recycling (Integrated PET), PET preforms and packaging (Packaging), and specialty PET-related chemicals comprising PIA and NDC (Specialty Chemicals).

1.1 Integrated PET

This segment includes businesses in the aromatics and PET value chain, including PX, PTA, and PET. Given PET's unique property of 100% recyclability, reporting under this segment also includes IVL's recycling initiatives across the polyester value chain.

PX Business Overview

Paraxylene (PX) is used in the polyester chain, mainly in the production of fiber, film, and polyethylene terephthalate (PET) bottle resins, via an intermediate product – purified terephthalic acid (PTA). A small amount of PX is used in solvents and to produce di-paraxylene and herbicides.

PTA Business Overview

Terephthalic acid is an organic compound and a colorless solid. It is a commodity chemical, used principally as a precursor to polyester PET, which in turn, is used to make clothing and plastic bottles.

IVL entered the PTA business in 2008 with a strategy to develop raw material integration ensuring an uninterrupted supply of raw materials and better integration in the polyester value chain. This provides a cost competitive edge in the PET and Fibers businesses.

PET Business Overview

Our PET business is part of our core polyester value chain business and comprised 37% of our production volumes in 2022. As of December 31, 2022, we were the largest PET resin producer in the world with an aggregate installed production capacity of around six million tons per annum.

Recycling Business Overview

To respond to the needs of customers and tackle the global challenges of resource scarcity and waste, we began to explore the recycling business as part of our corporate sustainability program and to also meet growing demand from our customers. We started producing PET flakes from



discarded PET bottles in 2011 following our acquisition of Wellman Group, with flake processing facilities in Spijk, the Netherlands and Verdun, France. Over the past several years, we continued to expand our PET recycling facilities in Thailand, the United States, Mexico, France, the Philippines, Brazil, and Poland. These expansions have strengthened our business and reflect our desire to continue to build a more sustainable business while enhancing our ESG priorities.

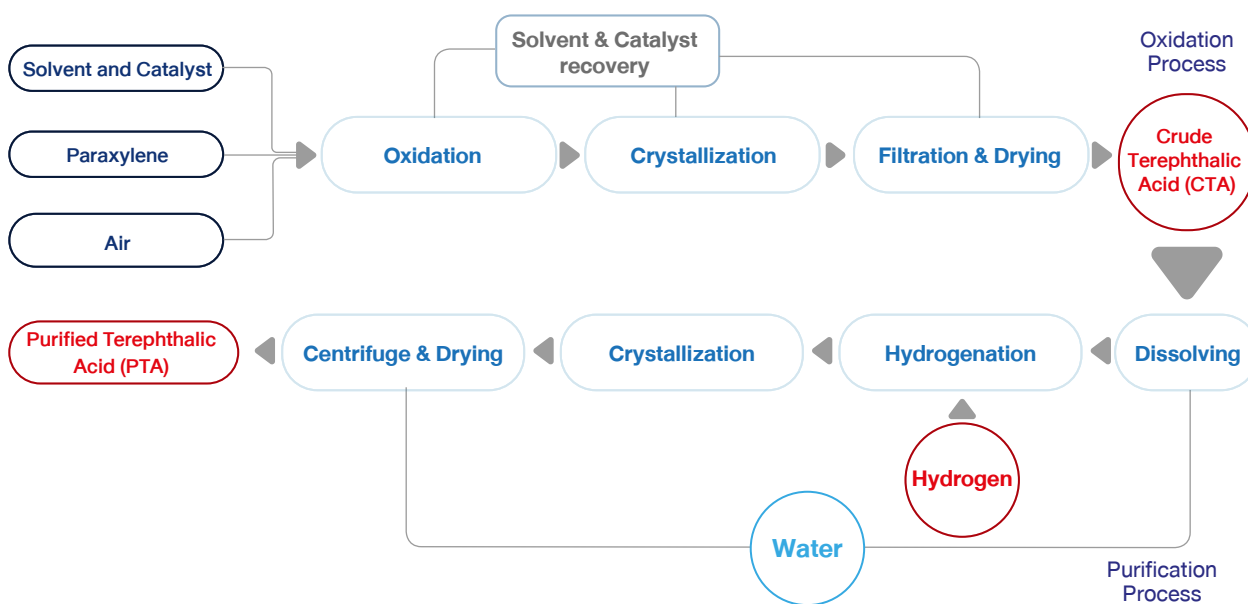
Integrated PET Production Process

PTA production process

Terephthalic acid (TA) is the result of the oxidation of paraxylene (PX). The commercial process utilizes acetic acid as a solvent, together with a catalyst composed of cobalt and manganese salts, with a bromide promoter.

A radical chain reaction occurs in a series of intermediates, starting with the oxidation of paraxylene and finally to terephthalic acid. It is then further purified to make PTA.

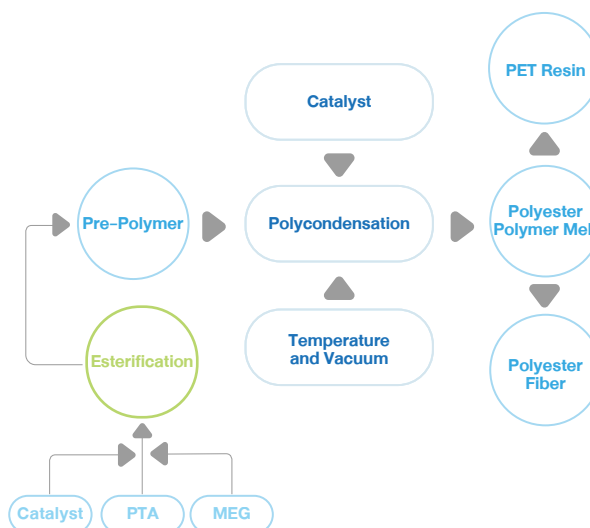
The chart below shows the PTA production process.



PET production process

PET resin comes from polyester polymer melt. The melt is converted into PET resin, either through a conventional solid-state process or through a newer technology – a melt-to-resin process. Under the conventional solid-state polycondensation process, the melt is extruded into strands, which are quickly cooled down by water. After solidification, the strands are cut into small pellets, dried, and further crystallized by being heated in a reactor under specific temperature and pressure conditions under a nitrogen flow. Under the melt-to-resin process, the polycondensation process is completed during the melt phase, resulting in the formation of pellets without going through the solidification process. We have plants that use both technologies.

The chart below summarizes the PET production process.



Integrated PET Products and Markets

We have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand. Our marketing activities include regular meetings with our customers to understand their requirements, maintain good relationships, and provide first-rate customer service.

Our downstream PET and polyester production facilities use a significant proportion of our PTA production. We sell the remaining PTA, that we do not use within the group, to third-party customers. In 2020, 2021, and 2022, 68%, 67%, and 69%, respectively, of our PTA was sold to the group.

We classify our PET customers into brand owners, beverage companies that subcontract the production of PET bottles to converters using PET resin, traders, and direct PET converters.

Integrated PET Competition

IVL is the world's largest PET producer. Currently in China, there are many new plants, especially PTA plants, using the latest technology and having lower conversion costs than previously. However, there are other competitors in Europe and North America. In terms of PET competitors, Equipolymers and Neo Group are the main competitors in the European market; Alpek (DAK Americas LLC) and the Far Eastern Group are the principal competitors in the US market; and Thai Shinkong Industry Corp. and PTTGC are the main competitors in the Thai market.

Integrated PET Production Facilities

The following table sets out the key figures for our integrated PET production facilities as of December 31, 2022:

Production Facilities	Effective Capacity* ('000 tons per annum)
PTA	5,330
PET	5,628
Recycling facilities	649
Total	11,607

* Effectively available for the period.

1.2 Packaging

Packaging Business Overview

IVL has been involved in this business for the past two decades, first through a joint venture with Sermasuk PCL in Thailand, and thereafter expanding our facilities to PET under penetrated but high-growth countries in Southeast Asian and African markets including the Philippines, Nigeria, Myanmar, Vietnam, and Ghana.

Our focus is on developing a sustainable packaging business, and not competing with PET customers, by broadening the production footprint around the world through M&A and a greenfield expansion led growth strategy.

Packaging Products and Markets

Our main customers are reputable global beverage and FMCG companies such as L'Oréal, Pepsi, Coca Cola, and P&G. We can produce clear and colored preforms, bottles, and closures, and have been regularly working

on lightweighting as per the requirements of our customers. Through superior engineering, technology, and reliable customer service and delivery, we provide our customers with packaging solutions that help them build the value and volume of their brands. We have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand.

Packaging Competition

The global beverage packaging market is extremely competitive due to the presence of many vendors involved in the packaging of soft drinks. The key players in the global market are Alpla, Ball Corporation, Crown Holdings, and Amcor.

Packaging Production Facilities

The following table describes our packaging production facilities as of December 31, 2022:

Production Facilities	Effective Capacity ('000 tons per annum)
Packaging – various sites	351

1.3 Specialty Chemicals

Specialty Chemicals Business Overview

IVL entered this segment in 2011 with the acquisition of South Carolina-based Auriga Polymers, which owns the technology for the Crystal Clear Oxygen Barrier Resin, OxyClear® and Polyshield®. Since then, we have supplemented our presence in this segment through acquisitions and new product developments, including recycled products.

Specialty Chemicals Products and Markets

Our main customers for specialty PET resins are manufacturers of medical applications, premium bottles, film, and textile specialties. For PIA, we manufacture and sell to third party customers as well as captive sales for PET resin production.

We sell NDC to outside customers who manufacture new-generation polyesters and resins to make items such as LCD flat panel displays and ultra-thin data storage tapes. We have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand.

Specialty Chemicals Competition

IVL is the only commercial producer of NDC in the world. Since there are no other commercial producers, there is no direct competition, however, products made from NDC monomers do have competition from products such as modified PET, PI, and PC.

Close to 40% of PIA demand is concentrated in domestic markets in Europe (where we are the only producer) and North America. Global PIA demand is close to 1.2 million tons with China being the largest consumer as PET is the main application for PIA. Apart from PET, the main applications are coatings and unsaturated polyester resins (UPRs). We are the second largest producer of PIA worldwide and our main competitors are Lotte, FCFC, INEOS, and MGC.

Specialty Chemicals Production Facilities

The following table describes our specialty chemical production facilities as of December 31, 2022:

Production Facilities	Effective Capacity ('000 tons per annum)
Specialty PET	574
PIA	303
NDC	28
Total	906

2 Integrated Oxides and Derivatives (IOD)

IVL entered this segment by acquiring a monoethylene glycol (MEG) and PEO facility in the US state of Texas in 2012. In 2015, we acquired an ethylene cracker site in Lake Charles, Louisiana, which now provides long-term ethylene supply integration, tied to advantaged shale gas feedstock on the US Gulf Coast.

In 2019, we invested US\$2 billion in the integrated ethylene oxide (EO) and propylene oxide (PO) derivatives business of Huntsman Corporation, which was completed in January 2020. Not only had the acquisition reinforced the continuous growth of IVL's Integrated Oxides and Derivatives segment, it also included Ethylene Oxides Derivatives and Propylene Oxides (PO) Derivatives in our product portfolio, each coming with its own strong market position.

In April 2022, we completed the acquisition of Brazil-based Oxiteno S.A. Indústria e Comércio, a subsidiary of Ultrapar Participações S.A. The acquisition gives us a unique portfolio in high-value surfactants and significantly extends our existing IOD business.

Oxiteno is a leading integrated surfactants producer, catering to highly attractive end-use markets in LATAM. The acquisition brings an excellent management team, world-class expertise in green chemistry innovation, strong customer relationships in Brazil, Uruguay, and Mexico, and substantial growth potential in attractive end markets, including the US through a new facility in Pasadena, Texas. Oxiteno has a strong commitment to environmental governance, and its focus on lowering greenhouse gas emissions will enhance IVL's ESG credentials.

Integrated Ethylene Oxide Business Overview

Monoethylene Glycol (MEG)

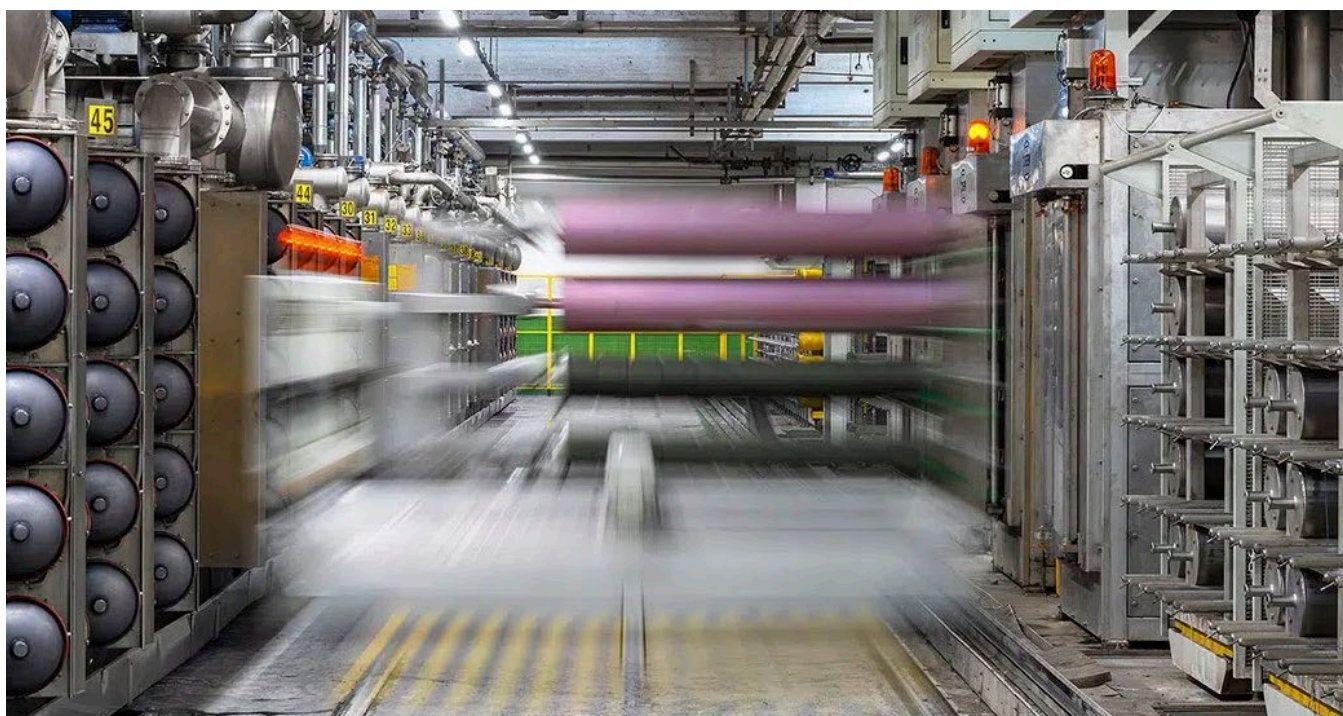
The other major feedstock produced by Indorama Ventures is MEG, which comes from ethylene via intermediate ethylene oxide. Ethylene oxide reacts with water to produce ethylene glycol.

The major end uses of ethylene glycol are in the polyester industry and in anti-freeze for automobile radiators.

Diethylene Glycol (DEG) and Triethylene Glycol (TEG)

Diethylene glycol (DEG) is a by-product made together with MEG through the processing of EO. DEG has broad applications and is used to manufacture polyester polyols, unsaturated polyester resins, buffet heaters, paints and coatings, plasticizers, liquid laundry detergents, cement grinding, and as an intermediate for polyethylene glycol.

Triethylene glycol (TEG) is a by-product of the EO process and is mainly used for natural gas dehydration. The other applications are air sterilizers, resin for windshield plate glass, and as an intermediate for polyethylene glycol.



Integrated Purified Ethylene Oxide Business Overview

Purified Ethylene Oxide (PEO)

PEO comes from the direct oxidation of ethylene in the presence of a silver catalyst.

PEO is used in the production of detergents, thickeners, solvents, plastics, and various organic chemicals such as ethylene glycol, ethanolamines, simple and complex glycols, polyglycol ethers, and other compounds. PEO is a disinfectant that is widely used in hospitals and the medical equipment industry to replace steam in the sterilization of heat-sensitive tools and equipment, such as disposable plastic syringes. PEO derivatives are used to manufacture various products such as soaps, detergents, brake fluids, weed killer, and urethane foam.

Propylene Oxide and MTBE Business Overview

Propylene oxide is a synthetic, highly-flammable, volatile, colorless liquid that is soluble in water and miscible with many organic solvents. Propylene oxide is used primarily as a chemical intermediate in the production of polyether polyols for use in making polyurethane plastics and propylene glycol. These are used in daily consumptions and various industry applications. Other major products are polypropylene glycol, propylene glycol ethers, and propylene carbonate.

Tertiary butyl alcohol (TBA) is produced as a co-product of propylene oxide in dedicated plants. TBA is dehydrated into isobutylene to produce methyl tertiary-butyl ether (MTBE). It can also be sold directly as an octane-enhancing component for gasoline.

Integrated Surfactants Business Overview

Surfactants, LAB, and ethanolamines (EOAs) are chemical substances derived from EO, which are mainly used in the manufacture of hygiene products, including detergents, homecare products, soaps, toothpastes, shampoos, hair conditioners, and other foaming products. In addition, they are the components of various consumer products, such as beauty and personal care, cosmetics, sunscreens, herbicides, emulsifiers, and unsaturated polyester resins for coatings of materials, such as films and mirrors, among others.

Others

Oleochemical Derivatives

Oleochemical Derivatives are products derived from PKO (PALM KERNEL OIL) including products such as lauryl alcohol, caprylic / capric acid, cetostearyl alcohol, and glycerin. Most of lauryl alcohol is used for captive consumption in the production of alcohol ethoxylates and sulfates. Oleochemical is a raw material for fatty acids and glycerin.

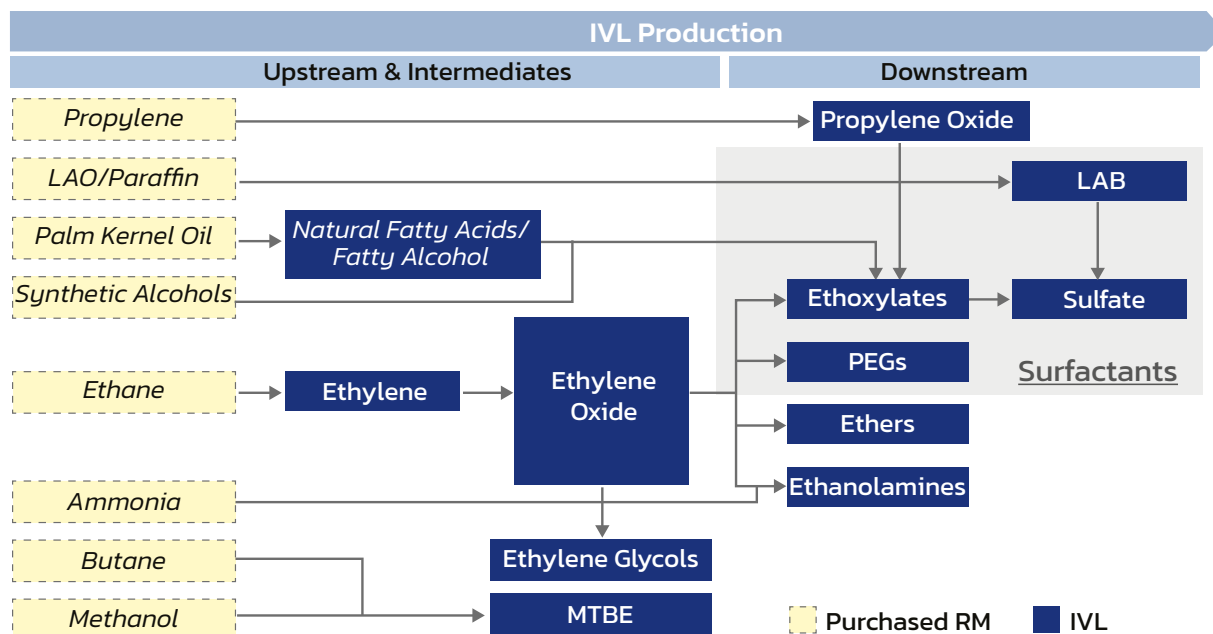
Solvents

Solvents is a substance that dissolves a solute, resulting in a solution. These products have a range of uses including dissolving paint, oil, and grease and mixing or thinning pigments, pesticides, glues, epoxy resin, and paints and cleaning automotive parts, tools, and electronics.



Integrated Oxides and Derivatives (IODs) Value Chain

The chart below summarizes the value chain of IODs.



Products and Markets

The majority of our sales are in the Americas.

EO is used as a chemical intermediate in the manufacturing of EO derivatives such as ethanolamines, polyols, ethers, and surfactants, which are in turn used in the manufacture of agricultural chemicals, rigid and flexible foams, cleaning solvents, and the personal care and beauty care industries, respectively.

Monoethylene Glycol is used as a feedstock in the production of PET and polyester fibers.

PO is consumed as the raw material of various consumer products, including polyurethane plastics, thermal insulators, solvents, preservatives in cosmetics, polyurethane resin for gravure ink, and cleaners.

Surfactants, LAB, and ethanolamines (EOAs) are used in the manufacture of hygiene products, including detergents, homecare products, soaps, toothpastes, shampoos, hair conditioners, and other foaming products.

In 2020, 2021, and 2022, 17%, 13%, and 20%, respectively, of our EO/EG was sold to the group and 83%, 87%, and 80%, respectively, of our EO/EG was sold to third-party customers.

Surfactants competition

IVL is one of the major producers of surfactants with upstream integration in the Americas. Other major integrated producers are BASF, Dow, Sasol, and Shell Chemical.

Glycols Competition

The global market for MEG is highly competitive, involving a large number of producers located throughout the world. The shale gas revolution in the US has given its producers advantaged ethylene as a feedstock material ensuring the US is a low-cost region for MEG production. IVL's integration into MEG adds value to the US PET and polyester margin chain. The largest competitors in North America include Shell Chemical, MEGlobal, Equistar, and Sabic, along with Pemex in Mexico.

Integrated Oxides and Derivatives Production Facilities

The following table sets out the key figures for our olefins production facilities as of December 31, 2022:

Production Facilities	Effective Capacity ('000 tons per annum)
Integrated Intermediates	1,835
Integrated Downstream	1,919
Total	3,754

3 Fibers Business

This segment includes all our offerings in the mobility (automotive and tires), personal hygiene, and lifestyle domains. Each of these domains continue to grow at a rate of around 3-4% annually in normal market conditions, offering the potential to become multibillion-dollar businesses individually. Growth in the fiber business is a result of trends towards lightweighting, use of sustainable materials, increasing attention being paid to personal hygiene, and changes in the choice of personal wear, specifically by the younger generation.

Polyester Fibers Business Overview

Polyester was discovered in the 1940s and has been manufactured on an industrial scale since 1947. Polyester fibers are the first choice for apparel and are used in trousers, skirts, dresses, suits, jackets, blouses, and outdoor clothing.

Polyester Fibers Products

Polyester fibers are most commonly used for apparel, from sportswear to high fashion; home textiles, such as bedding and carpets; non-woven materials including surgical gowns; technical textiles such as filters; and automotive uses including carpets and insulation.

With the acquisition of Performance Fibers in China in 2015, IVL can produce polyester yarns and polyester fabrics that are used in tires and supplied to various world-class tire companies.

Polyolefin Fibers Business Overview

The fiber forming substance is any long-chain synthetic polymer composed of a weight of at least 85% ethylene, propylene, or other olefin unit. Italy began production of olefin fibers in 1957, followed by the United States in 1960. The first commercial producer of olefin fibers in the United States was Hercules, Inc., now known as FiberVisions and wholly owned by IVL.

Polyolefin fibers provide warmth without much weight. Olefin is resistant to abrasions, stains, sunlight, fire, and chemicals. It does not dye well but has the advantage of being colorfast once pigments are added in the fibers. Since olefin fibers have a low melting point, they can be thermally bonded. One of the most important properties of olefin fibers is its strength, which can be tailored for different applications.

Polyolefin Fibers Products

Uses include nonwoven fabrics for diapers, feminine care, and adult incontinence products (as top sheets, back sheets, leg cuffs, elastic waistbands, and transfer layers); in spun laced nonwoven products such as medical disposable textiles and filtration products; or in air-laid nonwoven structures such as absorbent cores and wet wipes.

Bicomponent Fibers Business Overview

Bicomponent fibers may be defined as “extruding two polymers from the same spinneret with both polymers contained within the same filament.” Bicomponent fibers made of polyethylene sheath and polypropylene core are important fibers for the nonwoven fabric market.

Worsted Wool Yarns Business Overview

Worsted wool fabric is typically used in the making of tailored garments such as suits, as opposed to woolen wool, which is used for knitted items such as sweaters. The essential feature of worsted yarn is its straight, parallel fibers. Worsteds differ from woolens, in that the natural crimp of the wool fiber is removed in the process of spinning the yarn. IVL produces wool from Merino sheep. These sheep are sought after for their coats, which are said to produce the finest, softest wool available.

Because worsted wool is so durable, it wears very well and drapes easily, making it an ideal fabric for all sorts of garments.

Worsted Wool Yarns Products

Worsted wool produced by Indorama Ventures is used in high-end suiting for both men and women.

Nylon 6.6 Tire Cord Yarns Business Overview

With the acquisition of PHP Fibers GmbH and its subsidiaries (PHP), IVL holds 80% of PHP while the remaining 20% is held by Toyobo Co., Ltd., a leading Japanese manufacturer of high function products, including among others, automotive products.

The acquisition of PHP significantly enhances our High Value-Added (HVA) product portfolio with the addition of high performance automotive and industrial products.

Nylon 6.6 Tire Cord Yarns Products

These yarns are extensively used in air bags and tire cords in the automotive sector.

Fibers Products and Markets

Our main customers for fiber and yarn products are companies producing textiles for apparel, fast moving consumer goods companies in hygiene, companies producing home textiles, and industrial companies such as automotive companies and packaging film producers.

Fibers Competition

Competition in the global fibers and yarns industry is characterized by the presence of large diversified industrial companies, as well as a large number of relatively small niche players with a capacity of sometimes less than 10,000 tons per annum. Chinese producers dominate Polyester fibers globally before Indonesia and India. Mobility and hygiene fibers have various producers in different parts of the world.

Fibers Production Facilities

The following table describes our fibers and yarns production facilities as of December 31, 2022:

Production Facilities	Effective Capacity ('000 tons per annum)
Total	2,250



Management Discussion and Analysis (MD&A)

The following MD&A should be read in conjunction with our consolidated financial statements. It includes forward-looking statements reflecting our current views with respect to future events and performance. Thus, a number of factors could cause actual results or outcomes to differ materially from those expressed in any forward-looking statement as described in our Risk Factors and statements appearing elsewhere.

2022 EXECUTIVE SUMMARY

2022 Performance Highlights

- FY 2022 Revenue of US\$18.7B, an increase of 28% YOY
- Core EBITDA of US\$2.3B, an increase of 31% YOY
- Core EBITDA per ton of US\$155 in FY 2022 and US\$118 in FY 2021
- Operating cash flows of US\$2.2B, an increase of 111% YoY
- Net Operating Debt to Equity of 0.96
- Reported EPS of THB 5.39 and Core EPS of THB 6.02

2022 Summary Financials

Table 1: Core Financials of Consolidated Business

\$million (except where stated otherwise)	2022	2021	Change %
Production Volume (MMT) ⁵	14.65	14.72	(0)%
Sales Volume (MMT) ⁵	14.68	14.83	(1)%
Consolidated Revenue ¹	18,715	14,629	28%
Core EBITDA^{2,3,6}	2,278	1,743	31%
Combined PET	1,328	1,103	20%
Integrated Oxides and Derivatives ⁶	730	377	94%
Fibers	212	268	(21)%
Core EBIT ⁶	1,544	1,108	39%

\$million (except where stated otherwise)	2022	2021	Change %
Core Net Profit after Tax and NCI^{4,6}	986	684	44%
Core Net Profit after Tax and NCI (THB m) ⁶	34,561	21,887	58%
Core EPS after PERP Interest (THB)⁶	6.02	3.76	2.26
Core EBITDA/T (\$)⁶	155	118	31%
Operating Cash Flow	2,224	1,055	111%
Net Operating Debt to Equity⁶ (times)	0.96	0.84	+15bps

* Combined PET includes Integrated PET, Specialty Chemicals and Packaging.

¹ Consolidated financials are based upon elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to holding segment.

³ Core EBITDA are EBITDA adjusted with net extraordinary expenses/(income) and inventory losses/(gains).

⁴ Core Net Profit are reported net profits adjusted with net extraordinary expenses/(income) and inventory losses/(gains).

⁵ Volumes exclude PX and ethylene being captive.

⁶ In 2021, IVOL P&L values are moved below EBITDA to extraordinary items and consider IVOL capital employed as Non-operating Debt.

Overview

2022 was an exceptional year for IVL, resulting in record revenue of US\$18.7B, up 28% YoY, and record Core EBITDA of US\$2.3B, up 31% YoY. IVL's full year results benefited primarily from high crude oil price and higher import parity due to inflated ocean freight rates.

Unprecedented global events caused disrupted supply chains and significant cost increases, the most notable being the Ukraine crisis which triggered havoc in energy markets and ultimately global inflation. Slow economic growth in China, coupled with overcapacity, brought down benchmark prices and margins for petrochemical products, while trade constraints created disparity between Western and Asian markets. In a year of persistent uncertainty and incredible highs and lows, 2022 has highlighted IVL's ability to successfully navigate in an increasingly dynamic environment, while leveraging the strength of a platform with both geographical and product diversification.

Approximately 90% of IVL's entire portfolio can be categorized as commodity products, of which 70% are deemed essentials, catering to consumer daily necessities that are relatively demand inelastic. Despite the cyclical nature of commodities, this provides IVL with strong cash flow visibility across a cycle, allowing the company to comfortably maintain net debt to equity levels of 1X while not being at risk of servicing debt obligations. This level of leverage has allowed IVL to create superior shareholder returns while continuing our growth journey.

During the year, we made two high-quality acquisitions of Oxiteno (IOD) and Vietnam Packaging (CPET) which have contributed an additional US\$227M to overall IVL EBITDA. Both have exceeded expectations and management has successfully integrated the businesses into IVL, unlocking synergies and cost savings to optimize performance and pave the way for future growth opportunities in these areas.

We categorize these under three key themes: Value, Volume, and Extraordinary Actions.

Value

In 2022, with the introduction of China's strict zero-Covid policy, GDP for the year grew by only 3% YoY as compared to an increase of 8.4% the previous year. The drop in consumption and demand, coupled with an overcapacity of refineries, led to decreased prices and margin contraction along the petrochemical value chain. Conversely, the US and Europe had tight refinery capacity.

During this time, outside of China, economies were experiencing post-Covid demand resurgence and, as travel resumed, demand for gasoline rose and with it the price of mixed xylene (MX). The disparity between Asia MX and US and Europe MX prices widened. For IVL, MX is a raw material for our PX and PIA businesses, both produced in the West. As PX and PIA prices are linked to benchmark China price, which remained low, IVL experienced a margin crunch in these two businesses. In addition to this margin contraction, the spike in energy costs from the Ukraine war resulted in significantly weak performance for these businesses. On the other hand, IVL's MTBE business received a big boost in margins due to the strong gasoline demand and therefore strong octane value, coupled with the low price for raw materials, butane and methanol.

The Ukraine war in early 2022 provided the opportunity for the US to export NGLs to Europe, creating a spike in prices of ethane and natural gas. This resulted in an increase in both raw material (ethane) and conversion costs (natural gas) for IVL, significantly reducing the shale gas advantage and impacting both our cracker and MEG businesses in the US. Propane and butane are easier to transport, and therefore pricing is linked with global dynamics and China impact.

As Europe's energy situation begins to find equilibrium, the region is importing less from the US, normalizing the prices for ethane and natural gas.

The much-anticipated China reopening will bring back significant demand in Asia resulting in the increase of prices across the petrochemical value chain. We can expect improvement in margins of ethylene, MEG, PX, PIA, and polyester fiber, providing upside for these businesses in 2023. With Chinese travel increasing, gasoline demand will remain strong, keeping MTBE margins healthy. It is expected that any increase in butane prices will be muted due to the upcoming low demand summer season.

Volume

At the beginning of 2022, the entire value chain built up redundancies in inventory due to the uncertainty caused by supply chain disruptions, further amplified by the Ukraine war at the beginning of 2022. In the second half of the year, with the decline in ocean freight rates as well as reduced port congestion and waiting time, stock levels began to build up more quickly. Recession fears, coupled with the quick rise in inventory levels, prompted heavy destocking across the industry.

Customer destocking resulted in a decline in sales volume for IVL. To avoid high-cost inventory, management took deliberate action to reduce operating rates in response to market expectation of crude oil price softening. This exposure management resulted from working capital released and operating cash flow increased.

The PET industry had healthy benchmark China margins through most of the year due to favorable raw material prices and resilient end consumer demand. The zero-Covid policy in China only impacted domestic flows, allowing China to increase PET exports to the rest of the world, and thereby reducing China PET stock levels. Global destocking impacted demand leading to reduction in China exports, increase in China inventory, and ultimately a decline in benchmark PET spreads. It is reassuring to note that fundamental consumer demand remains intact as evidenced by the stable volume and revenue performance of our FMCG customers.

Extraordinary Actions

In light of the volatile macroeconomic climate, management undertook a strategic review of the entire business. In order to optimize use of resources and maximize capital efficiency, we have taken decisive action to take an impairment on certain Fibers assets in Europe as well as one CPET asset in Asia. We have thus taken a cash and non-cash impairment charge and related provisions. We expect the Group's ROCE to improve by 30 basis points and a US\$38M uplift in Core EBITDA for 2023. The EBITDA improvement is expected to reach up to US\$65M by 2025.

Future-proofing our Organization

We continuously look for opportunities to strengthen the P&L structure and below is an update on a few corporate initiatives:

- Project Olympus:** As part of our drive to become a lean organization and fundamentally take out non value-adding costs from the P&L, we delivered Olympus savings of US\$449M during 2022.
- Digital Initiatives:** In 2022, our digital journey gathered steam, generating savings of US\$22M. We continue to make significant future investments in this area on plant preventive maintenance, among others.
- Sustainability-linked Investments:** Our holding company Indorama Ventures Investments Holding (IVIH) continued its investments in new sustainable technologies. As part of this drive, we invested US\$6M in Polymateria, a company that makes biodegradable materials for our Fibers business.

Corporate Strength

Over the course of the year, we continued to strengthen our Balance Sheet, and while we started with a Net Debt to Equity ratio of 1.21, we ended 2022 with a ratio of 1.16.

This is after US\$2.27B of capital expenditure (including maintenance capex of US\$366M) and an increase of US\$29M in net working capital. Our liquidity position is strong with US\$2.4B in cash and cash under management plus unutilized banking lines.

Our debt servicing coverage ratio (DSCR) at 2.54 at the end of 2022 reflects strong financial discipline.

63% of our debt is at fixed rate minimizing the impact of higher interest rates in future. Sustainable finance represents a significant opportunity for IVL. Today, close to 27% is sustainability linked, which has diversified our borrowing base with reputed international institutions.



2022 Performance by Business Segments:

Combined PET (CPET)

CPET achieved an FY 2022 Core EBITDA of US\$1.3B, a growth of 20% YoY. Volumes declined by 3% YoY.

Surging energy prices negatively impacted the variable cost of our businesses, mainly in Europe. Fixed spread volumes, largely in North America, remained healthy.

Packaging Core EBITDA increased 21% YoY including a contribution of US\$12M from our Vietnam acquisition.

Specialty Chemicals Core EBITDA decreased by 67% YoY primarily due to an industry wide slowdown in housing and construction markets as well as the coatings market. PIA margins contracted severely due to increased mixed xylene price in the US and Europe, while benchmark China PIA price remained depressed. The addition of high energy costs in Europe resulted in significantly weak performance for this vertical.

	2022	2021	2022 YoY%
Integrated PET			
Sales Volume (MMt)	9.38	9.68	(3)%
Core EBITDA (\$m)	1,190	900	32%
Packaging			
Sales Volume (MMt)	0.27	0.22	25%
Core EBITDA (\$m)	97	80	21%
Specialty chemicals			
Sales Volume (MMt)	0.66	0.77	(15)%
Core EBITDA (\$m)	41	123	(67)%
Combined PET			
Sales Volume (MMt)	10.31	10.67	(3)%
Core EBITDA (\$m)	1,328	1,103	20%

Integrated Oxides and Derivatives (IOD)

IOD achieved FY 2022 Core EBITDA of US\$730M, a growth of 94% YoY.

Since 2022, we categorized the IOD segment under two verticals: Integrated Intermediates and Integrated Downstream. As IVL is not a merchant seller of ethylene but rather a net buyer, it is appropriate to show our business on an integrated basis post IVOL commercialization, which gives us ~80% ethylene integration.

Integrated Intermediates Portfolio

This vertical comprises the integrated EG and MTBE businesses. This portfolio achieved US\$209M in Core EBITDA during 2022, up from US\$-1M in 2021.

Ethylene crack margin continues to remain weak with higher ethane cost in 2022 (US\$625/t in 2021 to US\$411/t in 2022). In light of minimal spreads, management decided to bring forward a planned turnaround of the IVOL site, reducing production in Q4. In addition, the Texas freeze event in December further reduced ethylene production volumes. Asian benchmark integrated MEG spreads continued to be under pressure as the zero-Covid policy and lockdowns dampened China downstream polyester demand.

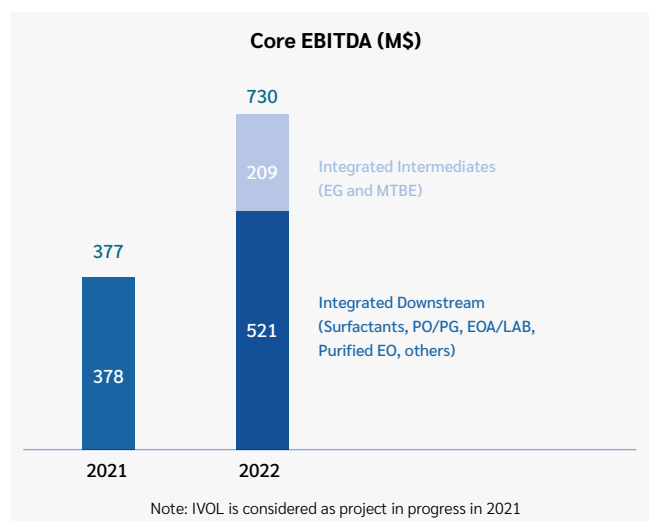
MTBE spreads started to normalize in 3Q22 after a peak in 2Q22 due to tighter gasoline demand but remained well above historical levels.

Integrated Downstream Portfolio

This portfolio achieved US\$521M in Core EBITDA in 2022, up from US\$378M in 2021, an increase of 38% YoY. As mentioned above we reclassified some of our upstream and downstream businesses.

On a 9-month basis, the newly acquired Oxiteno business delivered a Core EBITDA of US\$215M (Proforma 12 months of US\$282M). The inclusion of Oxiteno has brought higher value-added downstream surfactant products as well as differentiated bio-based product offerings. Delivery of the synergy unlocks is moving forward, with exciting opportunities on network optimization and debottlenecks at Pasadena and Dayton sites in the US.

Our IOD acquisition has done well while continuing to be long term bullish on the growth and profitability prospects of the downstream business. Brazil, our largest market in South America, saw significant down stocking by our customers. Destocking impacts were largely visible in Home and Personal Care as well as Crop solutions and Coatings. In addition, with the normalization of freight rates, an increase of imports into the region increased competitiveness for our products, impacting both volumes and spreads for the quarter.



Fibers

The Fibers segment achieved Core EBITDA of US\$212M in 2022, a decline of 21% YoY.

Lifestyle fibers Core EBITDA at US\$74M declined 43% YoY. Lifestyle fibers segment showed lower Core EBITDA mainly due to market slowdown in China with high downstream inventory amid Covid lockdowns. In Europe, the increase in utility cost impacted the performance.

Hygiene fibers segment ended 2022 with Core EBITDA of US\$79M due to decreasing polypropylene prices during the course of 2022. Volumes were down 13% due to softer demand in wipes post Covid and lower volumes in Russia.

Mobility fibers EBITDA at US\$58M showed 4% YoY growth. Volumes declined 10% in line with reduced vehicular OEM tires demand and significant cost increases in utility and energy prices. Management has shown good agility in managing price increases during this period despite heightened volatility. Replacement tire demand for light vehicles was steady.

	2022	2021	2022 YoY%
Lifestyle			
Sales Volume (MMt)	1.06	1.17	(9)%
Core EBITDA (\$m)	74	130	(43)%
Core EBITDA/t	71	116	(39)%
Mobility			
Sales Volume (MMt)	0.22	0.25	(10)%
Core EBITDA (\$m)	58	56	4%
Core EBITDA/t	263	226	17%
Hygiene			
Sales Volume (MMt)	0.33	0.37	(13)%
Core EBITDA (\$m)	79	82	(3)%
Core EBITDA/t	242	218	11%

*Core EBITDA/t calculation is based on production

BUSINESS SEGMENTS – DEFINITIONS

IVL now categorizes its businesses in three segments. This section of the document will discuss the performance of these three segments.

Combined PET	Integrated PET	Full PET value chain PX (Paraxylene), PTA (Purified terephthalic acid), PET (Polyethylene terephthalate), and Recycling
	Specialty Chemicals	Specialty PET - related chemicals (for medical, premium bottles, films, and sheets); PIA (Purified Isophthalic Acid, for PET production, unsaturated polyester resins, and coatings); NDC (Naphthalene Dicarboxylate, for optical displays and industrial/mobility uses)
	Packaging	PET preforms and packaging (e.g., bottles) for beverage and food end uses
Integrated Oxides and Derivatives	Includes Integrated EG, Integrated Purified EO, PO/MTBE and Integrated Surfactants including EOA, LAB and others	
Fibers	Polyester, Rayon, Nylon, Polypropylene, composites, and worsted wool fibers, for three end-use segments: Mobility (automotive parts, e.g., airbags, tires, seatbelts), Lifestyle (apparel, active wear), and Hygiene (diapers, feminine care)	



PERFORMANCE HIGHLIGHTS

Table 2: Segment Results

US\$ million (except where stated otherwise)	2022	2021	Change %
Crude Oil Brent (\$/bbl)	101	71	43%
Production Volume (MMT)⁴	14.65	14.72	(0)%
Combined PET	10.40	10.73	(3)%
Integrated Oxides and Derivatives	2.65	2.24	18%
Fibers	1.60	1.75	(9)%
Operating rate (%)⁶	79%	85%	(7)%
Combined PET	81%	86%	(6)%
Integrated Oxides and Derivatives ⁶	76%	84%	(9)%
Fibers	71%	79%	(11)%
Consolidated Revenue^{1,2}	18,715	14,629	28%
Combined PET	11,548	9,171	26%
Integrated Oxides and Derivatives	4,212	2,514	68%
Fibers	3,742	3,660	2%
Core EBITDA^{3,5}	2,278	1,743	31%
Combined PET	1,328	1,103	20%
Integrated Oxides and Derivatives ⁵	730	377	94%
Fibers	212	268	(21)%
Core EBITDA Margin (%)⁵	12%	12%	0 ppt
Combined PET	12%	12%	(1) ppt
Integrated Oxides and Derivatives ⁵	17%	15%	2 ppt
Fibers	6%	7%	(2) ppt
Core ROCE⁵	14.2%	11.8%	2 ppt
Combined PET	24.2%	19.1%	5 ppt
Integrated Oxides and Derivatives ⁵	11.4%	7.3%	4 ppt
Fibers	2.7%	4.6%	(2) ppt

¹ Consolidated financials are based upon elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to elimination of intra-company.

³ Core EBITDA are EBITDA adjusted with net extraordinary expenses/(income) and inventory losses/(gains).

⁴ Volumes exclude PX and ethylene being captive.

⁵ In 2021, IVOL EBIT values and capital employed are moved to extraordinary items.

⁶ Operating rates exclude Oxiteno capacity and volumes because all capacity is not available for production at the same time due to the nature of operations.

CAPITAL EXPENDITURE PROGRAM

IVL expects its balance sheet and cash flow from operations to remain strong, and sufficient to meet its planned investments in future growth opportunities.

Table 3: Major Projects Update and Recycling Growth Plan

Project	Business	Expected Completion	Total Installed Capacity (KT)	Earnings & Returns	Capex in \$M
Olympus Cost Transformation Program	Corporate and all business segments	2020-2025	n/a	EBITDA \$610M	~600-650
Corpus Christi PET/PTA	Integrated PET	Early 2025	PET: 367 kta PTA: 433 kta	Double digit IRR	~260M to spend
India PET Expansion	PET	2Q23	210 kta	Double digit IRR	~45-55

Accounting Policy

The accounting policies are adopted and applied consistently to all the periods. For more information on key accounting policies, please refer to Note number 3 of our full-year 2022 audited financial statements.

Emphasis of Matters in the Auditors Opinion

The auditor has drawn attention to the consolidated financial statements to Note 4 Significant business acquisition, Note 14 Impairment assessment of cash-generating unit, and Note 17 Impairment assessment of goodwill. The opinion is not modified with respect to this matter.

Performance Comparison

Revenue from the sale of goods

THB in millions	FY 2021	FY 2022	Change (%)
Revenue from the sale of goods	468,108.3	656,266.4	40.2%
Add: Eliminations	22,907.1	27,591.0	20.4%
Adjusted revenue from the sale of goods	491,015.4	683,857.5	39.3%
Combined PET	293,470.3	404,956.7	38.0%
Integrated Oxides and Derivatives	80,440.5	147,695.7	83.6%
Fibers	117,104.6	131,205.1	12.0%

Revenue from sales of goods for the year ended 2022 was THB 656,266.4 million, an increase of 40.2% from 2021. The increase in revenue is the result of high crude oil price that leads to the increase in crude-linked product prices.

Combined PET Revenue

Combined PET revenue for the year ended 2022 was THB 404,956.7 million, an increase of THB 111,486.4 million, or 38.0% from 2021, mainly driven by the higher product prices due to the risen oil price. In addition, the higher revenue contributions were from the acquisition of Vietnam Packaging in April 2022.

Integrated Oxides and Derivatives Revenue

Integrated Oxides and Derivatives revenue for the year ended 2022 was THB 147,695.7 million, an increase of THB 67,255.2 million, or 83.6% from 2021, primarily driven by the acquisition of Oxiteno in April 2022.

Fibers Revenue

Fibers revenue for the year ended 2022 was THB 131,205.1 million, a slight increase of THB 14,100.5 million, or 12.0% from 2021, driven mainly by the increase in crude-linked product prices.

Cost of Sales of Goods

THB in millions	FY 2021	FY 2022	Change (%)
Cost of sales of goods	383,128.0	544,321.3	42.1%
As a percentage of total revenues	81.8%	82.9%	

Our cost of sales for the year ended 2022 was THB 544,321.3 million, an increase of THB 161,193.3 million, or 42.1% from 2021 which is in line with the increase in sales revenue.

Gross Profit

THB in millions	FY 2021	FY 2022	Change (%)
Gross profit	84,980.4	111,945.2	31.7%
As a percentage of total revenues	18.2%	17.1%	

Gross profit for the year ended 2022 was THB 111,945.2 million, an increase of THB 26,964.8 million or 31.7% from 2021. The gross profit margin of 17.1% in 2022 decreased from the prior year mainly due to the higher variable costs, which resulted from the high energy crisis, despite the higher Integrated PET spreads, which can be seen in the industry spread table below.

Spread or Raw Material Margins*

Amount in US\$ per MT	FY 2021	FY 2022
Industry spread		
Asia Integrated PET	251	266
West Integrated PET	666	697

* Selling price less raw material consumption

Our actual geographic capacity mix also impacts our margin when compared with the industry.

Earnings before Interest Expenses, Income Taxes, Depreciation & Amortization (EBITDA)

THB in millions	FY 2021	FY 2022	Change (%)
EBITDA⁽¹⁾	63,438.4	83,701.1	31.9%
Add: Inventory loss/(gain) ⁽²⁾	(8,776.0)	(2,655.5)	
Add: Extraordinary items	1,100.8	(1,173.2)	
CORE EBITDA	55,763.2	79,872.4	43.2%
As a percentage of total revenues	11.9%	12.2%	
Add: Eliminations and others ⁽³⁾	163.2	(264.5)	
Adjusted CORE EBITDA	55,926.4	79,608.0	42.3%
Combined PET	35,298.9	46,571.5	31.9%
As a percentage of total Combined PET revenue	12.0%	11.5%	
Integrated Oxides and Derivatives ⁽⁴⁾	12,065.9	25,606.8	112.2%
As a percentage of total Integrated Oxides and Derivatives revenue	15.0%	17.3%	
Fibers	8,561.6	7,429.6	(13.2)%
As a percentage of total Fibers revenue	7.3%	5.7%	

⁽¹⁾ EBITDA is calculated from sales revenue adding net foreign exchange gain (loss) and other income, then deducting cost of sales, selling & administrative expenses (excludes depreciation & amortization), management benefits expenses, and adjusting by extraordinary items. Excluding Feedstock price adjustments for captive sales to PET on freight savings. There are no impacts on regional or consolidated EBITDA.

⁽²⁾ Inventory gains (losses) are the gains or losses on the inventories that IVL carries every month, due to the movement in the prices of finished products and raw materials following market movements.

⁽³⁾ Eliminations and others include the amounts attributable to intra-group transactions and the EBITDA of holding companies.

⁽⁴⁾ For this purpose, IVOL P&L values are moved below EBITDA to extraordinary items in FY2021.

Core EBITDA for the year ended 2022 was THB 79,872.4 million, an increase of THB 24,109.2 million or 43.2%. as follows:

Combined PET Core EBITDA

Combined PET Core EBITDA for the year ended 2022 was THB 46,571.5 million, an increase of THB 11,272.6 million, or 31.9% from 2021, driven by the improved spreads due to higher crude oil price and the newly acquired packaging business in Vietnam.

Integrated Oxides and Derivatives Core EBITDA

Integrated Oxides and Derivatives Core EBITDA for the year ended 2022 was THB 25,606.8 million, an increase of THB 13,540.8 million, or 112.2% from 2021, driven by the acquisition of Oxiteno in April 2022.

Fibers Core EBITDA

Fibers Core EBITDA for the year ended 2022 was THB 7,429.6 million, a decrease of THB 1,131.9 million, or 13.2% from 2021. This resulted from the softer demand of Lifestyle vertical from the market slowdown in China, softer wipes demand of Hygiene vertical post Covid, and reduced vehicular OEM tires demand for Mobility vertical.

Other Revenue

THB in millions	FY 2021	FY 2022	Change (%)
Finance income	215.7	946.8	338.8%
Net foreign exchange gain/(loss)	(297.2)	976.1	428.5%
Other Income	4,748.9	8,335.4	75.5%
Total	4,667.5	10,258.2	119.8%

Finance Income

Finance income for the year ended 2022 was THB 946.8 million, an increase of THB 731.0 million, or 338.8% from 2021. This was mainly due to an increase in current investments and interest rate during the year.

Net Foreign Exchange Gain/(Loss)

There was a net foreign exchange gain for 2022 of THB 976.1 million which equals 0.1% of net revenue. Currency volatilities are also hedged in a natural way due to our global presence, for example, USD assets are hedged naturally against USD liabilities.

Other Income

Other income for the year ended 2022 was THB 8,335.4 million, an increase of THB 3,586.5 million, or 75.5% from 2021. This was mainly due to an insurance claim of Indorama Ventures Olefins LLC., license income, and other income. Please refer to Note 28 – Other Income in the Audited Financial Statements for further details.

Expenses

THB in millions	FY 2021	FY 2022	Change (%)
Distribution costs	27,849.6	36,701.7	31.8%
Administrative expenses	19,172.7	25,714.3	34.1%
Management benefit expenses	321.0	478.9	49.2%
Total	47,343.3	62,894.9	32.8%

Total expenses for the year ended 2022 was THB 62,894.9 million, an increase of THB 15,551.6 million, or 32.8%, from 2021 because of higher spending on distribution costs and administrative expenses. This is due to the higher freight rate in 2Q22 that started to normalize in 4Q22. Please refer to Note 30 and 31 – Distribution Costs and Administrative Expenses of the Audited Financial Statements for further details on this item.

Impairment Loss of Property, Plant and Equipment, Goodwill and Other Intangible Assets

IVL recorded an impairment amount of THB 8,645.1 million in 2022 and THB 290.0 million in 2021, an increase of THB 8,355.1 million. Management undertook a strategic review of the entire business. In order to optimize the use of resources and maximize capital efficiency, we have taken decisive action to take an impairment on certain Fibers assets in Europe as well as one CPET asset in Asia. We have thus taken a cash and non-cash impairment charge and related provisions in 4Q22.

Expected Credit Loss

IVL recorded an expected credit loss amount of THB 41.6 million in 2022 and THB 97.1 million in 2021, a decrease of THB 55.5 million, or 57.2%, from 2021 due to the decrease in allowance for expected credit loss of accounts receivables and other receivables.

Research and Development (R&D) Expenses

IVL has a robust R&D platform with 27 centers for innovation around the world. We are strongly committed to providing innovative solutions to our customers and focusing on an agenda geared to sustainability. We have many high value-added businesses which require R&D, and as a result, we have a strongly focused approach to innovation. In 2022, IVL spent THB 1,457.3 million (2021: THB 674.6 million) on R&D.

Finance Costs

Finance costs for the year ended 2022 was THB 10,495.2 million, an increase of THB 3,374.5 million from 2021, that were in line with an increase in overall interest-bearing liabilities in dollar terms, together with higher interest rate during the year.

Share of Net Profit (Loss) of Associate and Joint ventures

IVL had a share of net loss from associates and joint ventures of THB 22.8 million for the year ended 2022 and a share of net profit from associates and joint ventures of THB 160.2 million for the year ended 2021. A net decrease was due to a decrease of share of profit in ES FiberVisions, ES FiberVisions (Suzhou), ES FiberVisions (Thailand), and Huvis offset with an increase of share profit in PHP (Pingdingshan), and PHP (Shanghai). Please refer to Note 11 – Investment in Associate and Joint ventures in the Audited Financial Statements for further details.

Tax Expense

Tax expense for 2022 was THB 5,773.7 million, a decrease of THB 929.6 million. Current tax expense increase in line with higher net profit, offset with deferred tax assets from Oxiteno restructuring, which recorded as tax income.

Net Profit

THB in millions	FY 2021	FY 2022	Change (%)
Net profit	28,253.7	34,330.2	21.5%
As a percentage of total revenues	6.0%	5.2%	
Profit attributable to:			
Owners of the Company	26,288.0	31,006.1	17.9%
Non-controlling interests	1,965.7	3,324.1	69.1%

Net profit for the year ended 2022 was THB 34,330.2 million, an increase of THB 6,076.5 million, or 21.5%, from 2021 due to an increase in industry margins across the business due to the substantial increase in the price of crude oil in 2022. Please refer to the explanation of EBITDA above for more details. Net profit for the period included extraordinary items, i.e., gain on bargain purchase, acquisition costs, and related transaction expenses incurred on completed acquisitions. These non-recurring items are not from the normal operations of the business.

Financial Position

IVL closely monitors the financial position and any changes of various businesses at the group level. An analysis of the financial position is presented below:

Total Assets

As of December 31, 2022, and 2021, IVL had total assets of THB 623,878.4 million and THB 541,828.2 million, respectively. The increase of 15.1% was mainly due to growth in our business from expansions and acquisitions. The major assets are as follows:

Trade Accounts Receivable

As of December 31, 2022, and 2021, IVL reported trade accounts receivable of THB 55,580.3 million, and THB 53,171.9 million respectively, representing 8.9% and 9.8% of total assets.

The risk management committee has established a credit policy under which each new customer is analyzed individually for creditworthiness before the Group's commercial terms and conditions are offered. The Group's review includes external ratings, if they are available, financial statements, credit agency information, industry information and in some cases, bank references. Sale limits are established for each customer and reviewed periodically. Any sale exceeding those limits require approval from the risk management committee.

The following table provides information about the exposure to credit risk and ECLs for trade accounts receivables.

THB in millions	Consolidated financial statements	
	December 31, 2021	December 31, 2022
Within credit terms	48,481.3	47,465.8
Overdue:		
Less than 3 months	4,408.0	6,242.8
3-6 months	250.4	1,412.5
6-12 months	30.0	574.7
Over 12 months	675.4	746.0
Total	53,845.1	56,441.8
Less: allowance for expected credit loss	(673.2)	(861.6)
Total	53,171.9	55,580.3

Inventories

As of December 31, 2022, and 2021, IVL reported inventories of THB 115,872.3 million and THB 88,979.0 million, respectively, representing 18.6% and 16.4% of total assets. The increase in inventories is the result of the completed acquisition of Oxiteno.

Investment in Associate and Joint Ventures

As of December 31, 2022, and 2021, IVL reported investments in jointly-controlled entities of THB 3,729.1 million and THB 3,488.7 million, respectively, representing 0.6% and 0.6% of total assets. The increase is mainly the result of additional investment in Associate for Oxicap during the year. Please refer to Note 11 – Investment in associate and joint ventures in the Audited Financial Statements for further details.

Property, Plant and Equipment (PPE)

As of December 31, 2022, and 2021, IVL reported property, plant, and equipment of THB 320,630.1 million and THB 291,676.9 million, respectively, representing 51.4% and 53.8% of total assets. The increase is the result of the completed acquisition of Oxiteno in the Americas, Packaging Vietnam, Tollegno, wool business in Europe and UCY Polymers, PET recycling assets in Czech Republic net with recorded an impairment loss on property, plant and equipment, and intangible assets which are in Combined PET segment in Asia, amounting to THB 4,285.1 million and in Fibers segment in Europe amounting to THB 4,019.6 million. Please refer to Note 14 – Property, plant, and equipment in the Audited Financial Statements for further details.

Intangible Assets Other Than Goodwill

As of December 31, 2022, and 2021, IVL reported intangible assets of THB 34,684.5 million and THB 33,869.3 million, respectively, representing 5.6% and 6.3% of total assets. Intangible assets increased 2.4% from last year which was mainly from customer contracts and relationships which were acquired through business combinations in 2022 net with impairment losses. Please refer to Note 18 – Other Intangible Assets in the Audited Financial Statements for further details.

Loans to Related Parties

IVL has given certain loans to related parties as per Note 5 – Related Parties in the Audited Financial Statements. There are various strategic reasons given and as of December 31, 2022, these amounts are not material.

Total Liabilities

As of December 31, 2022, and 2021, IVL reported total liabilities of THB 422,993.0 million and THB 370,824.8 million, respectively. The increase in total liabilities mainly resulted from an increase in trade accounts payable and loans from financial institutions.

Trade Accounts Payable

As of December 31, 2022, and 2021, IVL had trade accounts payable of THB 106,720.7 million and THB 90,875.9 million, respectively. The increase in trade accounts payable resulted from the completed acquisition of Oxiteno and supply chain financing for working capital optimization. The payment days slightly decreased from 69.8 days for the year ended December 31, 2021, to 65.3 days for the year ended December 31, 2022.

Interest-bearing Liabilities

As of December 31, 2022, and 2021, IVL reported interest-bearing liabilities of THB 254,313.3 million and THB 224,226.3 million, respectively, representing 40.8% and 41.4% of total liabilities and shareholders' equity.

Our net operating debt-to-equity increased from 0.84 times at the end of 2021 to 0.96 times at the end of 2022, after spending on capex and investments of THB 77,273.4 million in 2022 which was primarily from the acquisition of Oxiteno in the Americas, Packaging Vietnam, and others. IVL's net operating debt increased from THB 142,909.9 million at the end of December 31, 2021, to THB 192,893.6 million at the end of December 31, 2022. For this purpose, consider IVOL capital employed as Non-operating Debt in 2021.



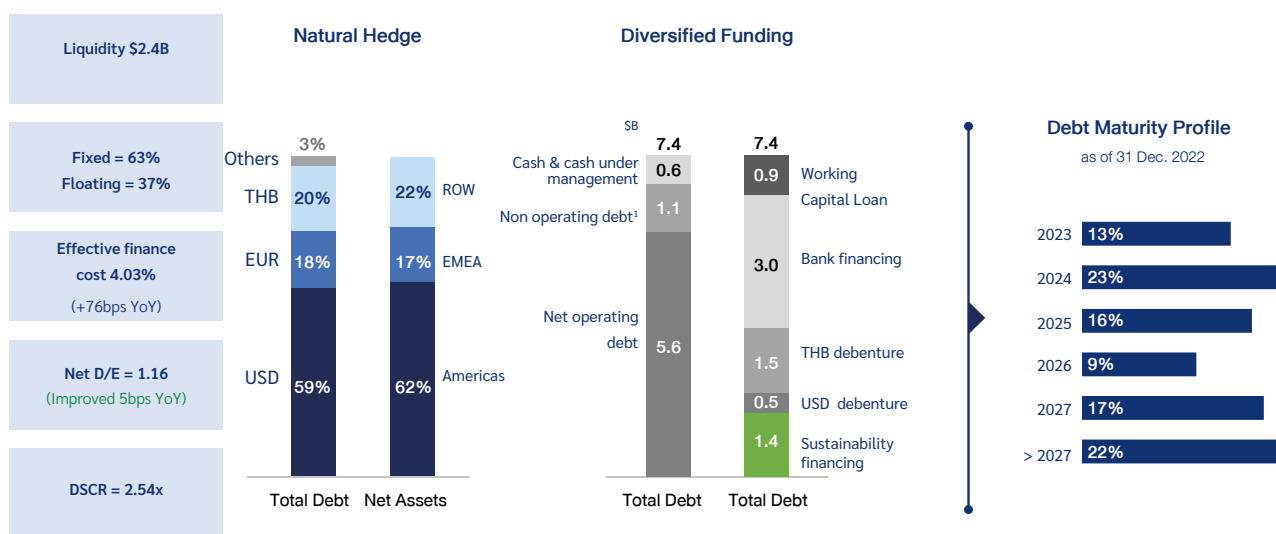
The table below describes total debt and net operating debt in THB billions:

	THB in billions	31-Dec-21	31-Dec-22
Total debt		224	254
Bank overdraft and short-term loans		27	31
Long-term debt (Current portion)		11	31
Debentures (Current portion)		8	5
Long-term debt (Non-current portion)		110	111
Debentures (Non-current portion)		69	76
Cash & Cash under management		16	22
Cash and cash equivalents		16	21
Current investments and loans given		0	1
Net debt		208	233
Non-operating debt (Project debt)		65	40
Net operating debt⁽¹⁾		143	193
Net debt to equity (times)		1.21	1.16
Net operating debt to equity (times) ⁽²⁾		0.84	0.96
Debts with fixed interest %		68%	63%
Credit rating by TRIS		AA-	AA-

⁽¹⁾ Net debt after debt for capex and investments in progress that is not generating revenue and earnings as on the date given.

⁽²⁾ Net operating debt to equity in 2021 (consider IVOL capital employed as Non-operating Debt).

The graph below provides the repayment schedule for long-term debt and debentures in US\$ billions:



¹ Includes various projects underway which are not yet completed and have not yet started contributing to earnings.

Shareholders' Equity

As of December 31, 2022, and 2021, IVL reported shareholders' equity of THB 200,885.4 million and THB 171,003.4 million, respectively. The increase in shareholders' equity was mainly due to an increase in retained earnings resulting from the profitability of the Company. Please refer to "Statement of Changes of Equity" in the Audited Financial Statements for more details.

Cash Flow

IVL generated THB 77,981.1 million in cash flow from operating activities in 2022 compared to THB 33,771.9 million in 2021. The increase in cash flow from operating activities was due to the significantly decreased net working capital needs from working capital optimization and operational excellence.

Cash flow used in investing activities of THB 74,158.3 million in 2022 was primarily paid towards the acquisition of Oxiteno in the Americas, Packaging Vietnam, and others. Capex and investments were funded by a mix of long-term loans and cash flow from operations.

Cash flow generated from financing activities of THB 1,515.9 million in 2022 was principally a result of short and long-term loans net of repayment that were used to support business growth.

Liquidity

Strong cash flow from operations and a longer average loan maturity led to a high liquidity position for the Company. As of December 2022, IVL had liquidity of THB 83,457.1 million, in the form of cash and cash under management, plus unutilized banking credit lines. This high liquidity provides us with greater flexibility in our business operations and allows us to finance accretive growth opportunities.

Key Financial Ratios

Current Ratio

Our current ratio is calculated by dividing total current assets by total current liabilities. IVL's current ratio remains the same as 2021 which is 1.1 times at the end of 2022. This ratio above 1 illustrates the strong financial position and liquidity of the Company as well as assurance of IVL's ability to pay off our short-term liabilities.

Return on Equity Ratio (ROE)

Our ROE ratio is calculated by dividing our profit attributable to owners of the Company for the period by the average of the total equity attributable to equity holders of the Company. IVL's ROE of 18.0% in 2022 slightly decreased compared to 18.4% in 2021. IVL's core ROE of 21.7% in 2022 compared to 17.2% in 2021 increased in line with growth in EBITDA and net profit.

Note: For the core ROE% calculation, we use the formula as follows:

Core profit attributable to owners of the Company after interest on perp/average of the equity attributable to shareholders of the Company. IVOL P&L and equity values are excluded in the core ROE calculation in 2021.

Return on Assets Ratio (ROA)

Our ROA ratio is calculated by dividing profit before finance costs and income tax expenses by the average total assets. For the year ended 2022, and 2021, our ROA ratio was 5.9% and 5.7%, respectively. IVL's core ROA of 9.5 % in 2022 compared to 7.6% in 2021, increased in line with a growth in core net profit.

Note: For the core ROA% calculation, we use the formula as follows: Core profit before interest and Tax expenses/average of the total assets of the Company. IVOL P&L and assets values are excluded in the core ROA calculation in 2021.

Net Debt-to-Equity Ratio (D/E)

Our Net Interest-Bearing Debt-to-Equity Ratio is calculated by dividing our interest-bearing liabilities-less cash and cash equivalents by total shareholders' equity. As of December 31, 2022, our net interest-bearing debt-to-equity stood at 1.2 times which remained the same as 2021. The Company raised cash through additional loans from financial institutions, which was used in acquisitions, ongoing expansions, and working capital needs. However, the debt covenant for most of the debts is net debt to equity of at least two times.

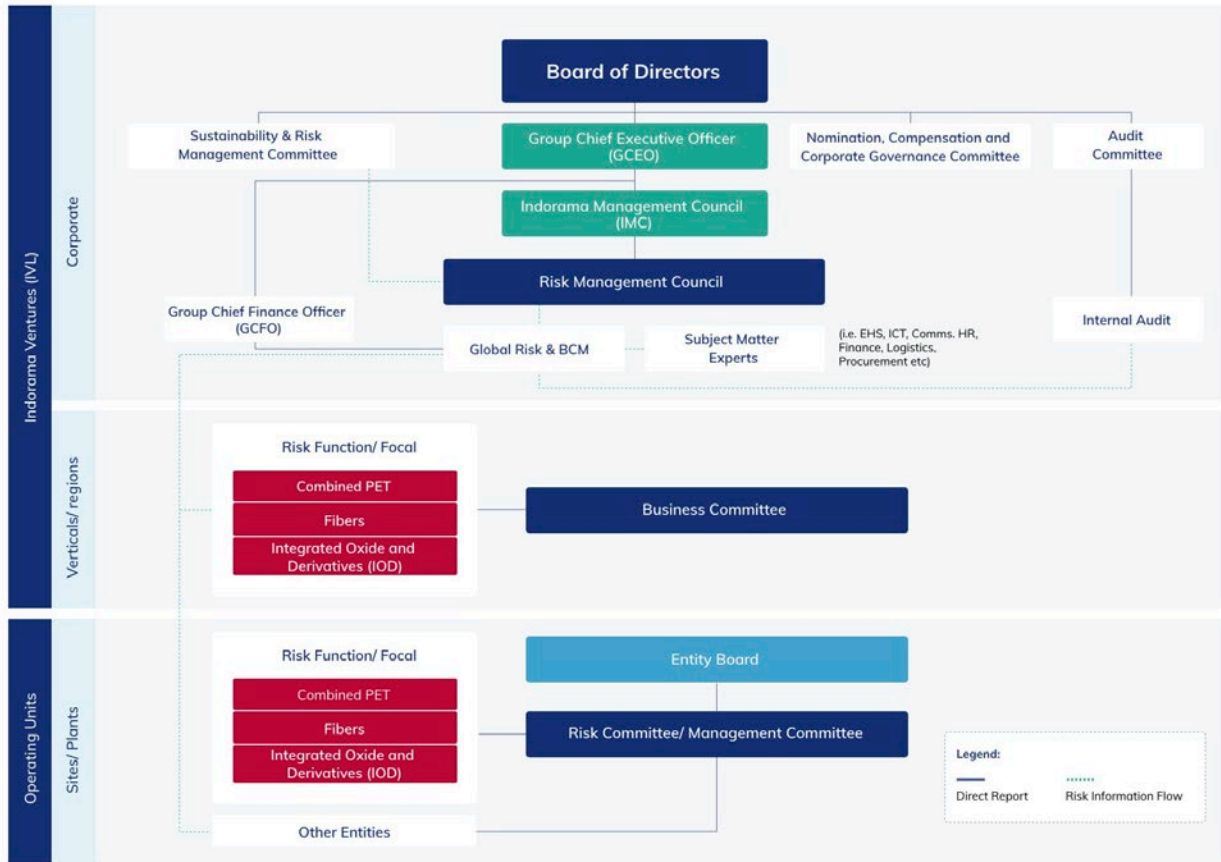
Debt Servicing Coverage Ratio (DSCR)

Our DSCR is calculated by dividing core EBITDA by annual interest and principal payments on debt. As of December 31, 2022, our DSCR was at 2.5 times which remained the same as 2021. Our DSCR is still in a good range which indicates that operations-generated income is sufficient to cover outstanding debt payments during the year. However, the debt covenant for most of the debts is at 1.1 times DSCR.



Risk Factor

Risk Governance Structure



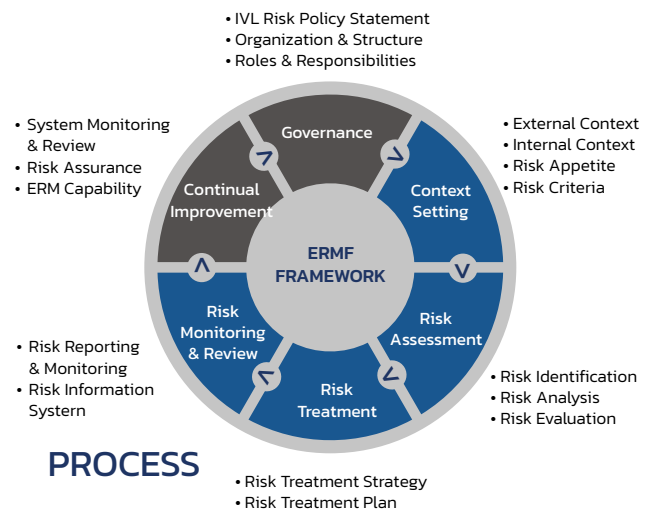
Introduction

The Enterprise Risk Management Framework adopts top-down and bottom-up approaches to identify and manage business risks at the corporate, business and subsidiary levels around the world to identify and mitigate business risks at every level. This is led by the Board, the Board Committee, and senior management, through the Risk Management Council and covers the assessment and review of internal and external risks, including global risks and factors that may affect the Company's operations. The Sustainability and Risk Management Committee, Risk Management Council, as well as the Business Risk Management Committees, monitor key risks and ensure that adequate preventive measures and mitigation controls are in place. All significant risks identified are analyzed, recorded, and reported. The risk management report and mitigation plan are reviewed quarterly by the committees at the corporate level, the business segment and plant level. In addition, to ensure comprehensive oversight, the Sustainability and Risk Management Committee also reviews sensitivity analysis of the business plan, Greenfield and M&A projects, specifically with regards to any environmental and social impacts to our business.

ERM FRAMEWORK

ERM

a **structured approach** of aligning strategy, processes, people, system, and knowledge with the purpose of evaluating and **managing the uncertainties** an organization faces. It involves **identifying, assessing, treating and monitoring risk** which aims **to reduce the likelihood and impact** of all identified risks.



PROCESS

- Risk Treatment Strategy
- Risk Treatment Plan

Emerging Risks

1. Increasing natural disasters and extreme weather events.

Risk Category: Environment

Impact on Value: Health and Safety, Operations, Financial

Risk Mitigation Actions:

- We undertake natural disaster risk assessment of our plants and sites to determine the risk level and risk mitigations and intervention required, by developing risk assessment standards in collaboration with Environmental, Health & Safety (e.g., Process Safety), and Group Insurance.
- We establish 'minimum expectations' on assessments, preparedness, and response planning including emergency response procedures for natural disasters such as hurricanes, winter freeze, and flooding.
- We communicate to plants and sites via regional rollouts and enhance global notification procedures to ensure timely escalation and interventions.

2. Increasing geopolitical shifts and rise in conflicts could lead to potential horizontal & vertical escalation (chemical or tactical nuclear weapons).

Risk Category: Geopolitical

Impact on Value: Security, Operations, Finance

Risk Mitigation Actions:

- We undertake close and continuous risk assessment and monitoring of political and security conditions of each country through partnership with International Health & Security Risk Management advisors including threats from anti-national and terrorist activities, the safety and security of employees, and the assets of the Company.
- We continue to develop robust and customized preventive programs including Personnel Security Management Protocols, Journey Management, Asset Security, etc. and access to International SOS 24/7 Assistance Service.



3. The inability to match the pace of digital transformations within the industry including machine learning, artificial intelligence, data analytics, robotics, blockchain, etc. may lead to loss of competitiveness in operational and overall business efficiencies.

Risk Category: Technology

Impact on Value: Competition, Operations

Mitigation Strategies:

- Acceleration of Digitalization for Manufacturing operations, in close collaboration with IVEX (Indorama Ventures Excellence).
- Implementation of a group data strategy with a dedicated team building a global data platform.
- Expansion of Digitalization beyond manufacturing to extract value from SAP in domains such as finance, commercial, and supply-chain.
- Advance usage of Machine Learning and AI with the establishment of a team of data scientists in the three regions (AMER, EMEA, and APAC) to increase accurate and fast decision-making, reduce waste, and increase manufacturing efficiency and throughput.

4. Risk of increasing polarization, geo-economic confrontations, and protectionist sentiment in many countries may lead to new legislation and tighter restrictions impacting the movement of goods, services, capital, labor, technology, data, and information, therefore adversely affecting our business and operations.

Risk Category: Geopolitical

Impact on Value: Regulatory, Operations

Mitigation Strategies:

- We are investing in additional legal resources in key regions and specialty disciplines to support our business. We also engage with external advisors and associations in many countries to stay up to date.
- Long-term and short-term risk profiling, sensitivity analyses of the Company's business plan, and correlation of various risks to the business.
- Close and continuous monitoring of political, economic, and legislative conditions of each country, with specific signposts and key risk indicators identified.

5. Risks of market disruption from biotechnological advancements amid rising ESG investments.

Risk Category: Competition, Technology

Impact on Value: Market Share, Financial, Reputation,

Mitigation Strategies:

- We conduct external environmental and emerging risk assessments with top global leadership and corporate functions and build in strategic decisions to effectively respond to emerging risks.
- We understand the strategic importance of research & development, choosing the appropriate level of investment while also effectively measuring the return on those investments, which has meaningful impacts on our future positioning.
- We revisit our approach to corporate strategy development by introducing increased agility, adaptability, and responsiveness to emerging threats, and continuously monitor changes in the environment to determine which, if any, could be truly disruptive.
- We committed to increase rPET capacity from 750,000 tons per annum by 2025 to 1.5 million tons by 2030. At the same time, we partnered with Ioniqa and Loop Industries to develop the next generation technology for advanced recycling to increase the range of products that can be recycled.
- Recycling and education campaigns with brand owners to differentiate PET from other plastics; global recycling education programs to promote recycling and waste separation.
- We work closely with our customers globally, providing them with innovative and specialized solutions to meet their evolving needs. Our business is exceptional in producing innovative and High-Value Added (HVA) products.
- We engage with industry organizations and regulators to promote effective recycling programs and divert PET away from pathways leading to plastic in oceans; and increase the range of recycled products.
- We engage with start-ups and technology developers to explore bio-derived raw materials, whether for surfactants, PET, or fibers, while commercializing plant-derived MEG (ethylene glycol, a raw material input to make PET).

Technology Risk

6. Cybersecurity vulnerabilities to operational technology (OT) due to human error and OT data exposure in business IT networks could lead to adverse business and reputational impacts.

Risk Category: Technology, Security, Finance, Operations

Impact on Value: Financial, Reputation, Legal

Mitigation Strategies:

- Indorama Ventures adopts the IEC 62443 International Cybersecurity Framework for Industrial Automation as the standard for OT networks.
- Based upon this framework, the Indorama Ventures Digital Team, in partnership with automation and cyber experts across Indorama Ventures businesses, develop the Indorama Ventures OT Cybersecurity Management System (CSMS) to identify a set of minimum cybersecurity controls for all Indorama Ventures manufacturing sites.
- These control measures are designed to prevent human error exploitations by implementing engineering controls such as network architecture best practices, patching requirements, backup cadences, and remote connectivity requirements for compliance by plants and sites.

7. Inability to effectively mitigate internal and external IT cyber security threats may result in IT system failures adversely impacting business, reputation, and value.

Risk Category: Technology, Security, Finance, Operations

Impact on Value: Financial, Reputation, Legal

Mitigation Strategies:

- Indorama Ventures has implemented the ISO27001 standard, which is a widely recognized international standard for information security management and governance for cyber security covering IT such as Operating Structure Assessment and Infrastructure Gap Assessment, infrastructure transformation roadmap (i.e., decentralize to centralize), and IT Operating Model Upgradation Plan.
- Our systems are protected with advanced firewalls, antivirus, antimalware, the latest system patch applications, and advanced threat protection to strengthen our system's security.
- Adopting emerging and modern AI-based protection technologies such as end point detection and response (EDR) and network segmentation.
- Our user awareness guideline educates users on the risks to cyber security and provides training on safe usage of the system.
- Our backup policy protects our system and data, such that in case of a cyberattack, systems can be recovered from the backup.
- We have the capability to reduce the impact and proliferation of an event; to identify and classify applications, databases, systems, and information. We can minimize insider risks by keeping a closer watch on user activities, analyzing user behavior, and regularly assessing risks to proactively spot weaknesses and improve our security position.
- By enhancing security and privacy capabilities across the Company, we establish stricter control over user IT activities to keep sensitive information secure and prevent insider breaches.
- Adopting IT policies, processes, and procedures to manage IT risks while providing protection against any threats. The implemented policies and procedures, which serve as guidelines for the IT team and users, are reviewed and revised as and when appropriate.
- IT infrastructure and applications are provided ensuring adequate resource allocation and optimal system functions that support the Company's strategies and goals.
- Using cloud servers to quickly restore service in the event of any interruption.
- IT assessments by external and internal auditors. In addition, we conduct internal IT assessments of all sites in accordance with IT general controls (ITGC) and report to senior management and the SRMC.
- Multiple new technologies such as multi-factor authentication and other initiatives on the cybersecurity front have been implemented to mitigate risk.
- The ongoing assessment of security threats and robust security controls in place are commensurate countermeasures to any potential risk.

Competition Risk

8. Inability to maximize profitability across the business value chain due to adverse market conditions and price fluctuations, raw material supply reliability, and intensifying competition.

Risk Category: Competition, Finance, Market, Supplier, Customer

Impact on Value: Financial, Legal, Reputation

Mitigation Strategies:

Market & Competition

- Insurance coverage including, but not limited to, loss from business interruption caused by accidents, natural disasters, damage to property, plants, and machinery breakdowns, etc. and geographic diversification of business operations to minimize the risk of disruption from natural disasters or unexpected events.
- Business continuity management will help the organization prepare, plan, test, train, react, and recover from disruptions scenarios including supply chain, etc., to minimize business interruptions and the potential cost of downtime.
- We have leverage on integration and diversification of our manufacturing facilities across geographies, product innovations, product diversification, cost reductions, and other operational excellence measures.
- Portfolio diversification, adding high value-added products, recycled products, etc., to generate customer loyalty and differentiation.

Supply Chain

- The losses or gains due to marking-to-market fluctuations in our inventories are largely mitigated by the respective cash inflows in our net working capital.
- The natural gas hedging tool is used to keep a check on price volatility by a partial fixed price natural gas contract.
- To mitigate rising ocean freight, we have now been committing all sales either on FOB or with flexible freight which is applied at the time of shipment.
- The industry is now going to move towards incorporating surcharge clauses in the existing contracts as a mitigation strategy. An internal hedging policy has also been formulated for utilities.
- Entering into long-term purchase agreements with suppliers, where possible, and hedging raw material prices when it makes economic sense.
- Developed a strategy and footprint to achieve business full potential and competitiveness through commercial excellence and procurement excellence.

Operations and Human Capital Risk

9. Process safety failures, occupational safety and environmental compliance leading to major EHS incidents, potential liabilities, and reputational damages.

Risk Category: Health and Safety, Operations, Environment

Impact on Value: Fatalities, Disruption to Business, Tarnished Reputation, Potential Liabilities

Mitigation Strategies:

- We develop and roll out the Indorama Ventures Golden Safety Rules. Designed to raise awareness and reduce the risk of life threatening and life altering events. Each rule is accompanied by full prescriptive standards that define the Company's requirements.
- We continue to focus on the execution of the Injury and Illness Prevention Program (I2P2), which systematically analyses incident trends and implements controls to reduce the most frequent types of cases.
- We roll out multiple Indorama Ventures EHS Corporate Standards which include standards designed to create a common Indorama Ventures EHS Risk Culture.
- We implement a global tool, Intellex, to capture all EHS incident reports and to manage actions to prevent these incidents from reoccurring and create a Governance plan to drive operational discipline through a structured assurance process and framework, audits, KPI monitoring, and follow up.
- We conduct a targeted Safety Leadership Training course and multiple group-wide trainings and workshops to increase occupational safety, process safety, and environmental and compliance awareness, as well as face-to-face regional EHS workshops to promote technical competencies and sharing of best practices.

10. Insufficient ready identified talents for business operations and growth.

Risk Category: Human Capital

Impact on Value: Operation and ability to meet company growth target.

Mitigation Strategies:

- We continue to develop our Employer Value proposition to attract, develop, and retain talents, while implementing a recruitment strategy targeting talent pools that are digitally enabled, including from other industries. In doing so, we align hiring policies and culture with diversity, equality, and inclusion targets; and support a hybrid and flexible work culture. We provide mental health support to all employees and their dependents via the Indorama Ventures Group Employee Assistance Program.
- We continue to focus on capability development programs through existing councils for talent development and empowerment.
- We further enhance our collaborations with universities around the world for global internship programs.
- We recognize employees through initiatives such as the Indorama Ventures Performance Excellence Awards and Culture Awards 2022, etc.
- We are recognized as Best Employer Brand Award in Thailand 2022 by the World HRD Congress.
- The Management Leadership Program continued to be rolled out throughout business segments, functions, and geographies.
- We have designed the Young Talent Program that will help identifying, developing, and retaining the next generation of leaders. This program will be piloted in 2023.
- We have succession planning and individual development plans at all leadership levels, including the plant management level.



11. Risk of reemergence of COVID-19 or other pandemic diseases may have adverse impact on business and operations.

Risk Category: Health and Safety, Operations

Impact on Value: Financial, Operations

Mitigation Strategies

Employee Care

- We adopted preventive measures worldwide, including increased safety protocols and standards at our premises, to protect our employees and maintain safety at our sites since the onset of COVID-19.
- Our teams are working closely to follow the local authority guidelines. We reduced business travel, physical events and gatherings in favor of virtual meetings, enhanced the sanitation of facilities, and enabled employees to work from home while remaining productive, collaborative, and fostering a sense of community. We remain vigilant and ready to adjust our measures in response to changing circumstances. Wearing of masks and social distancing have become the norm at all our facilities globally.

Business Continuity

- Our Risk Management Council (RMC) supports the Indorama Management Council in monitoring and escalating COVID-19 related risks at the corporate level.
- The RMC, consisting of Indorama Ventures leaders across functions and businesses with the Risk Management & Business Continuity Management team, monitors and triggers any pandemic related risks to people, assets, supply chain, and operations and works closely with local plant management to address both tactical and operational issues. We also work with specialists to analyze any potential security and safety impacts to our people. Moreover, we communicate continuously through various platforms covering the developments, impacts, and solutions regarding our plants, people, and business to our customers and stakeholders.
- We developed emergency response plans in the event of a disruption caused by the pandemic and have already put in place risk mitigation actions.
- Measures have been put in place to ensure procurement of sufficient raw materials and additives, and logistics where necessary to alleviate any possible impacts to our operations. We expect our feedstock integration and diversity in geographic manufacturing to further help us in sustaining business continuity.

Strategy Risk

12. Integration risks and the liabilities of newly acquired businesses and technologies could lead to increased costs and operational challenges that adversely impact future growth and competitiveness.

Risk Category: Finance, Reputation, Strategy

Mitigation Strategies

- We conduct detailed due diligence for acquisitions including pre-closing technical, commercial, legal, etc., and form 'Clean Teams' pre-closing to make the commercial and technical integration fast paced, agile, and synergetic.
- We develop a Playbook by Day 1, endorsed by the leadership for the first 100 days outlining information including acquisition synergies to the stakeholders on deal announcement.
- Transition management is made robust through the establishment of the Integration Management Office (IMO) and relevant workstreams to regularly update and alert on potential challenges which is shared with the Integration Leadership Steering Committee.
- The IMO proactively approaches cross functional teams to discuss and agree on mechanisms to manage any interdependencies, especially for the business continuity on Day 1, identifying links on workplan items.
- An integration system is also adopted to review and track the work plan for each workstream to ensure the right level of depth and status updates. Announcements on any changes to the organization is carried out in stages, starting with the Executive team pre-close, then their direct reports following close, and continuing with any additional impacts to the organization in the first 100 days to ensure smooth transition and effective issue management.
- The Integration Leadership also conducts open dialogue on the most important integration items, by function, to discuss the most critical items. Thorough preparedness for Day 1 critical items bringing together both sides alongside the first 100 days of integration progress, and then systems integration, ensure alignment and prompt reporting.

13. The risk of a shareholder group that holds the majority of outstanding shares.

Risk Category: Governance

Background: The Lohia family holds around 64.76% of outstanding shares and may affect voting results on significant agenda items.

Risk Mitigation Actions:

- All agenda items put to the shareholders' meetings are always discussed and approved at the Board meeting, having representation of independent and non-independent directors, including representation from major shareholders. Notice of the shareholders' meeting together with the Board opinion is well-circulated to shareholders prior to the meeting.

Environment Risk

14. Inability to timely mitigate climate change related risks – ranging from physical (water stress; increased severity of extreme weather events) which lead business to direct financial implication (cost of carbon) and indirect financial implication (cost of renewable energy), or to climate change related legislation e.g., implementation of cap-and-trade or carbon tax and other related changes in our operations, value chains, and end markets as well as enhancement on emissions reporting.

Risk Category: Integrity, Reputation, Operations

Impact on Value: Reputation

Background:

Climate change is inevitable and is going to have potentially serious implications for businesses and we anticipate further environmental, social, political, and economic repercussions post-COP 21. In response, we have conducted Climate Change Risk and Opportunity analyses, and in 2020, we became a Task Force on Climate-Related Financial Disclosures (TCFD) Supporter.

The following are some climate change related risks:

- **Regulatory:** Increased operational costs due to direct climate change legislation (e.g., cost of carbon) and indirect legislation (renewable energy targets, efficiency upgrades, etc.) may affect our operations. Depending on the scope of any carbon levy, we could be directly and/or indirectly affected either through increased production costs and/or through impacts from the supply chain and downstream customers. There would be financial implications as we would be required to improve operational efficiency, reduce consumption of carbon intensive energy, and lower the carbon footprint of products for climate protection in the long term.
- **Physical:** Extreme weather events, increasing frequency and severity of floods, droughts, cyclones, etc., as well as water stress in some areas, may impact our operations and supply chain.
- **Changing Consumer Preferences:** Changing consumption patterns leading to increased demand for green and sustainable products and environmentally friendly technologies will most probably result in a declining demand for established or GHG-intensive products, particularly in Europe. A company that is lagging in this area could face the risk of being outmaneuvered by companies that have positioned themselves more favorably with eco-friendly or green products/services.
- **Reputational:** This is another important risk as laggards on climate action risk may face damage to their reputation and brand image and finally to the license of operate.

Management has nominated one of the executive directors of the company to closely monitor both climate change risks and opportunities, who will report to all concerned, including the Sustainability and Risk Management Committee (SRMC) that, in turn, reports to the Board.

Risk Mitigation Actions:

- We have increased our focus on efficiency improvements, and adherence to GHG reduction goals and targets as defined and disclosed in our Sustainability Reports and website.
- We have participated in assessments for the Dow Jones Sustainability Indices (DJSI), CDP's climate change, MSCI, Sustainalytics, FTSE, and other external sustainability assessments in 2022. These help us to:
 - Identify climate-related financial implications and potential opportunities.
 - Align our decarbonization strategy and targets with international guidelines, such as the Science-Based Target Initiative (SBTi), to which we have officially committed on May 31, 2022.
 - Prepare for mitigation and adaptation actions for changes in regulations.
 - Introduce the decarbonization SOPs and set an internal carbon price (ICP) to internalize the economic cost of their greenhouse gas emissions in our future projects and investment planning.
 - Considered a number of IEA scenario analysis by using internal shadow carbon prices and the carbon taxes for countries where we operate. We conducted stress-testing analysis assuming carbon prices of USD 100 and 75 per ton for OECD and non-OECD countries respectively for 2030 to anticipate the impacts on production, EBITDA, and revenue as part of our risk management process.
 - Improve our risk awareness and long-term resilience.
 - Enhance our reputation and the confidence of our shareholders.
 - Continue our focus on accelerating innovations, recycling, and developing a circular economy.
 - Produce low carbon, recycled, and lightweight products.
 - Increase our focus on renewable electricity and low-carbon intensive energy.
 - Reduce our carbon footprint in all our operations through life cycle assessments and management, greenhouse gas accounting, and energy and environmental management.
 - Improve operational eco-efficiency within our operations and value chain.
 - Follow the TCFD's recommendations.
 - Conduct water risk assessment globally in all our operations and initiate water management.
 - Strategically move to be in closer proximity to our customers and suppliers to avoid supply chain risks.
 - Explore opportunities for more post-consumer recycling of our products and increase usage of bio-based raw materials.

The following mitigation actions are ongoing with regards to the water crisis:

- The risk management committees of plants and business segments regularly monitor potential regulatory changes and evaluate water risks and opportunities by conducting scenario analyses with those changes.
- We continuously communicate and work with local authorities to check ground water levels and levels in reservoirs to ensure water supplies and avoid potential conflicts with nearby stakeholders. Water is one of the elements in the business continuity plans of our entities.
- We conduct water sensitivity analysis using the AQUEDUCT Water Risk tool developed by WRI to identify water stress locations and its impact. This tool helps us evaluate changes in water demand and supply, risks from stakeholders, and regulatory changes based on current and future conditions. These results are analyzed and discussed during the SRMC meetings on a quarterly basis to identify any necessary mitigation measures or initiatives, with a focus on plants in areas facing high risks of water stress or locations with significant risks to water usage.
- We further conduct climate-related scenarios for physical risks in accordance with the RCP 4.5 and RCP 8.5 for medium term in 2030 and long term in 2040 to understand the physical risks by selecting water stress locations.
- We evaluate options and practice to reduce water consumption, increase the recycling and reuse of wastewater in accordance with 3Rs principles, and collecting of rainwater to achieve our goal of zero effluent discharge at as many sites as possible, and establish targets at the entity and group level.
- We are committed to sustainable water management (including water withdrawal and discharge) by complying with all applicable environmental laws, international standards, and regulations in the countries where we have operations, and will be proactive in demonstrating leadership and responsibility in line with our values.

Please visit the Sustainability section in our Annual Report 2022 and Sustainability Report 2022, and the Water Risk Assessment Summary Report 2022 for more information.

Climate change is an opportunity

At the same time, climate change is perceived as an opportunity as regulatory changes will increase our use of renewable energy. Possible climate change opportunities include:

- Tax incentives for increased use of renewable energy.
- Tax incentives for increased recycling of post-consumed PET; carbon credits to lower emissions through recycling and reuse as compared to virgin PET.
- Savings from global carbon and emission trading schemes due to reductions in carbon emissions.
- The increased popularity of sustainability-linked credit facilities and ESG-integrated equities have made access to financing directly dependent upon our ESG performance. Indorama Ventures has multiple sustainable financial instruments linked with sustainability targets and ESG external ratings performances. Since 2018, we have secured approximately USD 2.4 billion sustainable finance for long-term investments.
- An enhanced reputation as an environmentally friendly company through increased levels of recycling.
- Innovation advancement and the production of low-carbon products can further allow us to become a preferred company to our customers and consumers.
- Financial gain through improving operational efficiency and lowering the overall cost of production.
- Becoming the preferred company to our consumers – a strong performance through a reduced carbon footprint is now a competitive advantage.

Regulatory Risk

15. Adverse regulatory changes could lead to higher cost of compliance and value erosion.

Risk Category: Geopolitical, Reputation, Legal/Regulatory

Impact on Value: Reputation, Financial, Operational

Mitigation Strategies:

- We have procedures in place to ensure we comply with laws and regulations.
- We conduct a structured training and awareness program on regulatory and statutory requirements in operating location (local or overseas business) and monitor communication and enforcement.
- We adopt stringent risk assessments and due diligence to mitigate business risks including, but not limited to, environmental and geopolitical risks of every business opportunity before a decision is taken by the management and the Board, safeguarding Indorama Ventures from entering into an agreement or transaction that may breach any of the five critical laws (data privacy, ethics and integrity, export controls, sanctions, and competition).

16. We may not be able to protect our intellectual property rights and could be adversely impacted should we infringe on the intellectual property rights of others.

Risk Type: Legal/Regulatory

Risk Mitigation Actions:

We undertake measures like patent and trademark registrations to protect our intellectual property (IP) rights. Moreover, we conduct FTO studies wherever appropriate to ensure that we do not infringe on the IP rights of others.

Financial Risk

17. Ineffective management of project execution could lead to value leakage and impact on reputation.

Risk Category: Finance, Strategy

Impact on Value: Reputation, Financial, Strategy

Mitigation Strategies:

- A Project Cell works on each project with experienced individuals who have the requisite technical, commercial, and legal skills. They may use the resources of external consultants to strengthen the planning and execution of each project. In addition, the projects are covered with comprehensive insurance cover during the construction period for physical assets and labor working on the site.

18. Exchange rate and/or interest rate fluctuations may have a significant adverse impact on our business, financial condition, prospects, and operational results.

Risk Category: Finance

Risk Mitigation Actions:

Currency risk:

- We primarily utilize forward exchange contracts with maturities of less than one year to hedge certain financial assets and liabilities determined by foreign currencies.
- Our operating subsidiaries borrow loans in their principal currency of cash flows to have a natural hedge and minimize associated risk.

Interest rate risk:

- We manage a portfolio of debt with a mix of fixed interest rates and floating interest rates in major currencies of debt which are Thai Baht, US Dollars, and Euros. On 31 December 2022, 63% of outstanding debt is at fixed interest rates.
- We mitigate interest rate risk by using derivative financial instruments. Principally, interest rate swaps and the issuance of fixed coupon debentures/bonds, including perpetual debentures, in the Thai bond market are used to manage exposure to fluctuations in interest rates on borrowings.

Credit risk

- We have a credit policy in place and our exposure to credit risk is monitored on an ongoing basis.
- Credit evaluations are performed on all customers requiring credit over a certain amount.
- We hold credit insurance to cover credit risk. The majority of our outstanding trade receivables are secured by credit insurance, letters of credit, and other options.
- We monitor and maintain a level of cash, and cash equivalents and unutilized credit facilities, deemed adequate by management to finance our operations, and to mitigate the effects of fluctuations in cash flows.

19. Indorama Ventures is a holding company and is dependent on the receipt of dividends to make dividend payments on our shares.

Risk Category: Finance

Impact on Value: Reputation, Financial

Mitigation Strategies:

- Indorama Ventures received dividend income of THB 10.93 billion in the year 2022 from its direct and indirect subsidiaries while it paid dividends of THB 8.14 billion to its shareholders. The dividend received is 1.34 times the dividend paid. At the end of the year 2022, the retained earnings have decreased to THB 19.40 billion from THB 21.45 billion.
- Annual planning is done for the receipt of interim and final dividends from direct and indirect subsidiaries. The respective CFO/financial controllers plan for the required corporate approvals and take their cash flow plan into consideration for the payment of dividends.

20. Risk that the Company cannot comply with debt covenants.

Risk Category: Finance

Background:

Indorama Ventures and its subsidiaries have total outstanding debts of THB 254.31 billion at the end of 2022. The total outstanding debt includes bank overdrafts, short-term loans, long-term loans, debentures/bonds, and financial lease liabilities. The net debt-equity ratio at the end of 2022 is around 1.16 times, compared to what is required under financial covenants of equal to or less than 2.00 times.

The financial position has strengthened over the years with a larger equity base and increase in cash flow from operations. The total shareholders' equity at the end of 2022 is THB 200.89 billion (including perpetual debentures of THB 14.90 billion). In addition, syndicated bank loans at regional level and subsidiaries that have standalone financing are required to meet financial obligations and comply with financial covenants.

In October 2022, the domestic credit rating of Indorama Ventures was re-affirmed at AA- by TRIS. Indorama Ventures would like to sustain a business and financial profile which maintains or enhances its credit rating profile.

Impact on Value: Reputation, Finance, Operations

Mitigation Strategies:

The Board of Directors provides guidance to maintain a net debt-equity ratio that does not exceed 1.50.

- Diversified sources of financing through long-term loans, debentures, short-term loans, working capital financing solutions, and others in multiple currencies such as Thai Baht, US Dollars, Euros, and others.
- Tap sources of long-term sustainability linked financing.
- Surplus unutilized credit lines from banks/institutions to have surplus liquidity.
- Monitoring of our financial position, cash flows and covenants on a quarterly basis.



Business Drivers for Sustainability

Sustainability Overview

Every year, the expectations and demands for sustainability are increasing from our customers, industry, alliances and regulations. As regulations surrounding nature and climate increase, our stakeholders expect us to minimize our impact on the environment, create more sustainable products, be transparent and accountable, and adapt to continuous global challenges. We rise to this challenge, not only because we believe sustainability will ensure the continuity of our business, but also because we value our role in building a better world.

IVL continues to place great importance on sustainability, and 2022 was no different. We adhered to new ways of working with more collaboration and structure, which led to the enhancement of our vision for sustainability. It is no secret that the only way to remain a leader within the industry is to continually adapt to change, and we entrenched this quality through all the functions at IVL. We continuously keep up with industry and market trends, analyze our sustainability risks, benchmark ourselves against peers and industry leaders, and focus on developing low carbon, environmentally friendly products that are good for society.

We are on track to meet our 2025 and 2030 sustainability targets and global recycling commitments. To accelerate our sustainability objectives and support business purposes, we developed business segment ESG

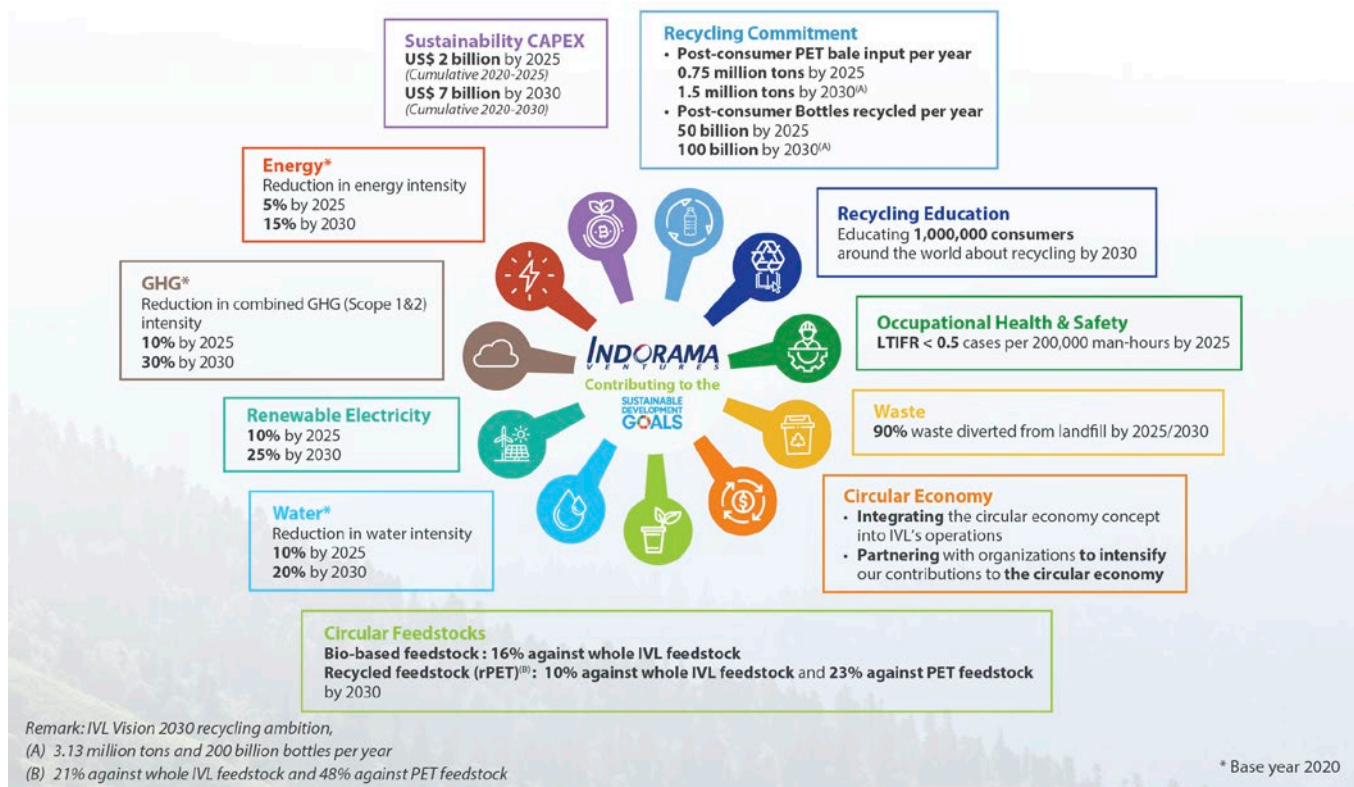
strategies this year. The goal of these segment-specific strategies is to ensure each business is aligned with the broader IVL targets and embeds ESG principles in business operations at a grassroots level. This will make operations more sustainable and further enable environmental sustainability, social empowerment, improved governance, and compliance management.

Governance

IVL's unwavering commitment to sustainability spans our entire organization from board level and C-suite to our plant managers and employees. Sustainability is overseen by the [Board of Directors](#), the [Sustainability and Risk Management Committee](#) (a sub-committee of the board) and [Executive Leadership](#). Sustainability is one of the six enabling functions and an integral part of our corporate strategy.

IVL's vision is **'To be a world-class sustainable chemical company, making great products for society'** and our purpose is **'Reimagining chemistry together to create a better world.'** These two principles are at the forefront of our business strategy and at the core of all the business operations at IVL.

We have set sustainability targets for the medium and long term and have drawn clear action plans to reach our sustainability ambition.



Industry Associations and Memberships

IVL engages with several external alliances, partners, and thought leaders in our industry to collectively find solutions and support important global sustainability challenges. We are a member of several industry associations, including **World Economic Forum (WEF)**, **Ellen MacArthur Foundation**, **United Nations Global Compact (UNGC)**, **American Chemistry Council (ACC)**, **Responsible Care**, and more. We have important associations and partnerships, not only at the IVL level, but also at segment levels. Find a list of our [industry associations and memberships](#).

IVL continues to be a proud signatory of the [Alliance of CEO Climate Leaders](#), a WEF initiative. The alliance “calls on governments to set bold ambitions and follow through on commitments aligned with the Paris Agreement, including driving down the green premium, investing in a just transition and harmonizing reporting and disclosure standards.” Mr. Aloke Lohia joined 100+ CEOs to build an influential network and community “with the power to accelerate the pace of climate action within our value chains and in the markets in which we operate.”

Two key initiatives we support - the World Economic Forum’s Global Plastic Action Partnership (GPAP) and the Ellen MacArthur Foundation’s Plastics Initiative - joined hands with international climate action NGO WRAP. Together they will drive global action on plastics through greater knowledge exchange and multi-stakeholder collaboration.

The three organizations, which share a common vision for a circular economy for plastics, have each been running national level initiatives since 2018, which now span more than twenty countries. By working more closely together, they will be sharing learnings and best practices on a regular basis, helping to accelerate efforts to tackle the mismanagement of plastic waste.

Advocacy at IVL

There is increasing regulatory and legislative action around plastic waste mismanagement and recycling. The biggest impact on IVL is to demonstrate, beyond doubt, that PET’s intrinsic recyclability and our recycling strategy are aligned with political action on the circular economy and plastic waste reduction.

Asia: Indorama Ventures PCL was proud to play an active part in providing supporting scientific evidence about the circularity of PET in food-contact packaging. In 2022, the Food Safety and Standards Authority of India (FSSAI) and the Thai Food and Drug Administration (FDA Thailand) approved recycled PET (rPET) for use in food-contact applications. These developments will open markets of close to 1.5 billion people - or 18% of the world’s consumers - for our recyclable and recycled packaging material.

USA: In 2022, the Biden Administration announced the largest investment in recycling infrastructure by the federal government in 30 years. The Solid Waste Infrastructure and Recycling Grant Program includes US\$275 million for improvements to recycling and post-consumer materials management. While the Recycling and Education Outreach Grant Program has US\$75 million to enhance community recycling programs. These will deliver more post-consumer PET and help improve the bale quality/yield in our US operations.

Europe: In 2022, the European Commission proposed a new Waste Regulation requiring Deposit Return Scheme collection systems for PET beverage bottles in every Member State by the end of 2028, if 90% collection is not achieved. The EU has already passed a Directive requiring 9 out of 10 PET beverage bottles to be collected by 2029. This will not only increase the circularity of PET, but also promote consumer awareness about the sustainability of PET as a material.

UN initiatives – IVL

To become a corporate sustainability leader and be part of shaping a sustainable future, we support several UN initiatives in transforming our business and changing the world. As a participant member of the [UN Global Compact](#), its ten principles have given us more responsible business practices and brought positive sustainability impacts to us and our stakeholders. We also engage and support the Global Compact Local Network Brazil and Thailand. Our Communication on Progress (CoP) is available in the [Sustainability Report 2021](#) and the [UN Global Compact website](#).

We are proud to be a signatory and supporter of the [Women’s Empowerment Principles \(WEPs\)](#) and [UN Global LGBTI Standards of Conduct](#). WEPs is a set of Principles established by UN Global Compact and UN Women, offering guidance to business on how to promote gender equality and women’s empowerment in the workplace, marketplace and community. The UN Global LGBTI Standard supports the business community in tackling discrimination against lesbian, gay, bi, trans, intersex, and queer (LGBTIQ+) people.

Moreover, our activities also have significant outcomes that contribute to the UN Sustainable Development Goals (UN SDGs). Together with the Global Compact Local Network, we educate the public about the benefits of PET plastic waste separation and recycling, and circular economy in reaching the Sustainable Development Goals. We take pride in continuing to act and communicate our SDGs achievements in our [SDGs Report](#) every year.

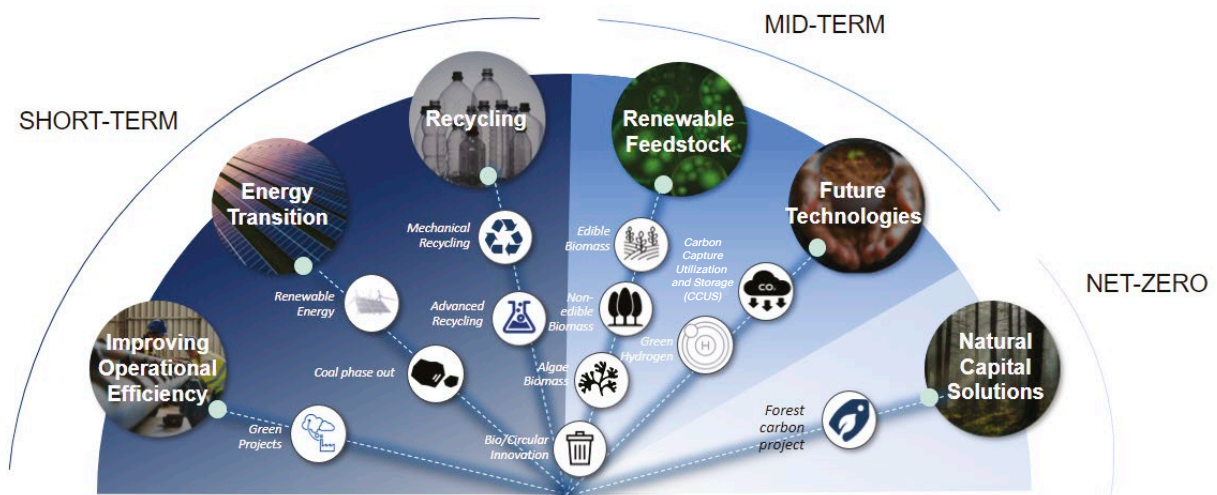
IVL visited the UN Global Compact’s headquarters in New York, and had meetings with Ms. Sue Allchurch, Chief of Outreach and Engagement, and Mr. Maxell MacKenna, Manager of Fundraising and Sponsorships, to discuss possible collaborative opportunities in their Supply Chain Pilot Program. This program contributes to decarbonization ambitions and the SDGs by leveraging sustainability practices in supply chains. We also took the opportunity to update and provide the UN Global Compact with the IVL SDGs Report, which proved IVL’s efforts and contributions toward achieving the UN SDGs.



Left to Right, Ms. Sue Allchurch, Ms. Sasinotai Rochanutama, Mr. Maxell MacKenna, and Mr. Harsha Reddy.

Accelerating Decarbonization

IVL’s six-pronged decarbonization pathway



Decarbonization Strategy towards our net-zero ambition

In the short term, IVL will ramp up efforts to improve operational efficiency for all our plants, explore and procure renewable electricity, coal phase out, and increase our recycling capacity. We are also expanding our sustainable portfolio for feedstocks and products. In the long term, we are positioned to increase our incorporation of circular feedstocks and exploring promising future technologies like Carbon Capture Utilization and Storage (CCUS). As we look towards a net-zero world, we are also keeping a close eye on natural capital solutions to protect the carbon sinks of the world and address unavoidable emissions with carbon credits from these projects.

- **Improving Operational Efficiency:** Investment in operational and energy efficiencies to reduce GHG emissions, water and other utilities consumption. We have identified more than 900 Green projects (as of 2022) at IVL that support the achievement of our GHG emissions and energy reduction targets for 2025 and 2030. Some key projects in 2022 include:
 - Advance Process Control (APC) at IOD sites in USA and Brazil
 - Optimize purge points to reduce propylene oxide (PO) loss as waste at Port Neches, USA
 - Increase reliance on power from PLN (Perusahaan Listrik Negara), Indonesia’s national grid company to reduce reliance on power from coal at PT Indorama Polychem Indonesia
- **Energy Transition:** Decarbonize IVL’s energy consumption via on-site and off-site renewable electricity and phase out coal consumption:
 - Renewable electricity: We have installed on-site solar units across 15 sites in China, India, Indonesia, Thailand, and Lithuania. We are exploring opportunities to launch a Virtual Power Purchase Agreement (VPPA) in Europe and in USA
 - Coal phase-out: We are on track to reach our 2030 target of 100% coal phase-out. One of our projects has realized impact in 2022:
 - Conversion of batch poly coal-fired high temperature material (HTM) heater to gas-fired HTM heater in Indorama Polyester Industries Nakhon Pathom, Thailand
- **Recycling:** Invest in and expand recycling facilities to enhance our recycling capacity and seek advanced technologies which will help address the mismanagement of plastic packaging waste and reduce lifecycle carbon emissions. More details under our Circular Economy section.
- **Circular Feedstock:** Replacing petrochemical-based feedstock with circular (bio-based and recycled feedstock):
 - We are making US\$8.4 billion investment in bio-based feedstock to achieve 26% circular feedstock by 2030
- **Future Technologies:** We are exploring opportunities for Carbon Capture Utilization and Storage (CCUS) and Green Hydrogen:
 - CCUS: Our sites in Alabama, USA as well as Mauá and Camaçari, Brazil, capture and sell CO₂. Further project development is under way at our Port Neches and IVPM site to capture CO₂ from feasible areas for sequestration and carbonates consumption
- **Natural Capital Solutions:** We are developing our biodiversity strategy by understanding both our impacts and dependencies on ecosystems and looking to invest in nature-based carbon sink projects, including forest preservation and restoration.

The strategies are in line with our 2025 and 2030 sustainability targets, and we aim to achieve our long-term ambition.

Our GHG emission information is disclosed in our [Sustainability Report 2022](#) and [our website](#).

Climate resiliency

COP27, the global climate summit concluded on November 18, 2022, after two weeks of tackling the persisting question: How do we keep the 1.5c target alive? We identified the following material themes for Indorama Ventures based on the final COP27 results:

Theme	Impact on IVL	Opportunities for IVL
Credible Commitments: Increased focus on credible targets and transition plans.	Operational and reputational risk if we don’t achieve our targets. This leads to higher carbon price risk, increased scrutiny to accelerate decarbonization and ensure transparent usage of eco-commodities.	Develop a solid action plan to achieve our commitments and targets through strengthening our data integrity for accurate performance tracking and explore the use of innovative climate instruments from reputable stakeholders.
Data Transparency and Scope 3: Capital market and financial institutions alignment with ESG agenda.	Increased need for value-chain engagement and harmonized internal Scope 3 data-collection. If carbon data disclosure is not available, it would lead to investment opportunity loss.	Spearheading best practice sharing opportunities within our industry and improving our internal digital environment to capture and store data.
Energy Transition: Weak pathway on both renewables and “low emission” energy (including gas) and no expansion of “phase-down” language to include fossil fuels.	Potentially continued variation in global access to green energy and pressure to reduce fossil fuel use.	Emphasize our commitment to accelerating our energy transition by reaching our green energy targets and building the resilience of our global assets.
Green Finance and Carbon Markets: Agreement to mobilize loss and damage funds with several transnational agreements already taking place.	Wider climate adaptation and mitigation plans pave the way to safeguard our activities in vulnerable areas.	Taking advantage of partnerships and monitoring climate finance opportunities to capture economic opportunities.

* Source: Bain & Company, IVL analysis

Carbon Tax Analysis: EU Emissions Trading Scheme (ETS) & Carbon Border Adjustment Mechanism (CBAM)

In December 2022, the EU institutions (the European Commission (“Commission”), Council of the European Union (“Council”) and the European Parliament (“EP”)) reached an agreement on the Carbon Border Adjustment Mechanism (CBAM), a financial instrument that aims to level the playing field for goods produced in the EU that are subject to the EU Emissions Trading Scheme. The CBAM is to be linked to the phasing out of the EU ETS free allowances. There are three key components to the agreement:

- Emissions in the ETS sectors must be cut by 62% by 2030
- Free allowances to industries will start phasing out from 2026 and disappear by 2034
- Alignment between CBAM phase in and EU ETS free allowance phase out time frame

Our commitment to align with global climate frameworks remains true for these changes. IVL’s supplier engagement program aims to weather this necessary transition and support decarbonization from a company and value chain perspective in the following dimensions:

- **Ensuring ethical standards along the value chain:** We have upgraded our Supplier Code of Conduct to be a [Responsible Sourcing Policy](#) in 2022 based on CDP best practices and external benchmarking analysis.
- **Capturing Scope 3 emissions footprint:** We engage with our raw material suppliers to seek their accurate and verified product carbon footprint information to further inform procurement decisions.
- **Sharing decarbonization methodologies:** We support partners throughout the value chain with data and learnings to encourage further decarbonization within our network.

For the third consecutive year, IVL continues to adopt the recommendations of the **Task Force on Climate-related Financial Disclosures (TCFD)**. Using the TCFD framework, we provide a progress update across each of the TCFD pillars: Governance, Strategy, Risk Management, and Metrics and Targets. In the report we provide a comprehensive view into how we understand and manage the risks and opportunities associated with climate change at IVL. To read about our commitments and approach to managing climate-related risks across our business, please go to the full [TCFD report](#).

Adding to the TCFD report, we also conduct a yearly water stress study (including drought, flood, and sea level rise) of all our operations using the WRI Aqueduct tool. We consider water as a physical risk related to climate change and every year the Water Risk Assessment Summary Report is published to highlight the water risk impacts to IVL. The risks are monitored in terms of operations and EBITDA, as well as to stakeholders, considering the volume of water withdrawn from natural sources. Mitigation measures and an action plan have been included in our [Water Risk Assessment Summary Report](#). A map of our efforts in relation to the UN SDG 6 can be found in the report as well.

Strategic Development

Supplier Management

As a chemical company, we have two main pathways to reduce our Scope 3 emissions - procure from low-carbon suppliers or increase circular

feedstocks. In our pursuit to encourage decarbonization amongst our suppliers, we launched a program in January 2022 to increase the visibility of our Scope 3 emissions impact and strengthen engagement channels that support decarbonization activities along our value chain.

IVL’s “Sustainable Supply Chain Collaboration Program” focuses on managing ESG supply chain risks, ensuring compliance with international standards and regulations, and supporting decarbonization efforts throughout the value chain. In 2022, we focused on our top raw material suppliers that contribute around 70% of our raw material spend and engaged with more than 40% of suppliers within this category.

IVL is a member of the Roundtable on Sustainable Palm Oil (RSPO). In support of the causes it protects, we further developed the [Responsible Sourcing Policy for Palm Chain](#). This policy sets out specific requirements for suppliers of this renewable raw material that is so important for our business.

Biodiversity



The topic of biodiversity has seen a recent emergence in the way companies are looking at environmental impact. This year, IVL refocused our environmental attention to include biodiversity along with climate change. These two phenomena go hand in hand and need to be tackled simultaneously. We have initiated the process to collect data for each of our sites to identify key biodiversity areas and species in close proximity to the sites. We aim to identify both impacts and dependencies as well as projects we already have in place to protect biodiversity across our 147 sites and initiate a strategic phase-wise plan over the next five years.

We have taken our first steps to understand how the Group’s business activities are not separate from biodiversity but part of a larger ecosystem, important for long-term business sustainability. We strive to continue our research and take a lead in implementing good practices.

To evolve our research Indorama Ventures was proud to support the Eurasia Group and Suntory Holdings report Addressing Nature Loss in Asia: The Next Sustainability Challenge for Businesses. The report charts the path forward for businesses in devising corporate nature strategies with lasting impact in a post-COP15 world. The report is the culmination of a year-long project, building on key learnings from a roundtable series in which Indorama Ventures executives examined the role of biodiversity in business today and a live digital event in December 2022 focused on the link between business sustainability and a healthy, living planet.

The report is a product of the Sustainability Leaders Council, an initiative created by Eurasia Group and Suntory in 2021 supported by Indorama Ventures, with a mission to position Asia as a leading force for change within the climate and sustainability sphere.

Human rights

We take human rights and overall employee safety and wellbeing seriously at IVL. Not only our operations, but all our suppliers must comply with all applicable laws and regulations, conduct business with ethical and transparent labor practices, and adhere to health and safety protocols as per IVL standards. Human Rights is an aspect covered in the [Corporate Governance Manual](#) and our [Responsible Sourcing Policy](#) as well and we require our suppliers to be accountable for managing and guaranteeing compliance of their subcontractors and suppliers.

To strengthen enforcement of and compliance with our [Human Rights Policy](#), we have a Human Rights Declaration Package to create accountability and responsibility in the workplace. Sites and business heads must issue this declaration annually. The declaration was signed by 100% of Business Heads and 100% of Site Heads in 2022. There were no significant issues or major violations recorded from the declarations. For further details, please visit the [Sustainability Report 2022](#).

Materiality assessment

Our commitment to operating transparently and with open communications enhances trust and positive relationships with all stakeholders. One of the formal management systems to engage with and learn from our stakeholders is the materiality assessment. The corporate materiality assessment reflects how we identify, prioritize and act on topics which we believe are of important interest to our stakeholders, both externally and internally – notably in reference to our ESG factors.

We conduct a formal materiality assessment every other year, through an analysis of stakeholder surveys where we identify and prioritize the issues that matter most to our business and stakeholders. The process integrates input from external stakeholders, trend analyses and internal engagement across our business group. The following are key material topics from our assessment in 2022:

Environmental	Social	Governance
<ul style="list-style-type: none"> Decarbonization Post-consumer PET Bottles Recycling and Plastic Waste 	<ul style="list-style-type: none"> Occupational Health and Safety Human Rights 	<ul style="list-style-type: none"> Business Ethics, Integrity and Transparency Compliance Management (Regulatory and Environment) Corporate Governance Risk and Crisis Management Cyber Security Supply Chain Management

Further details on the materiality assessment process, key material issues and performance are provided in our [Sustainability Report 2022](#).

Customer satisfaction

In 2022, our Customer Satisfaction Index (CSI) reached 84.82% and our Net Promoter Score (NPS) was 48. Results of the annual NPS are closely analyzed, including in relation to our competitors, and trends over time are monitored. We consolidate and improve on any issues raised by adapting our CRM approach and monitoring our business performance.

It is our ongoing commitment to respond to customers' expectations and build relationships, which will help to enhance customers' trust in our products and services. Every two years, we conduct a customer satisfaction survey as part of our group sustainability strategy, designed to assess customer needs, expectations, and satisfaction with our products. We systematically seek feedback across all business interactions and at all levels from our customers. Responses are analyzed and reported through our Feedstock, PET, Fibers, Packaging, Wool, Recycling, and IOD segments, and recommendations are incorporated into an ongoing improvement cycle.

Customer Satisfaction Index (CSI)			
IVL 84.82%	PET 85.98%	Fibers 84.15%	IOD 84.11%
Recycling 83.96%	Packaging 82.79%	Feedstock 84.96%	Wool 83.32%

The results included customers from newly acquired entities

Circular Economy

In 2022, IVL continued to address plastic waste and PET recycling by collaborating and campaigning with various stakeholders in the field and educating the public on plastic recycling. IVL took part in various collaborations and partnerships to advocate for circular economy, including Bangkok Metropolitan Administration, Wacoal, Coca-Cola, GEPP, and the Recycling Partnership.

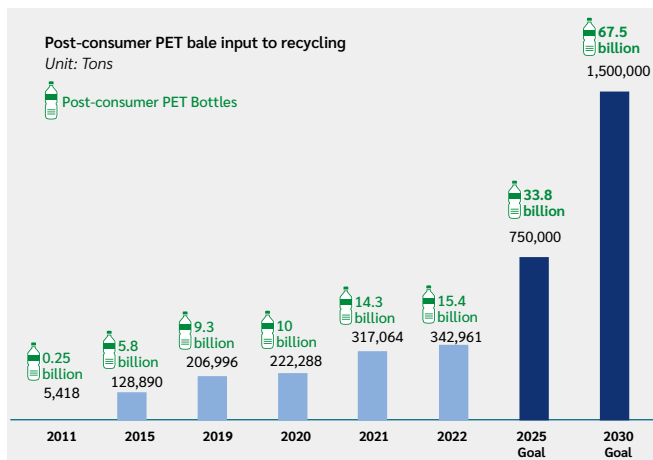
Indorama Ventures joined the [PET Recycling Coalition](#), an initiative by The Recycling Partnership, to improve PET circularity. Its work will focus on addressing four key opportunities to increase recycling of this valuable material by increasing the capture of PET bottles, broadening the acceptance of PET trays, cups, and clamshells in community recycling collection programs, unlocking new supplies of recycled PET (rPET) for packaging manufacturers, and strengthening recycling systems for pigmented and opaque PET.

New investments and collaborations included the inauguration of the PETValue facility in the Philippines and co-investment with Carbios to build a first-of-a-kind manufacturing plant in France for fully bio-recycled PET.

- PETValue is the Philippines' largest and first food-grade, bottle-to-bottle recycling facility built by IVL, in partnership with Coca-Cola Beverages Philippines. As a result of the joint venture, IVL will recycle about 2 billion additional used PET plastic bottles in the Philippines every year and create approximately 200 new local jobs. For more information, refer to the following [press release](#).
- The collaboration with Carbios is to be operational in 2025 in Longlaville, France, with a processing capacity of 50,000 tons of PET waste per year and creating 150 direct and indirect new jobs. IVL will consider expanding Carbios' unique biological recycling process at other PET sites for future developments. For more information, refer to the following [press release](#).



IVL is well positioned to achieve its 2025 and 2030 recycling goals. Below is a representation of the 2022 bottle recycling achievement in relation to the previous years and upcoming goals. For live update see our recycling tracker available on [website](#).



Sustainable Finance

Our ESG performance ultimately affects our interest rates. Our company performance is reported to ESG data providers, who provide data to financial institutions, and these financial institutions shape IVL's reputation and give interest rates based on our data. Therefore, it is very important we improve our ESG performance and accurate data reporting.

Receiving green finance is another level that supports our long-term transition to the net zero economy. In 2022, we signed several loans including:

- Sustainability Linked Long Term Loan Facility:
 - US\$100 million equivalent from Bank of China
 - [THB 6 billion from Siam Commercial Bank](#)
- Sustainability Linked Syndicated Long Term Loan Facility: US\$500 million from SMBC BNP
- [Sustainability Linked Syndicated Revolving Credit Facility: E275 million from ING](#)

Most of these loans are tied to a specific sustainability target. For example, our Bank of China and Siam Commercial Bank loans are linked to our DJSI score, which quantifies our sustainability performance. Getting access to such funds is important to us as we accelerate our decarbonization and organize financing of our green initiatives.

Communication

Advancement in sustainability reporting

For the first time at IVL, we have published a [Sustainability Digital Report](#) and a [Chart Generator](#) in 2022. These are new tools for greater stakeholder engagement. It is easy to navigate and the content can be selected and customized. The Sustainability Digital Report is compatible with various

multimedia formats and has many interactive links to extensive data and charts. The Chart Generator showcases important data in various charts and graphs, customizable to specific indicators, able to compare data for the last 4 years, and allows the extraction of ESG data into an MS Excel compatible .csv file.

We have regular internal sustainability communication with our employees via a monthly newsletter about Sustainability across the globe and webinars for sustainability education. We also published an advertorial in The Economist on how IVL is enabling a circular plastics future with our recycling efforts, read more [here](#).

Awards and recognitions

This year we participated in a number of external sustainability audits and awards to assess our sustainability leadership position and identify opportunities for improvement in our business operations, including the worldwide recognized agencies such as Dow Jones Sustainability Indices (DJSI), CDP, FTSE4Good, MSCI, Sustainalytics, EcoVadis, and ChemScore. We take privilege in the awards we won in 2022 for sustainability.



Achieved 99th percentile



Achieved 96th percentile in 2022



#1 in a constituent of FTSE4Good Index Series



B rating



#1 of 54 Chem companies



BBB rating



Highly Commended SET Sustainability Awards



Winner Best Sustainable Product



Highly Commended Circular Transition



Achieved ESG Risk Rating at 5th percentile among 227 commodity chemical companies. (1st = lowest risk)



Winner Top Sustainability Advocates in Asia



2022 Low Carbon and Sustainable Business Awards

Our achievements and recognition show our focused efforts on sustainability. Participating in these rating agencies directs us towards new and broader topics we should be focusing on, gives us a global perspective, and helps us to continuously improve. Learn more about IVL's [sustainability awards and recognitions](#).

Sustainability road ahead

Sustainability has become part of our vision and we are embedding this value into our core business strategies. Continuing to improve our standing as a world-class sustainable company ensures that our products are efficient and add value to the entire chemical ecosystem. We are ramping up our efforts to protect the environment and support social and economic development. And we commit to innovating with a sustainable purpose and engaging with our peers towards a circular and green future.



Corporate Social Responsibility (CSR)

IVL's Approach to CSR

IVL's vision is to become a "world-class sustainable chemical company" and our new purpose statement tasks us to "create a better world". Our Corporate Social Responsibility (CSR) programs contribute to the sustainable growth of communities and the environment. To fulfill our social responsibilities, we developed guidelines to govern our CSR initiatives globally.

In 2022, our CSR guidelines were overhauled to reflect changes in social conditions in the "new normal" and the expansion of our businesses and activities. The revised guidelines have been communicated to senior executives across all business units to ensure an aligned approach.

Corporate Social Responsibility Management

CSR is conducted under the governance of the CSR Steering Committee, chaired by the Deputy Group CEO, Mrs. Suchitra Lohia.

CSR projects and activities are undertaken by local CSR representatives in accordance with the guidelines. The detailed work is reported to Corporate CSR, who review the data and monitor progress. The Corporate CSR team meets with the CSR Steering Committee quarterly to discuss

various issues, including the progress of CSR activities, and reporting on CSR performance and expenditure.

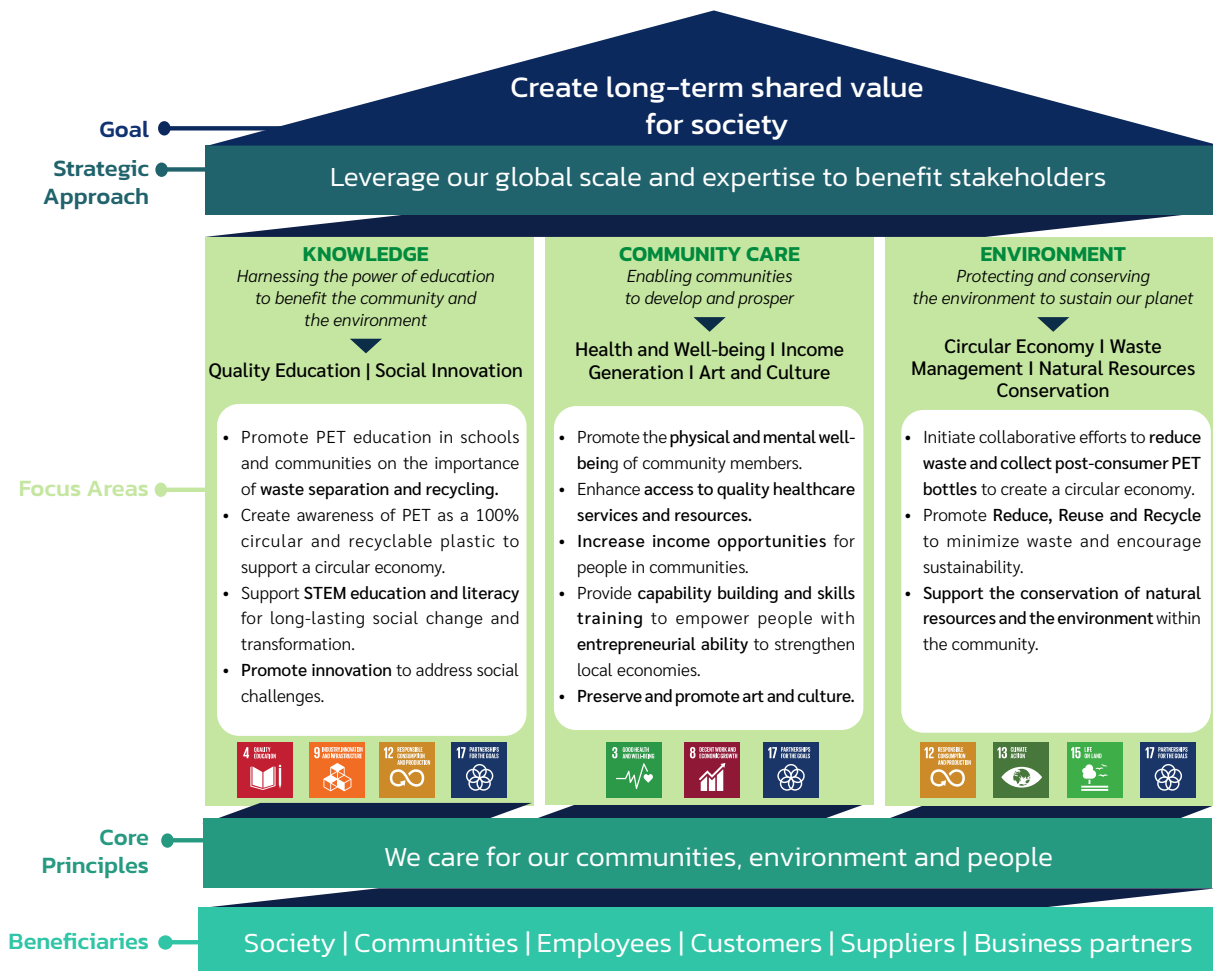
IVL's CSR function is defined broadly as a commitment to respond to social, local community and environmental issues through discretionary business practices and contributions of corporate resources.

CSR Strategy and Focus Areas

Our CSR strategy is aimed at ensuring our success is shared with our communities and the environment. Corporate Shared Value goes beyond CSR, or philanthropy, donations or social contributions. It creates meaningful impact, while responding to social needs and improved environmental outcomes. We use our global scale and expertise to create shared value, focusing on three key areas:

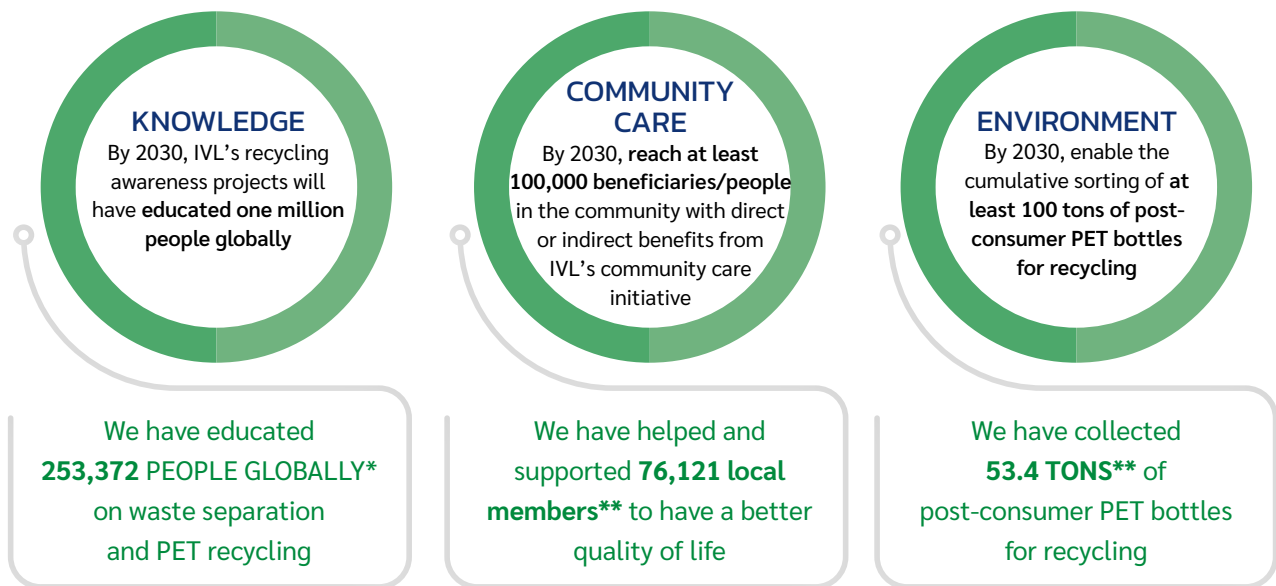
1. **Knowledge:** Harnessing the power of education to benefit the community and the environment.
2. **Community Care:** Enabling communities to develop and prosper.
3. **Environment:** Protecting and conserving the environment to sustain our planet

This CSR framework ensures we are responding to the needs of communities, while also driving business and economic growth.



CSR Performance

We encourage every IVL site to implement CSR initiatives in alignment with our focus areas: Knowledge, Community Care and Environment. In 2022, we achieved the following performance against our CSR global targets.



*Since 2018 **Since 2020

CSR Global Highlights

1. Recycling Education

In living our purpose of Reimagining Chemistry Together to Create a Better World, IVL is committed to making a positive and long-lasting impact through education. Since 2018, our recycling education program has been teaching hundreds of thousands of school children to dispose of their waste correctly to ensure it will be taken for recycling. Now, our goal is to educate one million people worldwide by 2030 on the 3Rs: Reduce, Reuse and Recycle.

1.1 BMA school's network engagement

The Bangkok Metropolitan Administration (BMA), led by the Department of Education, joined Indorama Ventures in organizing training on sustainable plastic waste management for 437 of BMA's school directors. The goal is to raise awareness and knowledge among teachers, educators, and students about distinct types of plastic and proper waste separation from the sources. It also promotes bringing post-consumer materials into the recycling process, creating a circular economy and long-term solutions to environmental sustainability. IVL provided educational materials to 400 BMA schools to educate students and personnel on waste management and PET recycling.



1.2 NEW recycling education materials launched

IVL partnered with Yunus Thailand, a leading non-profit organization promoting sustainable development with a global network, to develop new education materials "Waste Hero Education: Reduce to Zero", written and evaluated by teachers.

It consists of 19 lesson plans and materials designed for global audiences ranging from kindergarten to university students. Materials were developed and evaluated by a group of educators and experts from 17 countries across four continents. The content is organized around three core pillars: Recycling Fundamentals, Creating Zero Waste, and Building the Circular Economy. Materials are available for free online and will be distributed through Yunus' educational networks in 37 countries, 98 universities, and three Zero clubs to reach students, teachers, and educators worldwide. Discover more at www.indoramaventures.com/waste-hero

2. Local Collective Impact with Community Members

IVL strives to give back and make a positive difference in local communities. Each community has specific issues and interests forming the basis for relationship building between the company and the community, creating social legitimacy and, in turn, a license to operate. This goes beyond engaging with communities and is more about creating "Community Networks."

- 2.1 **UAB Orion Global Pet** sponsored a traditional international sports and health event named "Amber Nautical Mile 2022" in cooperation with a regional athletics federation. This strengthened the relationship with the local community, while increasing corporate value and enhancing the company's reputation. 400 local members and runners from neighboring countries participated in completing the distance of a nautical mile – 1,852 meters.
- 2.2 **Schoeller Křešice s.r.o.**, one of IVL's subsidiary companies in the Czech Republic, sponsored a Textile conference at the Technical University of Liberec (TUL) with more than 27 education institutions and research center networks.

The objective is to build awareness of sustainable textiles and create understanding of how our textile production process can support the environment.

This program inspired over 40 university students to work in sustainable manufacturing after graduation.

3. PET Collect Back Campaign

Since 2020, we have invited several private/public organizations, educational institutions and start-ups to collect post-consumer PET bottles while promoting waste separation that benefits the environment and society. By building a collaboration network, we not only improve recycling, but also bring benefits to the environment, people, and communities.

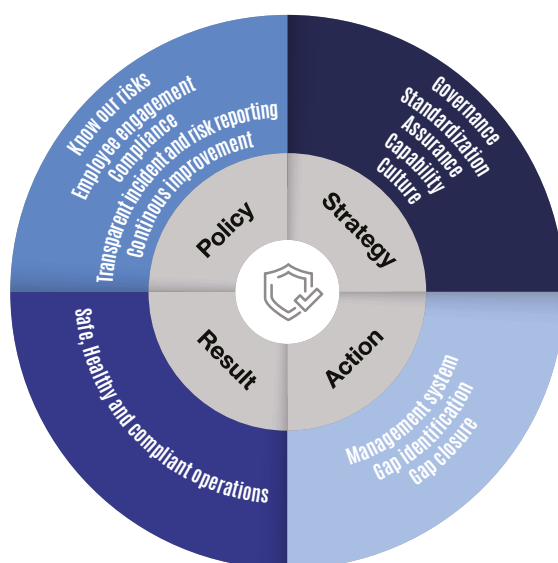
- 3.1 **Recycle Me 2.0 Campaign:** Indorama Ventures partners to make a "World Without Waste"
The Coca-Cola Company launched its annual "World Without Waste" campaign across Thailand. IVL, along with several local retailers, such as Trash Lucky, Lotus's and Shell Thailand, partnered to drive sustainable waste management and incentivize consumers to adopt circular economy practices through recycling. We added more than 20 drop point areas in Bangkok for PET collection and expect to collect more than 270,000 post-consumer PET plastic bottles. We will recycle all PET bottles collected from the campaign partners.

3.2 GEPP Sa-Ard Rewards Collaboration

This program aims to develop a mobile application for promoting waste sorting and rewards to consumers while educating users on recycling waste. Moreover, it helps increase the PET recycling rate in Thailand. We expect to receive 135,000 post-consumer PET bottles within six months and engage with 11 residential areas in Bangkok. This will help build Thailand's Circular Economy and grow positive behavioral change.

Environment, Health and Safety

Responsible and sustainable operations are not only a social and ethical obligation, but also a key enabler for the long-term success of our business. During the past year, we have successfully implemented new procedures and initiatives to prevent occupational injuries and illnesses in the workplace, and track compliance with environmental and health and safety regulations. These efforts not only support our ambitions to become a leader in EHS, but have also increased operational efficiency, reduced costs, and enhanced our reputation as a responsible and trustworthy partner.



Major 2022 achievements

Improving EHS due Diligence: A new process was developed to describe how EHS risks are identified and to help newly acquired sites integrate into IVL more effectively. The improved EHS due diligence process defines roles, responsibilities, and specific action assigned to Corporate EHS and business leaders during pre- and post-acquisition activities. This allows for a more consistent approach and a more efficient process.

Digital advancements via EHS Software Solutions: IVL is implementing various software solutions to streamline data collection for EHS metrics and allow better oversight of risks company-wide. These systems are used for incident management, action tracking, compliance tracking and regulatory registers, auditing, and health data management.

Preventing Life Impacting & Fatal Events (LIFE): IVL built a framework for conducting life-critical safety activities – The IVL Golden Safety Rules. These rules were created to provide support for key life-critical activities. They apply to all personnel (employees or contractors) working at IVL operated sites who carry out, or are responsible for, activities with particular potential to cause serious injuries or incidents, especially fatalities.



THE GOLDEN SAFETY RULES

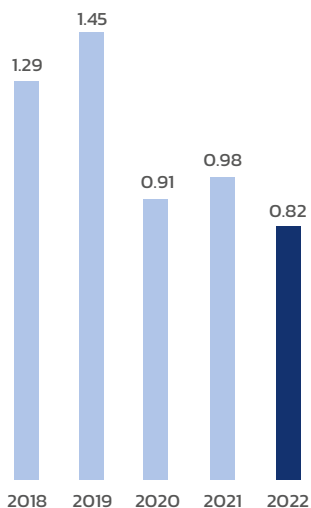
This framework inspires people to do the right things the right way, as health and safety are non-negotiable values for us. Our policies are focused on ensuring the safety, health, and well-being of our employees, in addition to promoting a culture of accountability and teamwork.

EHS Operating Results

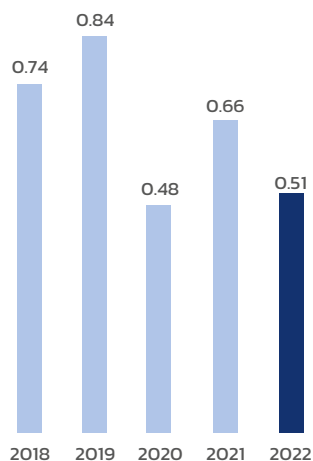
Occupational Safety & Health Performance

The following graphs illustrate safety performance in incident frequency as measured by Total Recordable Incident Rate (TRIR), Lost Time Incident Frequency Rate (LTIFR), and Process Safety Incident Rate.

Combined Total Recordable Incident Rate – TRIR (200,000 Hour Basis)

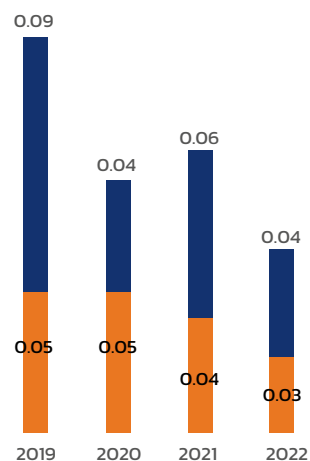


Combined Lost Time Incident Frequency Rate–LTIFR (200,000 Hour Basis)



■ Performance

Process Safety Event Rate per 200k hours



■ Tier 1 PS Event ■ Tier 2 PS Event

From an injury and illness frequency perspective, IVL improved injury frequency rates and process safety incident frequency rates significantly. In addition to the LTIFR data, we are deeply saddened to report a contractor fatality in 2022. This was associated with a contractor attempting to repair a bulldozer. A full investigation was conducted and lessons learned were shared globally with all operations.

Despite excellent improvement in injury frequencies, IVL still has work to do in preventing injuries that result in LIFE impacts and Lost Time. The company has developed several key initiatives to reduce both incident frequencies as well as severity. In 2022, IVL continued the Injury and Illness Prevention Program (I2P2) which requires plants to systematically analyze incident trends and implement controls to reduce the most frequent types of incidents. Results from 2022 indicate that, of the sites participating in the I2P2 program, 79% improved their TRIR and 66% improved their LTIFR.



In addition, the aforementioned Golden Safety Rules were established and launched to prevent serious incidents such as those identified above as LIFE incidents. Both initiatives are aimed at improving frequency and severity rates over time.

IVL measures process safety performance by using the American Petroleum Institute (API) definition for process safety events and converting both Tier 1 and Tier 2 event counts into a rate per 200,000 work hours.

Both Tier 1 and Tier 2 Process Safety event rates were lower in 2022 compared to 2021. Similar to IVL’s efforts in Occupational Safety, standardization efforts are underway in the area of Process Safety. IVL has adopted the US OSHA standard as a guide for Process Safety Conformance and standards are being developed for each element. In countries that have process safety statues, the more rigorous standard will apply. Some standards were deployed in April 2022 and others are being deployed as part of a multi-year process for full implementation.

General Information

Name	:	Indorama Ventures Public Company Limited
Symbol	:	IVL
Head Office	:	75/102 Ocean Tower 2, 37 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand Tel: 0-2-661-6661 Fax: 0-2-661-6664-5 www.indoramaventures.com
Type of Business	:	Holding Company
Company Registration No.	:	0107552000201
Registered Capital	:	Baht 5,670,701,908 divided into 5,670,701,908 common shares of par value at Baht 1
Paid-Up Capital	:	Baht 5,614,551,908 divided into 5,614,551,908 common shares of par value at Baht 1

References

Share Registrar	:	Thailand Securities Depository Company Limited 93 Ratchadapisek Road, Dindaeng, Dindaeng, Bangkok 10400, Thailand Tel: 0-2-009-9999 Fax: 0-2-009-9991
Debenture Registrar and Debenture Holders' Representative	:	Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: 0-2-230-1136 Fax: 0-2-626-4545-6
Debenture Registrar (For IVL Debenture No. 1/2015)	:	Siam Commercial Bank Public Company Limited 1060 SCB Chidlom Tower 2, 3 rd Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand Tel: 0-2-256-2339 Fax: 0-2-256-2406
Debenture Registrar (For IVL Debenture No. 2/2015)	:	Krungthai Bank Public Company Limited 35 Sukhumvit Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand Tel: 0-2-298-0830 Fax: 0-2-298-0835
Debenture Holders' Representative (For IVL Debenture No. 2/2012 and No. 1/2018)	:	Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yannawa, Bangkok 10120, Thailand Tel: 0-2-296-3582 Fax: 0-2-296-2202
Auditor	:	KPMG Phoomchai Audit Limited 195 Empire Tower, 50 th - 51 st Floor, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120, Thailand Tel: 0-2-677-2000 Fax: 0-2-677-2222
Legal Advisor	:	The Capital Law Office Limited 44 Smooth Life Tower, 18 th Floor, North Sathorn Road, Silom, Bangrak, Bangkok, 10500, Thailand Tel: 0-2-633-9088 Fax: 0-2-633-9089

Major Shareholders

Indorama Ventures Public Company Limited

Major Shareholders (as of November 30th, 2022)¹

Top Ten Major Shareholders

No.	Shareholders	No. of Shares	%
1.	Indorama Resources Limited ²	3,634,991,318	64.742
2.	Thai NVDR Ltd.	518,454,498	9.234
3.	Bangkok Bank Public Company Limited	270,905,264	4.825
4.	South East Asia UK (Type C) Nominees Limited	93,166,981	1.659
5.	Social Security Office	90,918,420	1.619
6.	State Street Europe Limited	59,739,947	1.064
7.	Tisco Master Pooled Fund	29,207,900	0.520
8.	SE Asia (Type B) Nominees LLC	26,525,854	0.472
9.	VAYU 1 by MFC	24,613,200	0.438
10.	VAYU 1 by KTB	24,613,200	0.438
11.	Other Shareholders	841,415,326	14.986
Total Shares		5,614,551,908	100.00

Remarks: 1 The Company Secretary has updated the list of major shareholders of the Company to the Board of Directors and senior managements every quarter.

2 Group of Lohia Family	No. of Shares	%
- Indorama Resources Limited*	3,634,991,318	64.74
- Mr. Alope Lohia**	1,000,010	0.02
- Mr. Anuj Lohia	10	0.00

* Owned by Canopus International Limited*** 99.98%

** Mr. Alope Lohia's shareholding in the Company, through his family holding in Canopus International Limited, is more than 25 times of his annual base salary.

*** Mr. Alope Lohia and his immediate family jointly hold voting rights of 76% and an equity interest of 50% in Canopus International Limited, while the remaining voting rights of 24% and 50% of the equity interest of Canopus International Limited are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.

Other Material Information

Securities of the Company

As of 31st December 2022, Indorama Ventures Public Company Limited (the “**Company**” or “**IVL**”) had the Registered Capital of Baht 5,670,701,908 divided into 5,670,701,908 ordinary shares with the par value of Baht 1 per share and Paid-up Capital of Baht 5,614,551,908 divided into 5,614,551,908 ordinary shares with the par value of Baht 1 per share.

Major shareholders whose behaviours materially influence the management policy making or the Company's operation

Group of Lohia Family¹ holding IVL's shares at 64.76 percent

Remarks: ¹ Group of Lohia Family

	No. of Shares	%
• Indorama Resources Limited*	3,634,991,318	64.74
• Mr. Alope Lohia	1,000,010	0.02
• Mr. Anuj Lohia	10	0.00

* Owned by Canopus International Limited** 99.98%

** Mr. Alope Lohia and his immediate family jointly hold voting rights of 76% and an equity interest of 50% in Canopus International Limited, while the remaining voting rights of 24% and 50% of the equity interest of Canopus International Limited are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.

The Ultimate Shareholders of the Company

Indorama Resources Limited holds 64.74 percent in the Company's shares.

Shareholders' Agreement

- None -

Debentures

1. Debentures of Indorama Ventures Public Company Limited

The extraordinary general meeting of shareholders held on 22 September 2011, the annual general meeting of shareholders held on 29 April 2013, the annual general meeting of shareholders held on 24 April 2015 and the annual general meeting of shareholders held on 24 April 2019, approved the issuance of debentures, in total not exceeding Baht 150,000 million.

During year 2022, the Company had issued unsubordinated and unsecured debentures with debenture holders' representative on 1 April 2022 in the amount of Baht 12,000 million. On 5 April 2022, 4 May 2022, 13 October 2022 and 14 December 2022, unsubordinated and unsecured debentures were matured in the amount of Baht 3,900 million, Baht 500 million, Baht 500 million and Baht 1,645 million, respectively.

As of 31 December 2022, the Company had outstanding unsubordinated and unsecured debentures totalling Baht 63,425 million and the subordinated perpetual debentures totalling Baht 15,000 million as follows:

Debentures issued on 14 December 2012:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL24DA	Debentures of INDORAMA VENTURES No. 2/2012 Tranche 4	1,475	5.28%	12 years	14 December 2024
Total		1,475			

Debentures issued on 27 June 2013:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL236A	Debentures of INDORAMA VENTURES No. 1/2013 Tranche 3	1,100	5.10%	10 years	27 June 2023
Total		1,100			

Debentures issued on 14 March 2014:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL243A	Debentures of INDORAMA VENTURES No. 1/2014 Tranche 3	1,400	5.30%	10 years	14 March 2024
Total		1,400			

Debentures issued on 13 October 2015:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL250A	Debentures of INDORAMA VENTURES No. 1/2015 Tranche 2	1,100	4.20%	10 years	13 October 2025
Total		1,100			

Debentures issued on 9 December 2015:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL25DA	Debentures of INDORAMA VENTURES No. 2/2015	1,150	3.92%	10 years	9 December 2025
Total		1,150			

Debentures issued on 20 October 2016:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL260A	Debentures of INDORAMA VENTURES No. 1/2016 Tranche 2	200	3.68%	10 years	20 October 2026
IVL280A	Debentures of INDORAMA VENTURES No. 1/2016 Tranche 3 *	2,200	4.10%	12 years	20 October 2028
IVL310A	Debentures of INDORAMA VENTURES No. 1/2016 Tranche 4 *	2,300	4.39%	15 years	20 October 2031
Total		4,700			

Note * The issuer has rights of early redemption

Debentures issued on 4 May 2017:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL245A	Debentures of INDORAMA VENTURES No. 1/2017 Tranche 3	1,000	3.75%	7 ½	4 May 2024
IVL275A	Debentures of INDORAMA VENTURES No. 1/2017 Tranche 4	2,000	4.11%	10 years	4 May 2027
IVL295A	Debentures of INDORAMA VENTURES No. 1/2017 Tranche 5	2,000	4.28%	12 years	4 May 2029
Total		5,000			

Debentures issued on 16 November 2017:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL24NA	Debentures of INDORAMA VENTURES No. 2/2017 Tranche 1	300	2.92%	7 years	16 November 2024
IVL27NA	Debentures of INDORAMA VENTURES No. 2/2017 Tranche 2	700	3.46%	10 years	16 November 2027
IVL32NA	Debentures of INDORAMA VENTURES No. 2/2017 Tranche 3	1,000	3.90%	15 years	16 November 2032
Total		2,000			

Debentures issued on 8 June 2018:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL236B	Debentures of INDORAMA VENTURES No. 1/2018 Tranche 2	3,000	2.78%	5 years	8 June 2023
IVL256A	Debentures of INDORAMA VENTURES No. 1/2018 Tranche 3	1,500	3.18%	7 years	8 June 2025
IVL286A	Debentures of INDORAMA VENTURES No. 1/2018 Tranche 4	1,800	3.83%	10 years	8 June 2028
IVL306A	Debentures of INDORAMA VENTURES No. 1/2018 Tranche 5	5,000	4.12%	12 years	8 June 2030
IVL336A	Debentures of INDORAMA VENTURES No. 1/2018 Tranche 6	3,200	4.27%	15 years	8 June 2033
Total		14,500			

Debentures issued on 8 November 2019:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL19PA	Subordinated Perpetual Debentures of INDORAMA VENTURES No. 1/2019	15,000	5.00%	Perpetual	Redemption Upon Liquidation
Total		15,000			

Debentures issued on 27 November 2020:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL25NA	Debentures of INDORAMA VENTURES No. 1/2020 Tranche 1	4,000	2.78%	5 years	27 November 2025
IVL27NB	Debentures of INDORAMA VENTURES No. 1/2020 Tranche 2	1,990	3.15%	7 years	27 November 2027
IVL30NA	Debentures of INDORAMA VENTURES No. 1/2020 Tranche 3	3,010	3.42%	10 years	20 November 2030
Total		9,000			

Debentures issued on 3 November 2021:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL26NA	Sustainability-Linked Bonds of INDORAMA VENTURES No. 1/2021 Tranche 1	3,000	2.48%	5 years	3 November 2026
IVL28NA	Sustainability-Linked Bonds of INDORAMA VENTURES No. 1/2021 Tranche 2	2,000	3.00%	7 years	3 November 2028
IVL325A	Sustainability-Linked Bonds of INDORAMA VENTURES No. 1/2021 Tranche 3	5,000	3.60%	10.5 years	3 May 2032
Total		10,000			

Debentures issued on 1 April 2022:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL274A	Debentures of INDORAMA VENTURES No. 1/2022 Tranche 1	4,300	2.66%	5 years	1 April 2027
IVL294A	Debentures of INDORAMA VENTURES No. 1/2022 Tranche 2	2,700	3.24%	7 years	1 April 2029
IVL324A	Debentures of INDORAMA VENTURES No. 1/2022 Tranche 3	5,000	3.65%	10 years	1 April 2032
Total		12,000			

2. Debentures of Indorama Ventures Investments & Holdings Pte. Ltd.

The resolution of Indorama Ventures Investments & Holdings Pte. Ltd., an indirect subsidiary of the Company, held on 25 August 2015 approved the issuance of debentures up to an amount not exceeding USD 140 million equivalents in Singapore dollars.

On 7 October 2015, Indorama Ventures Investments & Holdings Pte. Ltd. issued the Senior Unsecured Debenture of SGD 195 million (equivalent to USD 138 million) to institutional investors in Singapore. The debenture is guaranteed by Credit Guarantee & Investment Facility, a trust fund of the Asian Development Bank and listed on the SGX-ST.

Debenture issued on 7 October 2015:

No.	Amount (M SGD)	Interest Rate per year	Term of Issue	Maturity Date
1/2015	195	3.73%	10 Years	7 October 2025
Total	195			

3. Debentures of Avgol Industries 1953 Ltd. ("Avgol")

As at 31 December 2022, Avgol, an indirect subsidiary of IVL, had outstanding unsecured debentures totalling USD 79.9 million, as follows:

No.	Amount (M USD)	Interest Rate per year	Term of Issue	Maturity Date
1/2014-C	47.6	4.75%	10 Years	31 December 2024
1/2017-D	32.3	3.90%	8 Years	31 December 2025
Total	79.9			

On 14 August 2014, Avgol issued the Unsecured Debenture series C of ILS 502 million to the public.

On 28 March 2017, Avgol issued the Unsecured Debenture series D of USD 53.9 million to the public.

4. Debentures of Indorama Ventures Global Services Limited ("IVGSL")

The resolution of IVGSL held on 27 June 2019 approved the issuance of debentures up to an amount not exceeding USD 600 million (or its equivalent in any other currencies).

On 12 September 2019, IVGSL issued senior unsecured bonds to foreign institutional investors for the total amount of USD 300 million. The debenture is guaranteed by the Company.

Debenture issued on 12 September 2019:

No.	Amount (M USD)	Interest Rate per year	Term of Issue	Maturity Date
1/2019	300	4.375%	5 Years	12 September 2024
Total	300			

Legal Disputes

As of 31st December 2022, there is no material litigation against the Company or its subsidiaries which could have a negative effect on our assets exceeding 5% of shareholder's equity. In addition, there is no lawsuit, which could have a significant effect on our business.



Dividend Payment Policy

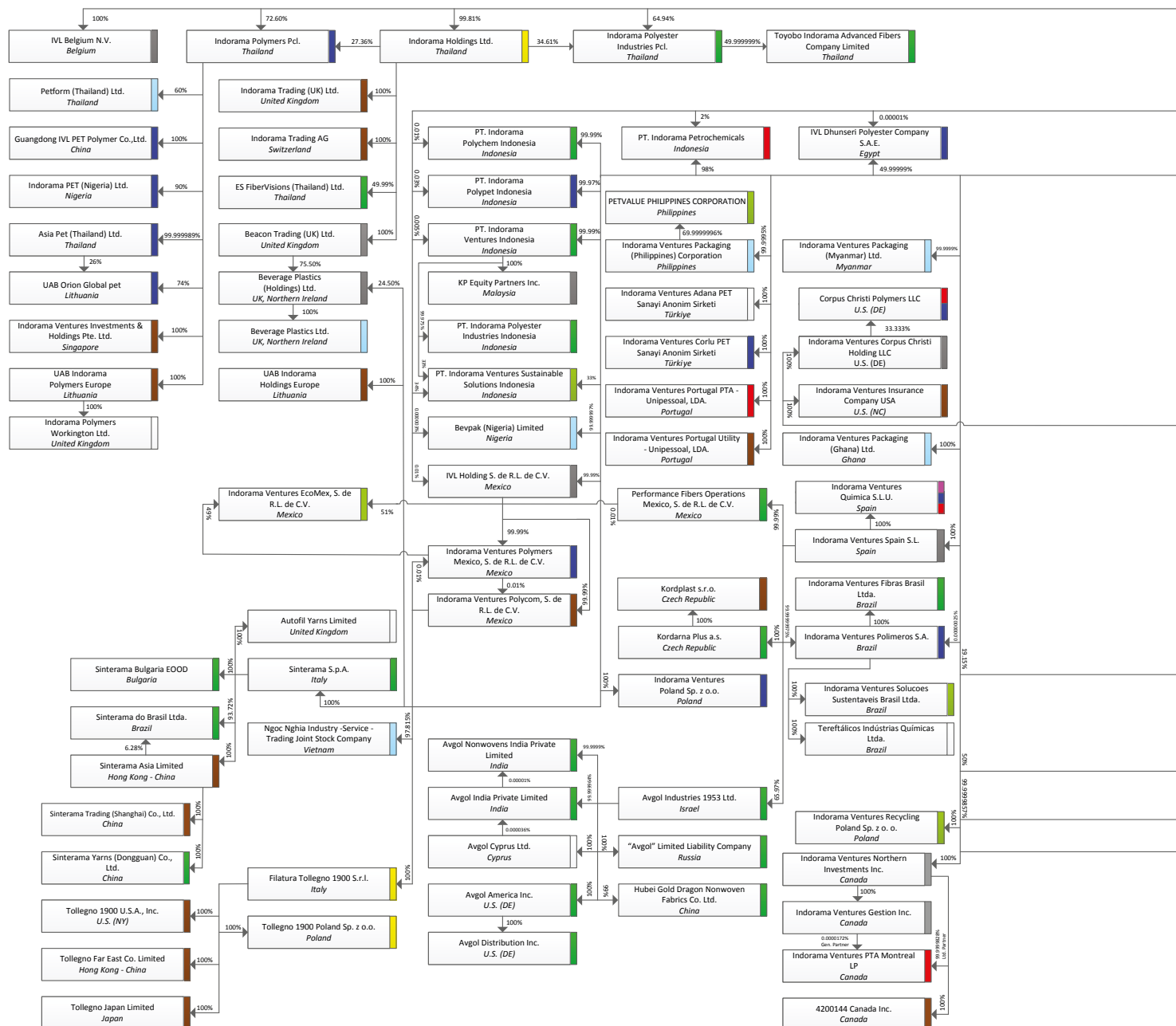
Indorama Ventures Public Company Limited

IVL's policy is to pay a total dividend of not less than 30% of net profit after tax and appropriation to the legal reserve. However, the Board of Directors has the authority to consider waiving or amending the dividend payment policy subject to the condition that it brings the greatest benefit to shareholders, such as using a portion of net profit as reserve for debt payments, capital investments for production expansion, or as support in case of changing market conditions which could affect the Company's future cash flows.

Subsidiary Companies

The payout of dividends by IVL subsidiaries to IVL is up to 80% of their net profit after tax and after appropriation to the legal reserve. However, the Board of Directors of the subsidiaries review the dividend payments and may amend the dividend payment policy by considering the reserves for debt payments, capital investments for production expansion, as support in case of changing market conditions, or to manage future cash flows as required.

IVL Group Corporate Structure

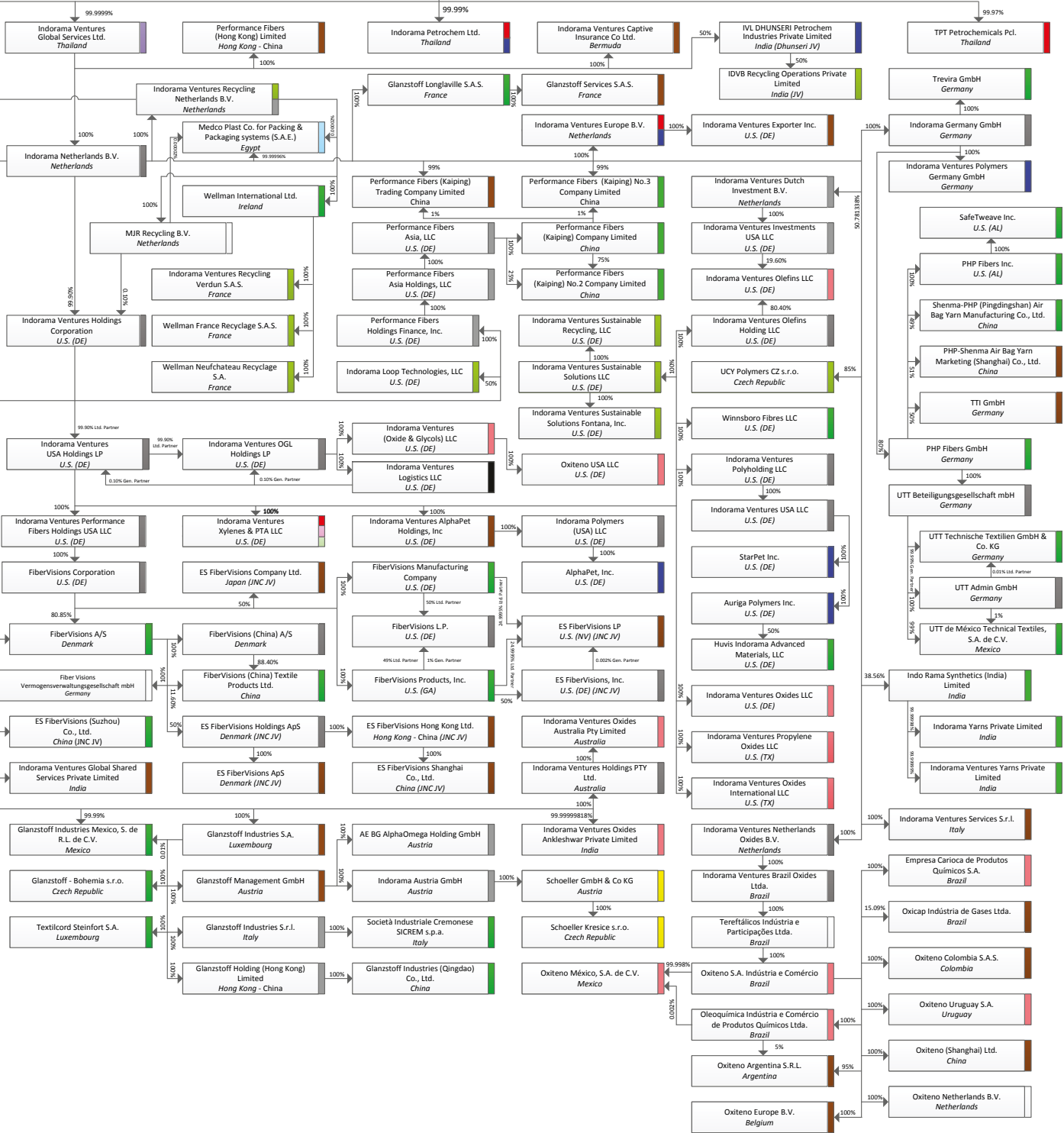


- PET Business Entity
- Packaging Business Entity
- PTA Business Entity
- Purified Isophthalic Acid Business Entity
- NDC Business Entity
- Paraxylene Business Entity
- Recycling Business Entity
- Fibers Business Entity
- Wool Business Entity
- Integrated Oxides And Derivatives Business Entity
- Holding Entity
- International Headquarter Entity
- Trading and/or Service Entity
- Logistic Entity
- Non-Operating Entity

Canopus International Ltd.
Mauritius

Inдорора Resources Ltd.
Thailand

Inдорора Ventures Public Company Limited
Thailand





Corporate Governance Report 2022

The Company implements and practices good corporate governance guided by the Board and management. Our corporate values emphasize ethics and integrity among employees, customers, and suppliers. We adhere to the Corporate Governance Code for Listed Companies 2017 of the Securities Exchange Commission (SEC) and recommendations of regulatory bodies in advancing our long-term sustainability. We distribute our Corporate Governance Manual (the Manual) approved by the Board of Directors to all stakeholders, including directors, management and employees, and provide ongoing education through our Corporate Governance Department to raise awareness and ensure compliance.

9.1 Corporate Governance Principles

The Corporate Governance Policy has been renamed the Corporate Governance Principles, which follows the guidelines of the Stock Exchange of Thailand (SET) and Corporate Governance criteria under the OECD Principles. The CG principles provide the foundation for sound, long-term oriented governance, and balance the interests of the Company's many stakeholders.

The Board of Directors observes the Corporate Governance Code for listed companies 2017 (the Code) issued by the SEC. In addition, the Board oversees and enforces the Company's adherence to the rules and regulations issued by the SEC and Capital Market Supervisory Board (CMSB) while it also implements the recommendations in the Corporate Governance Report of Thai Listed entities (CGR), issued by the Institute of Directors (IOD), ASEAN Corporate Governance Scorecard, Transparency International and other CG rating agencies.

Highlighted Corporate Governance Practices in 2022

IVL has adopted and complied with the principles of good corporate governance as recommended by the SET and explained in the various sections below. However, the following may be noted:

1. The Manual was reviewed and updated in February 2022. Details are further explained below in the IVL Corporate Governance Policy Awareness Campaign 2022.
2. IVL has a Chairman of the Board who is a Non-executive Director and a major shareholder, who was selected because of his experience in what is an extraordinarily complex industry. The Chairman has no role in the management of the Company, but his experience is called upon to advise the Board, as necessary. He was re-appointed for another term.
3. The Company formalized the appointment of a Lead Independent Director (LID) in February 2018. The roles and responsibilities of the LID were revised in 2019 to be aligned with good governance recommendations and practices.
4. A new independent director was appointed to the Nomination, Compensation and Corporate Governance (NCCG) Committee as a successor to a retired director.
5. Charters and other governance policies were reviewed, and amendments were made as required. This is discussed in a later section of the report.
6. The Company strengthened its personal data protection to comply with the Personal Data Protection Act 2019 (PDPA), Thailand and

the EU General Data Protection Regulations (GDPR). Further details are provided in the Personal Data Protection section.

7. The Company does not use “Cumulative Voting” for the election of Company directors.

We received the following assessment and awards for good corporate governance practices in 2022

1. Awarded by the Thai Investor Association for achieving a 100% score for the Annual General Meeting for 11 consecutive years.
2. An **“Excellent - 5 Star” CG score** by Thai Institute of Directors (IOD) in conjunction with the Stock Exchange and Security Exchange Commission of Thailand for the practice of **Corporate Governance of Thai Listed Companies**. The excellent CG score is the highest possible rating and awarded to firms with a score of 90-100 percent. We again scored 94 percent. This was the tenth consecutive year that we received the “5 star” rating.
3. IVL was one of the awardees of the **Asset Class PLCs** (Thailand) award for the 2021 ASEAN CG Scorecard (ACGS) announced in 2022. This was the second time for IVL.

IVL Corporate Governance Awareness Campaign 2022

IVL has conducted a Corporate Governance Policy Awareness Campaign (CGPAC) since 2013, ensuring that there is a clear understanding of, and adherence to, governance policies. The CGPAC Team in Bangkok communicates, monitors progress, provides guidance and support, to implement training programs that reinforce good governance practices throughout the company’s 35 countries globally.

To ensure the company can maintain high governance standards and further facilitate communication of the Manual, the CGPAC Team reviewed and updated the Manual according to our three-year schedule. The revised Manual, approved by the Board in February 2022, provided an introduction to each section, a summary of each policy, adjustments to the human rights and whistleblower policies, and a combined environment, health and safety policy.

Following the revision, the CGPAC Team supported the implementation of the updated version at all units by:

- Coordinated with local teams to translate the Manual in 22 languages.
- Developed an e-book version of the Manual with updated contents in English, Chinese, Portuguese, Spanish and Thai.
- Distributed videos informing employees about updates within the Manual. The videos were made available in five languages, English, Danish, Polish, Portuguese and Spanish.
- Distributed a set of five training videos summarizing contents within the CG Manual as a part of employee training. The videos will be available in all 23 languages.
- Launching the CG Database which is a platform where the CGPAC Team share all CG related information with the local teams at the units. This includes sharing of good CG practices and news from both internal and external sources.
- Conducting training sessions to local management teams on the

changes in the 2022 version of the Manual., The training additionally emphasized on Conflict of Interest, Anti-Corruption and Human Rights Policy to be further discussed in the report.

All site heads are responsible for Manual implementation and report their results to the CGPAC Team, which in turn shares its report to the NCCG Committee and the Board.

Site/HR heads ensure that new employees are informed of the CG manual upon joining and must acknowledge their understanding. This ensures all employees are aware of the program.

The CGPAC Implementation Report for 2022 revealed that **86%** of all employees attended corporate governance training in the past three years.

The CGPAC Team has plans to digitalize some of the communication and data collection process in the forthcoming year to further enhance implementation.

Policies related to the CG Manual are reviewed annually and submitted to the Board for approval. The CG Manual is reviewed and revised every three years.

9.1.1 Rights and Equitable Treatment of Shareholders

IVL’s utmost priority is to protect the rights of all shareholders, and encourages them to exercise their legal rights.

It is the right of all shareholders to participate in shareholders’ meetings; to appoint a proxy, to participate and vote at shareholder meetings on the various Agenda items which had been circulated in the Notice to the meeting. . IVL implemented all shareholder rights at the Annual General Meeting of Shareholders No. 1/2022, held on April 26, 2022.

Shareholders’ rights also include the eligibility to receive dividend payments and the right to give opinions and enquire into the Company’s business matters at the shareholders’ meeting.

IVL also recognizes the equal rights of shareholders to obtain accurate, adequate and timely information from the Company for their decision-making.

IVL has no agreement of any kind with any of its shareholders and has a straight-forward structure with its subsidiaries, affiliates and joint venture partners with no joint holding and crossholding of shares.

Information on IVL Group’s structure is available under the “Our Company” section of IVL website and is updated quarterly.

a) General Rights and Equality

IVL provides an opportunity for minority shareholders to propose agenda items and to nominate qualified individuals to be elected as Directors of the Company before the AGM for a period of over 90 days. Such notifications to shareholders are posted on the websites of the SET and the Company, most recently on September 8, 2022. The notification clearly stated all procedures and criteria for proposals. We have not received any shareholder proposals and this was conveyed to the Board in February 2023.

We will continue to provide opportunities for minority shareholders to participate in fundamental corporate decisions.

To ensure that shareholders receive the annual audited financial statements and quarterly reviewed financial results on time, we disclosed the 2021 annual audited financial statements and the three reviewed quarterly financial statements on the same day of their approval by the Board of Directors and/or Audit Committee. These were posted to our website, in addition to the SET's site, in both English and Thai.

We provide regular and timely disclosures on our website and through the SET on all relevant information, such as the Form 56-1 One Report; all Shareholders' Meeting resolutions; important Board resolutions; acquisition updates; opportunity day presentations; analyst reports; press releases and other relevant information at the Company or subsidiary level in an effort to keep shareholders adequately informed on a timely basis.

We strongly support the participation of shareholders to understand our operations and business activities, as well as interact with management. To facilitate this process, we organize visits by shareholders to a plant in Thailand annually. However, in 2022, we could not due to the COVID-19 pandemic. Such annual visits shall continue to be organized soon.

Normally, shareholders are notified more than 30 days before the shareholders' meeting. Each shareholder receives complete information on the criteria and procedures of the meeting. As a prevention measure following COVID-19, the Annual General Meeting of Shareholders No. 1/2022 was held on April 26, 2022, on an electronic platform. The Notice was issued on March 31, 2022.

All information sent to shareholders was posted on our website in both English and in Thai on March 21, 2022. Shareholders were able to download the relevant information including proxy forms.

The notice of the meeting was also communicated through the SET on March 21, 2022, and in local newspapers to remind shareholders to participate in the meeting.

Shareholders were informed they could submit questions and comments on the agenda in advance from the date they were notified of the meeting. The procedure for submitting such questions was clearly explained in the notice to the meeting.

Shareholders were given the opportunity to appoint any one of the four Independent Directors as their proxy. The Independent Directors' profiles were attached to the meeting notification.

On the meeting date, we arranged for shareholder registration to start more than two hours before the meeting. The electronic arrangements were made from our registered office and a recognized third-party vendor was engaged to make all arrangements. Shareholders who registered to attend the meeting received their username and password in addition to a manual on using the E-Meeting System. Shareholders then logged in and were able to view a live broadcast of the meeting, vote on each agenda item as applicable from their device and view the result of the vote.

For the voting and vote counting procedures at the meeting, shareholders had the right to vote according to the number of shares held, wherein one share is equal to one vote. For each agenda item, each shareholder was eligible to cast his/her vote, to approve, disapprove or abstain from voting. No split voting was allowed. Exceptions were made for proxy holders of foreign investors who appointed custodians in Thailand to hold their clients' securities. Each shareholder cast his or her vote for each agenda item using the menu "Vote" in the system. The system automatically counted the vote of a shareholder who did not vote on any agenda item as "approved," and the votes counted according to the number of shares they held.

To enable shareholders to make decisions, IVL provided adequate information in the notice to the meeting as to the agenda items.

Appointment of New Directors and Reappointment of Retiring Directors

Five Directors on the Board retired by rotation and agreed to be reappointed for another term. In this regard, they gave their consent to the NCCG Committee to consider their reappointment. The NCCG Committee, after considering the experience and contributions of the retiring Directors, deemed it appropriate to reappoint them for another term and recommended the same to the Board.

The sixth Director (independent) retired without re-election, having reached the mandatory retirement age specified in the Board Charter.

Regarding the vacancy arising from the retirement of Mr. William Ellwood Heinecke, who is ineligible for re-election, the NCCG Committee acknowledged his retirement and decided not to appoint a new independent director in his place. As a result, the number of the Board of Directors reduced from 16 to 15.

Profiles of five Directors retiring and offering themselves for reappointment included the following information, to assist shareholders. Their name, age, type of directorship, family relationship with other directors, educational background, director training, work experience, positions held in other listed organizations, position in a competing company/connected business that may cause a conflict of interest, number of years as an IVL director, shareholdings, legal disputes, meeting attendance and the opinion of the Board.

IVL's Board Competency and Diversity Matrix, shows the diversity of directors in terms of demographics and skills. It can be found at the bottom of the Board of Directors page on our website. The matrix is reviewed periodically.

A new Board Diversity policy was adopted in November 2022 and uploaded on the Company's website.

No Director of the Board was proposed by major shareholders.

The appointment and reappointment of retiring Directors was approved by shareholders based on "one share, one vote".

Minority shareholders were given the opportunity to nominate qualified individuals to be elected as Directors of the Company before the AGM for a period of over 90 days, but no proposals were received by the Company.

b) Directors Remuneration

Independent and Non-Executive Directors

The Board reviewed and recommended to shareholders the remuneration of Independent and Non-Executive Directors for 2022 And the annual bonus for all IVL Directors payable for 2021 performance as recommended by the NCCG Committee.

The policy followed by the NCCG to determine the compensation and benefits of Independent and Non-Executive Directors are:

- Compensation should pay directors fairly for work required in a company commensurate with the size and scope of the work.
- Compensation should, if possible, align directors' interests with the long-term interests of shareholders.
- The structure of the compensation should be simple, transparent and easy for shareholders to understand.
- Compensation for Non-executive Directors and Independent Directors is inclusive of a monthly retainer fee and annual bonus based on the Company's previous year's performance.
- Additional compensation will be paid to directors serving on sub-committees.

To implement the policy, the NCCG Committee designs a compensation package based on comparable listed companies using the following criteria:

The remuneration of the Chairman of the Board and Chairmen of the sub-committees who are either Independent or Non-Executive Directors is calculated at approximately 1.5 times the other members.

In determining the bonus payable to all Directors, the NCCG Committee assesses the individual performance annually based on their contributions, responsibilities, expertise and attendance. This assessment is undertaken by way of a Director Self-Evaluation Form.

The total bonus is determined in relation to the dividend payment of the Company and uses a point system to allocate among the directors with Board approval. The retainer fee for independent directors has been increased from 50,000 Baht to 60,000 Baht per month. No retainer fee was paid to Executive Directors on the Board of IVL.

Details of the remuneration paid in 2022 to Independent Directors and Non-Executive Directors and the bonus for 2021 performance to all Directors appears in the latter part of this report under **Director Performance**.

The Chairman of the NCCG Committee explained the above policy and the basis of calculating the remuneration of Independent and Non-Executive Directors to shareholders at the 2022 Annual General Meeting.

Executive Directors and Management

The policy and criteria for Executive Directors and Management remuneration is elaborated in the Board of Directors Performance herein under.

c) Appointing the External Auditor and Approving the Audit Fee

To facilitate shareholder voting, the notice of the meeting detailed the name of the audit firm, the auditors' names, the independence of the proposed auditors, the number of years they acted as the Company's auditor, the total audit and non-audit fees paid in 2020 and 2021 And separately, the Company audit fee proposed in 2022, together with the opinion of the Board based on the recommendation of the Audit Committee.

d) Payment of Dividend – Interim Dividends

The dividend policy of the Company states that a dividend will be paid at not less than 30% of net profit after tax and appropriation to the legal reserve.

In compliance with the dividend policy of the Company, the Board proposed a final dividend payout for 2021 performance at 1.00 baht per share.

e) Shareholders' Meeting

IVL's policy is to conduct shareholders' meetings in accordance with its Articles of Association and related laws to allow shareholders to fully exercise their rights in an informed manner.

The Annual General Meeting of shareholders must be organized within four months from the closure of the fiscal year of December. For fiscal year 2021, to reduce any risk from the COVID-19 outbreak, the Company arranged the shareholders' meeting using an electronic platform (E-AGM) arranged by Quidlab Company Limited, which is an ETDA certified service provider for electronic meetings. The E-AGM was held on April 26, 2022. The meeting started with 1,622 shareholders in person or proxy, and this represented 81.592% of the total shares sold. At the close of the meeting there were 1,629 shareholders in person or proxy representing 81.596%. The meeting started at 2.00 pm and ended at 4.15 pm.

Four Directors, including the Group Chief Executive Officer (GCEO), Chairman of the Audit Committee, Chairman of the NCCG Committee, Group CFO, the external auditors, the corporate internal auditor, and the legal counsel of the Company were present in person at the registered office to conduct the meeting.

All other Directors joined the meeting from their respective locations. During the meeting, all shareholders were encouraged to state their questions, express their opinions, suggestions, make recommendations and request additional information to clarify any issues relating to the meeting.

The Chairman and his representative, Mr. Rathian Srimongkol, briefed shareholders on the criteria governing the meeting, including the voting procedure. The legal counsel from The Capital Law Office, the Company's legal counsel, was nominated to monitor the meeting to ensure it was conducted in accordance with the laws and the article of association of the Company. Before starting with the agenda items, Mr. Rathian explained the proceedings of the meeting, including the voting method and submission of questions or opinions. Shareholders who registered to attend this meeting received their usernames and passwords in addition to a manual

for using the E-Meeting System. Shareholders who logged in were able to view the live broadcast of the meeting, vote on each agenda item as applicable from their device and view the voting result for each agenda item. If any shareholder or proxy wanted to give his or her opinion or ask questions, they were requested to type their opinion and/or questions in the E-Meeting System, which was then passed on to be addressed by the concerned director. Answers to any questions that were not addressed during the meeting were posted on IVL's website.

The vote count was conducted in a transparent manner with one share being equal to one vote. Approval of a resolution was based on a majority of votes.

During the meeting, the Company did not introduce any unexpected important information or any new agenda items that were not notified earlier.

IVL ensured that all shareholders were accommodated to attend the meeting even beyond the specified time limit.

The Chairman provided shareholders with opportunities to have their questions addressed to himself, the GCEO, GCFO, Chairman of the Audit Committee, and Chairman of the NCCG Committee during the meeting.

All of the agenda items were passed by an average of around 97% of the total eligible votes. Each resolution of the meeting, including the number of votes cast, was disclosed on the SET's website on the same day of the meeting.

The meeting minutes were recorded. They included the names of the Directors who attended the meeting, a summary of the questions asked, important explanations and clarifications, and the voting results of each agenda and sub-agenda divided into for/against/abstained. The minutes were submitted to the SET within the required period of fourteen days after the AGM date. A copy of the minutes was also posted on the Company's website.

f) Reporting of, and Trading in, IVL Securities

The Company has a policy in place on the reporting of, and trading in IVL securities. Under this policy, no director or management shall directly or indirectly trade in IVL securities during a period of 30 days prior to, and two days after, the date of filing with the SET of the Company's quarterly and annual financial statements. (Effective Feb 24, 2023) Furthermore, management or any director who trades in IVL securities must report to the SEC using the prescribed form within three working days and inform the Company Secretary's Department. Every quarter, a summary of the shareholdings of Directors and management is reported to the Board.

g) Connected Transactions

The Company has in place a detailed policy on connected transactions which is stringently followed. The policy states who are connected parties and what constitutes a connected transaction; the types of connected transactions and their threshold criteria/values for approval and disclosure purpose, and what procedure to follow when there is a new connected transaction. The policy guidelines are circulated at the beginning of the quarter to remind all concerned about the compliance requirements pertaining to connected transaction reporting. Based on quarterly connected transaction details submitted by IVL entities globally, the Internal Audit Department, assimilates the transactions summary and

capture the connected transaction details in the quarterly Connected Party Transaction (CPT) report for review and approval by the Audit Committee. Any new connected transaction is brought to the notice of the Internal Audit Department, which will review quarterly whether such connected transaction details are in line with the rules and regulations of the SEC/SET and then make its recommendations to the Audit Committee through its Secretary. The Audit Committee, after their review, either approves or disapproves the transaction on an arm's length basis and using the underlying facts of the transaction. At every quarterly meeting of the Audit Committee and Board of Directors a statement is submitted of all the continuing connected transactions of the Company and its subsidiaries for acknowledgement.

However, IVL and its subsidiaries may have connected transactions with their Directors, management or other connected persons. As a result, the Board of Directors Meeting approves, in principle, that management is empowered to approve such transactions transparently, provided that such a transaction is under the same commercial terms as those an ordinary person would agree to with any unrelated counterparty under similar circumstances, For example on the basis of commercial negotiations (general trading conditions) and without any dependent interest resulting from the status of director, manager or connected person, as the case may be.

Any Director who is directly or indirectly interested in any transaction abstains from discussions and voting. The Company has not given any financial assistance or guarantee to any external party.

A summary of connected transactions is reported separately in the 56-1 One Report.

9.1.2 Role of Stakeholders

IVL values all stakeholders, including shareholders, personnel, partners, customers, competitors, creditors, communities, environment and society. Their support is key to our competitive advantage and profitability.

The Company's policy safeguards their rights by strictly complying with applicable laws and regulations and takes into consideration their interests.

IVL's policies, in total 9, relating to its directors, employees and stakeholders are part of the Manual and separately disclosed on the website for reference and are all uniformly structured.

Under the CGPAC initiative, management are aware of and understand stakeholder policies as do employees through ongoing training, seminars, and implementation monitoring.

We also communicate the Manual and Responsible Sourcing Policy (previously Suppliers code of conduct) to key stakeholders, including contractors, suppliers, customers, and local authorities, to ensure understanding of our corporate policies. On average, 60% of units directly communicated with these stakeholders in 2022.

We publish a Sustainability report every year which is available in the Sustainability section of our website.

a) Shareholders:

We conduct our business, together with our subsidiaries, in a transparent

and efficient manner with a view to enhancing shareholder value and returns. We will only seek new businesses and projects that are accretive to shareholder value.

b) Customers:

IVL is committed to building long-term, loyal relationships with customers through high-quality products that meet their needs at competitive prices, along with accurate information and exceptional service.

We believe in, and strive to keep, communication channels open for constant customer feedback.

We hired J.D. Power to perform a customer satisfaction survey during the year. The customer satisfaction index average score for 2022 was 84.82%.

c) Personnel:

All our personnel, including those at subsidiaries, are valuable assets critical to our growth and profitability. We strive to provide a quality-oriented work environment with the utmost focus on safety together with fair and equitable compensation compatible with similar businesses.

We have comprehensive policies on compensation and benefits for employees globally. They follow the local rules and regulations of the country where operations are based.

We value employee development and endeavor to create a diverse work environment that attracts and retains high-performing employees. Our new hires participate in an orientation program and ongoing skill development opportunities.

The details of IVL's compensation and training activities are provided below in the "People" section at the end of this report.

d) Suppliers:

IVL prioritizes ethical and mutually beneficial relationships with suppliers who operate in a fair, honest, and socially responsible manner. Our suppliers are expected to meet government regulations and agreed-upon safety and quality standards to ensure consumer trust in our products.

We expect our suppliers to align with our commitment to responsible resource use, waste reduction, low carbon impact, and offering eco-friendly products while following environmental regulations.

They should ensure that they adopt and implement acceptable safety, product quality, labor, and human rights policies, social and legal principles, in line with our own policies and manage these issues within their business for any goods or services supplied to us.

We have set ethical boundaries for ourselves and expect our suppliers to also be complying, acting with integrity and lawfully when handling competitive data, proprietary information, and other intellectual property, in addition to complying with legal requirements regarding competition, antitrust, and accurate and truthful marketing.

In 2022, the Supplier Code of Conduct was revised and renamed to the "Responsible Sourcing Policy".

e) Creditors:

Our Company is committed to fulfilling all contractual obligations and financial responsibilities with transparency and integrity, including maintaining punctual payment and quality of collateral. Together with our subsidiaries, we attempt to provide our creditors with full and accurate information about our progress, as required, through an ongoing face-to-face and group sessions and quarterly financial disclosure on our website for smooth dealings and to comply with all our obligations.

We will promptly notify our creditors of any inability to meet our obligations and work towards mutually acceptable solutions.

Moreover, we want to see our creditors adhere to business principles consistent with our own and ensure that their products and services are produced and delivered to comply with all legislation relevant to their business in the areas where they operate.

f) Competitors:

IVL and our subsidiaries will act within the rules with respect to our competitors and employ best practices in dealing with them, as well as working towards market development and growth for the benefit of the industry.

g) Government:

We honor our relationships with governments and regulatory authorities in all of the jurisdictions where we operate and will comply with their instructions, statutory requirements and applicable laws concerning all aspects of our businesses.

h) Media:

We provide accurate and relevant information to the media as they play a vital role in communicating information about IVL to the public.

Whereas the Corporate Communications Department acts as a liaison with the media to provide information, only authorized spokespersons may be interviewed or speak on behalf of the Company.

i) Community, Environment and Society:

We care deeply about the safety of society, the environment, and the quality of life of people associated with our operations worldwide and strive to comply with applicable laws and regulations. We actively support environmental practices and cultural diversity through community engagement.

We treat and dispose of waste in a manner that will have the least impact on society, the environment and people.

We have taken steps to strengthen our sustainability, in addition to benefits to the communities where we operate. We want to ensure:

- A consistent supply of high-quality products and services to our customers
- We create value for our investors
- We provide a favorable work environment
- We are a good community neighbor
- We minimize the environmental footprint we leave behind

Our employees are encouraged to get involved in local environmental projects; especially those aligned with our CSR strategy. We also provide relevant training to our employees so they have a clearer understanding of environmental topics related to our business and can help reduce environmental impacts.

We cooperate on various waste management initiatives conducted by the private and public sectors and run an education program for communities to promote correct waste management methods.

We are committed to meeting and surpassing the environmental laws and regulations of each business and region, with periodic analysis and third-party inspections conducted in each plant.

j) Code of Conduct:

The Corporate Governance (CG) Manual has one unified code for both Directors and employees. The Company adheres to ethical standards, honesty, and accountability through its Code of Conduct. Training of the Code of Conduct is embedded in the CG Manual trainings.

The Manual outlines IVL's vision, mission and values as a responsible industry leader and a world-class chemical company, and its corporate governance principles that balance stakeholders' interests. The code of conduct contains policies on ethical practices, fair business practices, workplace values, and the treatment of stakeholders. Finally, the Whistleblower Policy provides information on how employees and stakeholders can file a whistleblower report and how the process is managed.

k) Anti-Corruption and Bribery:

The new Manual explains, IVL's strong position against bribery and corruption. As a global company, we must follow the highest standards of governance.

To demonstrate our firm commitment, the Board of Directors approved the Anti-Corruption Policy included in our new Manual. This policy provides a definition and explains key practices to avoid engaging in any form of corruption.

We also adhere to all local, national and international laws as appropriate.

The Collective Action Against Corruption (CAC) certification was first received by IVL in 2014 and successfully renewed for a second time in March 2021 for another three years. Our Internal Audit department conducts reviews of the anti-corruption practices at the units.

Having adopted an anti-corruption framework, including policy awareness and implementation of compliance, IVL has created a strong anti-corruption culture and became a CAC certified company in Thailand.

The Anti-Corruption Assistance Package was created in 2020 to aid all units in adhering to widely accepted anti-corruption frameworks. It includes a checklist, guidelines and template of corruption risk assessment to support IVL's Anti-Corruption Policy and helps local units strengthen their anti-corruption systems. The Assistance Package, now available on the CG Database, has been well-received and will reinforce the anti-corruption culture at IVL. Management at local units are provided detailed training to ensure comprehensive understanding.

We hold anti-corruption training sessions for employees in local languages, emphasizing our zero-tolerance approach and provide practical guidelines for handling potential corruption incidents. Our Anti-Corruption Policy and training materials are widely distributed, including on our company intranet, to ensure uniform implementation and understanding worldwide. The CGPAC team regularly monitors training progress and feedback. The Internal Audit Department checks all units and functions and reports findings to the Audit Committee to ensure continued policy compliance.

In 2022, on-site training sessions on Anti-Corruption Policy were held at all factories in Thailand and two locations in Vietnam as part of the manual training and updates. The training focused on key anti-corruption controls, caution when interacting with government officials both locally and abroad, and how employees can make protected disclosures to the Whistleblower Committee if they become aware of corruption within their unit. Employee engagement was high during these sessions.

l) Human Rights Policy:

IVL upholds human rights and adheres to the Universal Declaration of Human Rights and its covenants, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights. We strive to prevent human rights violations and comply with relevant laws in the countries we operate.

IVL will not tolerate any human rights violations. We encourage all employees and stakeholders to report any incidents via available channels, including IVL's whistleblower channel. Breaches of this policy, such as illegal child or slave labor, discrimination, bullying and harassment, will result in disciplinary action in accordance with local laws and regulations.

In 2022, the Company continued the Declaration on Human Rights initiative. All Business Heads and Site Heads were requested to sign the declaration to ensure compliance with the Human Rights Policy. The declaration, submitted annually, serves to monitor compliance across all levels of operations and identify areas for improvement. In case of non-compliance, Business Heads and Site Heads must report details and remedial action. The Internal Audit Department will assess human rights practices based on the declaration, with results reported to the NCCG Committee and Board. The Company will take the necessary measures to assist employees if their human rights are violated.

100% of Business Heads and Site Heads reported no material breach in 2022.

The CGPAC Team conducted on-site training on Human Rights Policy at all factories in Thailand in the middle of 2022, to discuss how managers can contribute to the prevention of human rights violation and how to report any non-compliance found.

m) Conflict of Interest:

The Manual emphasizes that IVL's directors and employees should not put themselves or allow their relatives to be put in a position where their interests conflict, directly or indirectly, with those of the Company.

Directors must not be a partner in an ordinary partnership or one with unlimited liability in a limited partnership, nor hold a directorship in a private or public company that operates a business of the same nature as, or competing with, IVL unless they have notified a shareholders' meeting prior to the resolution to appoint them as director.

Directors and senior management must fully disclose information about company securities holdings as required by the regulations.

In 2022, the CGPAC Team visited all units in Thailand to communicate the guidelines of managing any conflict of interest. The CGPAC Team also informed all newly acquired units oversea about the Conflict of Interest Assistance Package, which was developed in 2021 to assist units on the implementation of a Conflict of Interest Policy. The summary of the policy was also included in CG Manual Summary videos which have been shared to all units.

In 2022, there was no material case regarding conflict of interest. Any minor non-compliance to our Conflict of Interest Policy was appropriately investigated and handled.

n) IT Security Policy:

The IT security policy is designed to ensure the confidentiality, integrity, and availability of our information systems and data. The policy covers all aspects of information security, including physical security, network security, access control, and outlines the responsibilities of employees in handling sensitive information. IVL has implemented the ISO27001 standard, which is a widely recognized international standard for information security management.

In 2022, IVL IT leadership committed itself to ensuring the effective implementation of our IT security policy. The Board of Directors supports this commitment, through the SRMC, who recognizes the importance of protecting our information systems and data in today’s rapidly evolving technological landscape. As part of our implementation efforts, we will continue to apply measures such as employee training, access controls, network security measures, physical security measures, and incident response planning. We will also comply with relevant laws and regulations, such as the Personal Data Protection Act in Thailand, and regularly review and update the IT security policy as needed. Our commitment to protecting our information and ensuring the ongoing success of IVL through the implementation of this policy will remain a priority, with the support of the IT leadership and the Board of Directors.

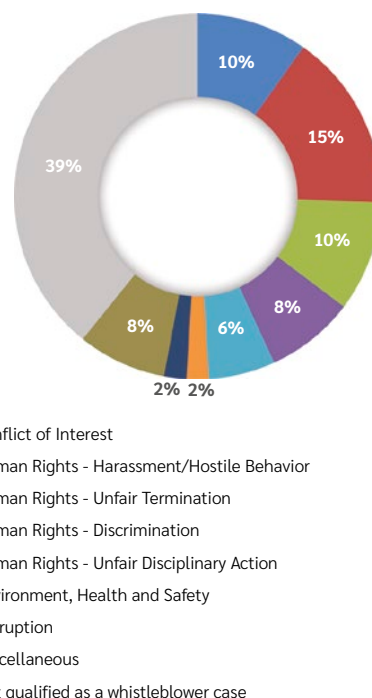
o) Whistleblower Policy:

IVL has established a “Whistleblower” policy that enables all employees and external stakeholders to anonymously report unethical practices (to a violation of law, or not) to the Whistleblower Committee. This policy has been communicated to all employees globally and is available on the company website. Reporting can be done via email, ethics@indorama.net, or a secure website, whistleblower.indoramaventures.com. Whistleblowers can choose the channel they feel is most convenient to communicate with IVL’s Whistleblower Committee. The Whistleblower Committee guarantees the protection of whistleblowers’ identities and immunity from retaliation. This information has been strongly communicated to all business units.

In 2022, the Whistleblower Committee received 51 complaints. Of these 31 were qualified as whistleblower cases – 10 were substantiated complaints, 12 were unsubstantiated complaints, two lacked sufficient information to start an investigation and seven are still under an investigation. The Whistleblower Committee, following investigations, took corrective action, such as adjustments to relevant procedures, more training on the relevant policies, issued warnings and terminated wrongdoers, with

support from local management. All cases carried over from 2021 have been resolved. The chart below depicts the categories of cases in 2022. A summary of the investigations and the actions taken were reported to the NCCG Committee and the Board of Directors.

Category of Whistleblower Reports Received in 2022



The Whistleblower Committee held monthly meetings and as required, invited senior executives from HR, Internal Audit, businesses and third parties to assist them in their investigation process. Timely replies on the status of the complaints were made to the whistleblowers. The Committee engaged in-house counsel in the investigation process to further strengthen the process and procedures over the forthcoming year.

The increase in the number of reports reflects the awareness of the whistleblower mechanism, which has been reinforced through training.

The Whistleblower Policy and the reporting website are EU General Data Protection Regulation (GDPR) compliant. In February 2022, the Whistleblower Privacy Statement was updated to comply with the Personal Data Protection Act 2022 (PDPA).

The channels to communicate with the Whistleblower Committee are highlighted in the “Corporate Governance” section of our website.

p) Personal Data Protection:

With our deep commitment and collective efforts on compliance with all applicable laws and regulations, IVL has diligently been working on implementing various measures to ensure that IVL, and relevant affiliates and subsidiaries (collectively “IVL”), comply to Thailand’s Personal Data Protection Act B.E. 2562 (2019) (“PDPA”) which has come into effect on June 1st, 2022.

Our effort to ensure compliance to PDPA, which has been started since mid 2021 until present, includes: engagement of external consultancy companies to guide us on compliance with PDPA, announcement of the IVL Privacy Policy, as well as conducting various workshops and training sessions (both in Thai and English language) across all IVL entities in

Thailand to educate our employees on the essence of PDPA and provide them with guidelines on how to conduct work and day-to-day operations of our business in compliance with PDPA. IVL has appointed Asst. Prof. Dr. Paralee Maneerat as a Data Protection Officer (ad interim) as required by PDPA.

In addition to the foregoing, IVL also aspires to comply with international standards of personal data protection laws, including the General Data Protection Regulation (“GDPR”), which is deemed as the gold standard for privacy compliance globally.

Our dedication in complying with all applicable laws and regulations regarding personal data protection remains strong, as we see data protection as our top priority both at domestic and global level.

q) Non-compliance with policies and guidelines:

Any individual who disregards or willfully breaches the Manual, including, but not limited to, illegal behavior that may not be explicitly stated in the Manual, will be subject to local laws and regulations. The Company may take action against the individual as permitted by law.

r) Policy Review

The following CG policies were revised and approved by the Board and uploaded on the Company’s website and changes made to the CG Manual.

- Diversity Policy, February 26, 2022
- Human Rights Policy, February 26, 2022
- Whistleblower Policy, February 26, 2022
- Anti-Corruption Policy, February 26, 2022

In pursuit of good governance the following policy was revised and adopted

- Reporting of Holding of and Trading in IVL Security Policy, February 24, 2023

9.1.3 Disclosures and Transparency

Our policy is to deliver all important and relevant Company information, both financial and non-financial, that may impact the interests of shareholders or investment decisions. All information is disclosed in a timely manner through easy-to-access channels and complies with the rules of the SEC/SET.

The communications channels used are the Form 56-1 One Report, the SET’s website, Management Discussion and Analysis (MD&A), press releases, shareholders’ meetings, analysts’ meetings and our own website.

The designated executives that can disclose information about IVL include the Group Chief Executive Officer (Group CEO), the Company Secretary Department, the Investor Relations Department and Corporate Communications Department. They provide information, such as through one-on-one meetings with shareholders, creditors, analysts, and quarterly meetings with analysts to discuss our recent financial performance, road shows and other highlights.

The NCCG Charter defines the policy for the nomination of Directors of the Company and the policy on remuneration of Directors and management of the Company.

The key highlights of the policy and criteria for nomination and

remuneration are stated in the section above on the **Appointment of New Directors, Reappointment of Retiring Directors and Approving the Remuneration of Directors.**

For the remuneration of management, the policy and criteria are stated below in the “Executive Director, Group CEO and Management Remuneration” section under Responsibility of the Board.

The Company has the following Charters:

- Board of Directors Charter
- Audit Committee Charter
- Nomination, Compensation and Corporate Governance (NCCG) Committee Charter
- Sustainability and Risk Management Committee Charter

The respective committees review their Charters to ensure alignment with best practices and are presented to the Board for approval. The following were revised and approved by the Board based on the recommendations of the respective committees.

- Nomination, Compensation and Corporate Governance Committee Charter, November 16, 2022
- Sustainability and Risk Management Committee Charter, November 16, 2022

The revised Charters were uploaded onto our website.

Further details of the charters can be found in “Appendix 6” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



The Board reviews IVL’s Vision, Mission and Values Statement and make changes deemed necessary. The last approval by the Board was in August 2021.

IVL’s website, in both Thai and English, is a priority for the Company, and regularly reviewed to ensure that all the information provided is current and up-to-date.

In 2022 - and all previous - years, the Company has never breached SEC/SET disclosure rules and regulations. The following information is regularly updated on IVL’s website:

Vision, Mission, Value Statements, financial statements, analyst reports, press and SET releases, Form 56-1 One Report, corporate policies, corporate structure, details of subsidiaries, IVL Board and management structure, shareholding structure and major shareholders.

The Form 56-1 One Report is updated annually and includes detailed information on business operations, financial status, risks, litigation, and capital structure, including information on ultimate shareholding. IVL maintains a calendar of all major events that investors or shareholders may wish to attend. Furthermore, the Company implements recommendations made by the SEC, SET and IOD.

IVL has an investor relations department to disclose information to

investors relating to financial reporting and others. An annual investor relations plan includes various investor relations activities by the executive in charge, including periodic plant visits by shareholders, investors and analysts, as well as other regular investor meetings.

To contact the Company's Investor Relations Department, the public may call (+66) 2 661 6661 ext. 134 or email ir@indorama.net. The IR section of the website contains much information and contact details.

The Annual Report contains a statement of the Board's responsibility

concerning the Company's financial report, which mentions, among other things, that the Company complies with generally accepted accounting principles (GAAP). And that accounting standards and practices used are appropriate and consistent to the nature of the business. It also affirms that all information presented in the financial reports is accurate, complete and adequate. The Chairman of the Board and the Group CEO sign the statement.

The individual shareholdings of Directors, Management including their spouses and minor children for the period January 1, 2022, to December 31, 2022 is as follows

Name	Number of Ordinary Shares			Percentage
	As of 1 Jan. 2022,	As of 31 Dec. 2022,	Increase/ Decrease shares during the year (share)	
1. Mr. Sri Prakash Lohia	-	-	-	-
2. Mr. Alope Lohia	1,000,010	1,000,010	-	0.018
3. Mrs. Suchitra Lohia Spouse and Minor Children	- 1,000,010	- 1,000,010	- -	- 0.018
4. Mr. Amit Lohia	-	-	-	-
5. Mr. Yashovardhan Lohia	-	-	-	-
6. Mr. Dilip Kumar Agarwal	555,959	564,773	8,814*	0.010
7. Mr. Udey Paul Singh Gill	183,336	186,481	3,145*	0.003
8. Mr. Sanjay Ahuja	132,697	135,131	2,434*	0.002
9. Mr. Rathain Srimongkol	991,400	991,400	-	0.018
10. Dr. Siri Ganjarerndee	-	-	-	-
11. Mr. Kanit Si	300,000	300,000	-	0.005
12. Mr. Russell Leighton Kekuewa	750,000	750,000	-	0.013
13. Mr. Tevin Vongvanich	100,000	100,000	-	0.002
14. Mrs. Kaisri Nuengsigkapan	-	-	-	-
15. Dr. Harald Link	2,000,000	2,000,000	-	0.036

Remark: The shares received under Employee Joint Investment Program: EJIP during 2022

Reporting

IVL has a reporting policy in place for all directors and management, who must report their shareholding every quarter to the Company Secretary, who then writes a summary for the Board. The shareholding includes themselves, their spouses and minor children and any trading in IVL securities must be reported to the Company Secretary under SEC regulations. IVL has set a blackout period for trading in IVL securities. Every quarter, the Company's Secretarial Department informs the Directors and Management of the blackout period.

All IVL directors and management are required to report their interest, if any, in the Company's designated "Declaration of Interest" form at the beginning of each year. Such forms are kept by the Company Secretary's department. There was no securities trading by IVL directors and executives during the year 2022.

9.1.4 Responsibility of the Board

a) Responsibility and Duties of the Board of Directors

The Board of Directors of IVL are responsible for the Company's vision, mission, value statement, plans, strategies, key policies and budgets with a view to effectively and efficiently managing the business for maximum shareholder value. Detailed budgets and plans are formulated for the Company and its subsidiaries. The Board closely monitors the management and implementation of business plans to achieve targets, and sets internal controls and audit procedures, including risk management. All major CAPEX requires the approval of the Board. Detailed presentations are made by the respective business segment head.

At the beginning of each year, the Board holds a “Strategy and Annual Business Plan” meeting and at the meeting, the Vision and Mission statement is reviewed along with the strategies presented by management. At the strategy meeting, key executives from all IVL units participate and discuss their performance and strategies both in the short and long-term with senior management and Board members. Such meetings give the Board and especially the Independent Directors many opportunities to discuss and interact with the respective executives on their business plans and performance and to also understand the various businesses that IVL operates. Where necessary, suggestions are made by the Board.

After the business segments’ plans are all presented, the annual plan is approved by the Board of Directors. At the Board meetings and other informal meetings with the Group CEO and senior management, the Board is updated on the Company’s business performance, strategy vis-à-vis targets and industry trends. The Board then provides their thoughts and recommendations. Management updates are based on Executive Committee meetings that each business segment holds about its operating performance.

Further details of roles and responsibilities of the Board can be found in “Appendix 7” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



Board Approvals

The average attendance for Board meetings held in 2022 was approximately 98.75%. For the annual budget approval, attendance was 100%. For each agenda item at Board meetings, detailed discussions take place and approvals are given unanimously.

The Board requires each business head to explain the details of why their business fell below target and their plans to improve performance. The Board follows up on the plan status in subsequent meetings.

The Board has guidelines on stakeholder business ethics as a part of the policies issued by the Company and monitors the effective implementation of good business practices and ethics by customer and supplier surveys and the results of employee training feedback surveys.

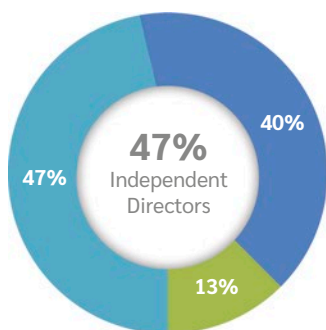
The Board, through the audit committee, internal auditor and corporate compliance department, reviews potential conflicts of interest. IVL’s internal guidelines on related party transactions and the rules and regulations of the SET/SEC provide a basis for avoiding conflicts of interest. Details of all related party transactions are updated in the Form 56-1 One Report. Those Board members who have an interest in a matter that may involve a conflict of interest must abstain from voting and other involvement, as prescribed by the Board. Company policy prohibits personnel at all levels from using inside information for their personal benefit with all business decisions based on achieving the maximum benefit for the Company and its subsidiaries.

Every year, the Audit Committee reviews the Evaluation Form – Sufficiency of Internal Control Systems for IVL and its subsidiaries and forwards it to the Board for evaluation.

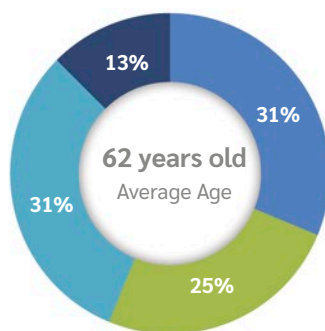
The Board, at the Strategic Business Plan meeting in January, meets and interacts with senior executives from around the world, including executives from new acquisitions.

The Company held its annual Capital Markets Day on February 10, 2022 to explain to investors from both the buy and sell side of the work completed by management over the course of the year. Senior management from global business units were introduced to investors, who had the opportunity to raise questions about the business.

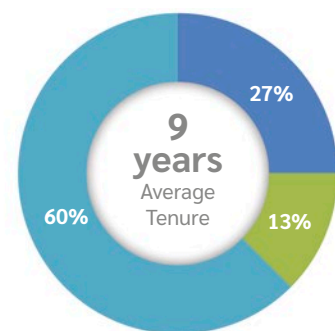
b) Board Structure



- Executive Directors
- Non-executive Directors
- Independent Directors



- <60 years old
- 60-65 years old
- 66-70 years old
- 70+ years old



- <6 years old
- 6-10 years old
- 10+ years old

In 2022, the number of directors reduced from 16 to 15 at the Annual General meeting. The Board consists of six Executive Directors, two Non-Executive Directors and seven Independent Directors. The Board, which is diverse based on nationality, gender, age and skills, does not discriminate and hires according to availability and qualifications. The current composition of the Board includes two female directors.

The Board's structure is appropriate relative to the size of the Company, geographic spread, number of Executive, Non-Executive and Independent Directors and qualifications in terms of knowledge and expertise and provides a fair balance of power and effective management monitoring. The Company intends to maintain this broad base of knowledge and experience when it searches for new Directors in the future. The Board has a policy of seeking the services of a professional search firm when necessary to replace or nominate a new director.

Role and Responsibility of the Chairman

The principal role of the Chairman of the Board is to ensure that the Board is effective in setting and implementing the Company's direction and strategy.

The Chairman plays a pivotal leadership role in ensuring that the Board works effectively. Further details of role and responsibility of the Chairman can be found in "Appendix 7" posted on the Company's website (www.indoramaventures.com) using the QR Code below:



In the Annual Report and website Directors' profile, IVL discloses its director's names, profiles, qualifications, experiences, and shareholdings in the Company to demonstrate the Board's knowledge, competence, qualifications and experience. It also mentions which Director is independent, executive, non-executive or represents a major shareholder.

The profile mentions the Board membership(s) of other companies held by the Directors.

The Board appointed a Company Secretary to assure that all the requirements and regulations of the SEC/SET are met. The Company Secretary is responsible for matters connected with Board and shareholders meetings and to advise and apprise the Board of relevant laws and regulations, to administer the Board's activities and ensure Board compliance with shareholders' resolutions. Further details can be found in "Appendix 7" posted on the Company's website (www.indoramaventures.com) using the QR Code below:



c) Other Directorships

The Board Charter specifies the outside Directorship for Executive, Non-Executive and Independent Directors.

None of the Directors of IVL have breached the above Directorship criteria in 2022.

d) Retirement of Directors

One third of the Directors retire by rotation at every Annual General Meeting as specified in the Company's Articles of Association. A retiring director is eligible for re-election. Voting for appointment/re-appointment of Directors is done individually. The Company provides a detailed profile of the retiring Director who has given his/her consent to be reappointed in the Notice to the Shareholders' Meeting.

The Board and the NCCG Committee, after due deliberation, have acknowledged that the industry is extremely complex and requires many years of study to be able to play a role on the Board. The current independent directors have shown their value over the years and will continue to play a key role in the Company. Replacing independent directors with many years of industry experience would seriously hinder the Board's ability to operate at an optimal level. However, they all take their independence seriously.

The Board of Directors has, therefore, not limited the term of an independent director to not more than nine consecutive years as recommended by the Thai IOD.

However, the NCCG Committee and the Board will take into consideration the IOD recommendation of independent directors' term of service and will decide annually if certain director(s) will retire based on additional criteria, i.e., expertise in our business, contribution by the director, health of the individual as well as the availability of a suitable replacement director. In 2018, the Board set the retirement age of Independent Directors at 72.

e) Evaluation of Board and sub-committee Performance

The Board and sub-committee members conducted a self-evaluation of the Board and sub-committees' performance in 2022. The results were summarized and discussed at the Board meeting held in February 2023. The Board and subcommittee members were evaluated as having given a particularly good performance rating in 2022.

For the self-evaluation of the Board, the Company follows the guideline prescribed by the SET, which is based on the following six criteria: a) structure and characteristics of the Board; b) role and responsibilities of the Board; c) Board meetings; d) The Board's performance of duties; e) relationship with management; f) self-development of directors and executive development.

The Company Secretary department, issues an evaluation form to each Director at the end of each year to collect feedback and comments, summarizing them and presenting to the Board for their consideration and any action required.

The average self-evaluation resulted in a score of 98%. (4.9 out of 5).

The sub-committees conduct a similar evaluation.

f) Functional Performance

The Board of Directors held five meetings in 2022. The Company proposes scheduling a minimum of five meetings a year. Typically, a meeting is convened every three months with extra meetings convened as and when necessary to review operations, financial matters, plans, or other matters. Prior to the close of each year, a schedule of meetings for the next year is circulated to members to fix the meeting dates in advance and to ensure maximum participation.

Under the Chairmanship of Mr. Rathian Srimongkol, Lead Independent Director, all the independent Directors met on February 8, 2022 to review and discuss the Company's performance and other matters. A similar meeting of the Independent Directors was held on February 7, 2023. The Lead Independent Director updated the Group CEO on the outcome of their meeting for management to act accordingly.

The Chairman, Group CEO, Lead Independent Director, and Company Secretary set the Board meeting agenda, and the Company Secretary sends invitation letters together with the agenda and relevant documents to the Directors at least seven days prior to the meeting to allow adequate time for the Directors to study the information.

At each Board Meeting, the Chairman allows each director to express his or her views. Management will answer all queries. Directors may request additional information from a designated person.

Detailed minutes are prepared for each meeting, including: the meeting date; commencement and completion times, names of those who attended or were absent; summary proposals to the Board on each issue, a brief report of the discussion, director's observations and the person authorizing the minutes. A summary of the minutes of subsidiary companies are provided to Board members as requested. The minutes are circulated within 14 days of Board meetings.

The following are the details of attendance of the Board of Directors' meeting in 2022.

Meetings in 2022									
No.	Name	Board of Directors 5 times			Audit Committee 6 times	NCCG Committee 3 times	SRMC Committee 4 times	Independent Directors 1 time	E-AGM 2022 1 time
		Online Meeting	Physical Meeting	% of attendance					
1.	Mr. Sri Prakash Lohia	4	1	100%					1/1
2.	Mr. Alope Lohia	1	4	100%			4/4		1/1
3.	Mrs. Suchitra Lohia	2	3	100%					1/1
4.	Mr. Amit Lohia	5	0	100%					1/1
5.	Mr. Yashovardhan Lohia	2	3	100%			4/4		1/1
6.	Mr. Dilip Kumar Agarwal	1	4	100%			3/4		1/1
7.	Mr. Udey Paul Singh Gill	1	4	100%			4/4		1/1
8.	Mr. Sanjay Ahuja	3	2	100%					1/1
9.	Mr. Rathian Srimongkol	1	4	100%	6/6		4/4	1/1	1/1
10.	Mr. William Ellwood Heinecke*	1	1	100%		1/1		0/1	1/1
11.	Dr. Siri Gancharerndee	0	5	100%	6/6	3/3		1/1	1/1
12.	Mr. Kanit Si	4	1	100%		3/3	4/4	1/1	1/1
13.	Mr. Russell Leighton Kekuawa	1	4	100%		3/3	4/4	1/1	1/1
14.	Mr. Tevin Vongvanich	4	1	100%	6/6		4/4	1/1	1/1
15.	Mrs. Kaisri Nuengsigkapan	3	2	100%		3/3		1/1	1/1
16.	Dr. Harald Link**	3	1	80%		2/2		0/1	1/1

Remark: * Mr. William Ellwood Heinecke retired by rotation at Annual General Meeting no.1/2022, effective from 26th April 2022

** Dr. Harald Link was appointed as a member of the Nomination, Compensation and Corporate Governance Committee, in place of Mr. William Ellwood Heinecke, effective from 1st May 2022.

g) Performance Measurement of Executive Directors, Group CEO and Management

The Group CEO and other executive Directors have their key performance indicators (KPIs) set by the Board on the recommendation of the NCCG committee. This takes the form of a balanced scorecard. At the end of each year, their performance is used in the calculation of their compensation.

For senior management executives, the NCCG Committee reviews and approves on an annual basis the evaluation process and compensation structure and assigns the Human Resources department to approve the annual compensation, including salary, bonus and non-equity incentive compensation. Similarly, line managers follow the same principles when evaluating their staff.

Details discussed in the “Executive Director, Group CEO and Management Remuneration” section are below.

h) Remuneration of the Board of Directors and Sub-Committees

The current remuneration of Independent Directors and Non-Executive Directors, including the bonus, is established based on assignments and responsibilities. Such remuneration proposed by the Board and recommended by the NCCG Committee requires approval at the shareholders’ meeting.

The policy and criteria followed by the NCCG Committee has been explained above in the section on Approving Directors Remuneration.

In 2022, the total annual remuneration approved at the Annual General Meeting of Shareholders No. 1/2022 held on April 26, 2022, was an amount not exceeding 27,000,000 baht.

The actual remuneration paid in 2022 was 26,380,000 baht against the approved amount of 27,000,000 baht. The details of the remuneration paid are hereunder:

The Remuneration for the Board of Directors and the Sub-committees in 2022¹

No.	Director	Amount Approved (Baht)	Retainer fee ²	Audit Committee ³	Nomination, Compensation and Corporate Governance Committee ⁴	Sustainability and Risk Management Committee ⁵	Bonus for Performance in 2021 (Paid in 2022)	Total Actual Paid (Baht)
1	Mr. SP Lohia	2,167,610	900,000				1,267,610	2,167,610
2	Mr. Alope Lohia	1,267,610					1,267,610	1,267,610
3	Mrs. Suchitra Lohia	845,070					845,070	845,070
4	Mr. Amit Lohia	1,445,070	600,000				845,070	1,445,070
5	Mr. Yashovardhan Lohia	845,070					845,070	845,070
6	Mr. Dilip Kumar Agarwal	845,070					845,070	845,070
7	Mr. Udey Paul Singh Gill	845,070					845,070	845,070
8	Mr. Sanjay Ahuja	845,070					845,070	845,070
9	Mr. Rathian Srimongkol	3,147,610	680,000	900,000		300,000	1,267,610	3,147,610
10	Mr. William Ellwood Heinecke ⁶	1,145,070	200,000		100,000		845,070	1,145,070
11	Dr. Siri Ganjarerndee	2,425,070	680,000	600,000	300,000		845,070	2,425,070
12	Mr. Kanit Si	2,125,070	680,000		300,000	300,000	845,070	2,125,070
13	Mr. Russell Leighton Kekuewa	2,456,340	680,000		420,000	300,000	1,056,340	2,456,340
14	Mr. Tevin Vongvanich	2,425,070	680,000	600,000		300,000	845,070	2,425,070
15	Mrs. Kaisri Nuengsigkapain	1,825,070	680,000		300,000		845,070	1,825,070
16	Dr. Harald Link ⁷	1,513,800	680,000		200,000		633,800	1,513,800
17	Mr. Chakramon Phasukavanich ⁸	211,260					211,260	211,260
Total		26,380,000						26,380,000

¹ Executive Directors on the IVL Board and Sub-Committees are not paid any retainer fee.

² Retainer Fee for Chairman of the Board- 75,000 Bhat per month, for Independent Directors the fee increased from 50,000 to 60,000 Baht per month with effect from 1 May 2022

³ 75,000 Baht per month for Chairman and 50,000 Baht for members

⁴ 35,000 Baht per month for Chairman and 25,000 Baht for members

⁵ 25,000 Baht per month to independent directors as a member

⁶ Mr. William Ellwood Heinecke’s remuneration was payable up to April 2022.

⁷ Dr. Harald Link’s remuneration was payable from May 2022 for NCCG

⁸ Mr. Chakramon Phasukavanich retired at the AGM 2021, held on 27th April 2021

i) Remuneration of Executives

The key principles followed by the NCCG Committee in determining the compensation are:

- To review and approve annually the evaluation process and compensation structure for the Company's Executive Directors. The Committee evaluates their performance and approves their annual compensation, including salary, bonus and non-equity incentive compensation for them based on initial recommendations from the Group CEO.
- To review and approve annually the corporate goals and objectives (KPIs) with respect to compensation for the Group Chief Executive Officer. The Committee shall evaluate, at least annually, the Group Chief Executive Officer's performance in light of these established goals and objectives. And, based upon these evaluations, shall set the Group Chief Executive Officer's annual compensation, including salary, bonus and non-equity incentives (if any).
- To review and approve, the evaluation process and compensation structure for the senior executives annually. The Committee shall

approve or may assign the Human Resources department to approve the annual compensation, including salary, bonus, equity and non-equity incentive compensation for senior executives.

- Base salaries for Group CEO and Executive Directors depend on the scope of their responsibilities, their capabilities, and the period over which they have performed these responsibilities.
- Annual bonuses and the percentage change from the prior year's bonus for senior executive officers are determined after an evaluation of the performance of the Company, the performance of the businesses or functions that the officer leads and an assessment of each officer's performance against expectations, which were established at the beginning of the year. The bonuses also reflect (and are proportionate to) the annual financial results of the Company.
- Other non-equity compensation is paid as per the HR manual of the Company, which is reviewed from time to time.

The remuneration of IVL Executives in 2022 was approximately 491.33 million baht.

a. Details of remuneration paid to Mr. Alope Lohia and Mr. DK Agarwal are as follows:

(Million Baht)

No.	Name/ Position	2020			2021			2022		
		Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
1.	Mr. Alope Lohia, Group CEO	39.77	26.84	66.61	42.80	53.07	95.87	51.47	67.20	118.67
2.	Mr. Dilip Kumar Agarwal, Deputy GCEO, Executive President: C-PET (Ad Interim) and CFO (Ad Interim)	39.32	25.45	64.77	60.75	41.50	102.25	69.97	59.27	129.24

b) Details of the remuneration of other Executive Directors and Indorama Management Council (IMC) members, consisting of Mrs. Suchitra Lohia, Mr. Udey Gill, Mr. Sanjay Ahuja, Mr. Yashovardhan Lohia, Mr. Alastair Mark Port*, Mr. Christopher Anthony Kenneally*, and Mr. Klaus Holz* are as follows:

(Million Baht)

2020			2021			2022		
Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
80.98	61.28	142.26	82.23	68.53	150.76	143.17	100.25	243.42

Remark: *Joined IMC in 2022

The remuneration above is in accordance with the Company's rules and regulations. The Board/NCCG Committee sets the long and short-term KPIs for the Group CEO, Deputy GCEO'S and Executive Presidents of Combined PET, IOD and Fibers business.

No compensation was paid to Directors in the form of shares.

j) Succession Planning

The NCCG Committee has put in place a succession plan for the Group CEO and key management team in consultation with the Board taking into consideration knowledge, potential and performance evaluations.

For all other employees, the Global HR department works with line management to create succession plans. To ensure that the succession plans are effective, the Global HR department implements employee development and training as well as a fast-track process for those it believes have high potential.

k) Group Management Conference

The Company holds one Board meeting every year to approve the Company's strategy and Annual Business Plan. This allows senior management to interact with members of the Board for open discussions on the future direction of the Company. The Group Management Conference for 2022 was held from January 25-29 in Phuket.

l) Professional Development of Directors and Management

Directors who recently joined the Company are given a Directors Orientation folder with complete information about the Company and its subsidiaries to assist them in getting well-acquainted with its business, practices and procedures and their rights, duties and obligations as a Director. In addition to the orientation, meetings are arranged with the management team members.

Apart from the periodic informal meetings with the management teams, the Directors are invited to attend the various business meetings held during the year.

Continuous knowledge expansion

The Board encourages directors, Audit Committee members, management team members, the Company Secretary and Internal Auditor to attend seminars, training and courses which would assist in further improving their contribution/performance in the Company. IVL encourages directors to undergo training programs.

In 2022, the directors attended the seminar Risk Awareness Training by Control Risks. Control Risks is a Pearson-approved center to deliver BTEC courses (Business and Technology Education Council). The executive directors and senior managements also attended various seminars relating to business and sustainability.

The details of all courses attended are in the Directors profiles.

The SET requires the person taking the highest responsibility in finance and accounting (Chief Financial Officer or CFO) and the person supervising accounting (Chief Accountant) to undertake certain training to meet the qualifications specified by the SEC. IVL's CFO and Head of Accounting completed the following training in 2022:

Program	CFO Mr. DK Agarwal*	Head of Accounting Mr. Manoj Kumar Sharma
Development course as prescribed by the SET	6 hours of e-Learning: CFO's Refresh Course (English Version) -Training for Continuing Accounting Knowledge (CFO's Refresher Course), Thailand Securities Institute (TSI), Stock Exchange of Thailand (SET)	7 hours of <i>Cognizant of Business</i> by Financial Statement Analysis, Accounting Coach (Thailand) Co., Ltd.

The Board also encourages senior management to attend training courses on corporate governance to enhance good governance within the Company.

9.2 Sub-Committees

The IVL Board has appointed the following three sub-committees: (a) Audit Committee; (b) NCCG Committee; and (c) Sustainability and Risk Management Committee.

9.2.1 Audit Committee

The Audit Committee consists of three members. Mr. Rathian Srimongkol as Chairman, and Dr. Siri Ganjarerndee and Mr. Tevin Vongvanich as members. All members are Independent Directors and have the requisite experience and knowledge to review financial statements. The term of the Audit Committee expires in September 2023.

The role and responsibility of the Audit Committee are specified in the Audit Committee Charter, Further details can be found in "Appendix 7" posted on the Company's website (www.indoramaventures.com) using the QR Code below:



The Chairman of the Audit Committee reports on the Committee's activities to the Board immediately following its meetings. Between meetings, the Committee reviews emerging issues with the management team, Chief of Internal Audit and with the statutory auditors.

The Audit Committee Report on its performance to shareholders is separately disclosed in the 56-1 One Report.

Internal Audit

The Company has its own Internal Audit Department, Internal Audit Manual and Internal Audit Charter. The Head of the Internal Audit Department is Mr. Narayanaswamy Subramanian. The Internal Audit Department conducts group wide internal audit activities under the supervision of the Head of Internal Audit. The Internal Audit Department reports functionally to the Audit Committee. A detailed annual plan is made for units and approved by the Audit Committee, which then periodically reviews the work of the Internal Audit Department compared to the plan and makes recommendations to management. In 2022, audits were conducted for all Thai units and several overseas units. The Audit Committee Secretary follows up on the implementation of recommendations and progress reports to the Audit Committee and undertakes periodic checks to ensure compliance with statutory and regulatory requirements.

9.2.2 Nomination, Compensation and Corporate Governance Committee

The NCCG Committee consists of five members. Mr. Russell Leighton Kekuewa is Chairman. Other members of the Committee are Dr. Siri Ganjarerndee, Mr. Kanit Si, Mrs. Kaisri Nuengsigkapan and Dr. Harald Link. Dr. Harald Link was appointed in place of Mr. William Ellwood Heinecke, who retired from the Board in April 2022. All members on the Committee are independent directors. The Board, at its meeting No. 3/2022 held on May 18, 2022, approved the reappointment of the NCCG Committee. The current term of the committee expires in May 2024.

Mr. Alope Lohia, Group CEO, is an advisor to the NCCG Committee.

The role and responsibility of the NCCG Committee is specified in the NCCG Committee Charter, Further details can be found in "Appendix 7" posted on the Company's website (www.indoramaventures.com) using the QR Code below:



A report from the NCCG Committee is separately disclosed in the 56-1 One Report.

9.2.3 Sustainability and Risk Management Committee

The SRMC Committee is chaired by Mr. Alope Lohia, the Group CEO and Vice Chairman of the Board. Other members of the Committee are Mr. Rathian Srimongkol, Mr. Dilip Kumar Agarwal, Mr. Udey Paul Singh Gill, Mr. Russell Leighton Kekuewa, Mr. Kanit Sri, Mr. Tevin Vongvanich and Mr. Yashovardhan Lohia. The current term of the SRMC Committee expires in August 2023.

The role and responsibility of the SRMC Committee is specified in the SRMC Charter. Further details can be found in “Appendix 7” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



A report from the SRMC Committee is separately disclosed in the 56-1 One Report.

9.3 Selection and Appointment of Directors and Group CEO

9.3.1 Directors

The selection, appointment and the withdrawal of the Board of Directors of Indorama Ventures PCL shall be as prescribed by the Articles of Association, which can be summarized as follows:

1. To conduct the business of the Company, the Board of Directors shall consist of at least five directors. Not less than one-half of all directors shall have residence in the Kingdom of Thailand.
2. The appointment of a director shall be made by a majority vote of the shareholders meeting in accordance with the following conditions and procedures:
 - (a) A shareholder shall have one vote for each share.
 - (b) The shareholders shall vote for the election of each director in turn, one by one.
 - (c) Each shareholder may exercise all the votes he or she has (a) to elect one or several persons as a director or directors. But the shareholder cannot divide his or her votes to any nominated director by any allotment of shares of any number;
 - (d) The people receiving the most votes are those who are elected to be directors, in descending order, to the number of directors who are to be elected. If there is a tie in the last to be elected and this exceeds the said number of directors, the presiding chairman shall have the casting vote.
3. At every annual general meeting, one-third of the total number of Directors shall vacate their office. If the number is not a multiple of three, then the number nearest to one-third must retire from office. The directors to retire during the first and second years following the registration of the Company shall be drawn by lots. In subsequent years, the director who has been in office for the longest term shall retire. A retiring director is eligible for re-election.
4. Any director wishing to resign from the director’s position shall submit a resignation letter to the Company. The resignation shall take effect upon the date on which the resignation letter reaches the Company.

5. The Shareholders’ Meeting may pass a resolution removing any director prior to retirement by rotation, by a vote of not less than three-fourths of the number of shareholders attending the meeting and having the right to vote, and the shares held by them shall not, in aggregate, be less than one half the number of the shares held by the shareholders attending the meeting and having the right to vote.

Qualification of Directors and Independent Directors

The Company follows the guidelines of the SET and the SEC and industry best practices to set the qualifications of its Executive, Non-Executive and Independent Directors. The qualifications of such Directors are specified in the Board of Directors Charter. Further details of the qualification of Directors and Independent Directors can be found in “Appendix 6” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



9.3.3 Lead Independent Director

In continuation of good governance practices, the Board, at its meeting in February 2018, approved the appointment of a Lead Independent Director. Mr. Rathian Srimongkol is the current Lead Independent Director, Chairman of Audit Committee and Member of the Sustainability and Risk Management Committee.

Further details of Roles and Responsibilities of Lead Independent Director can be found in “Appendix 7” posted on the Company’s website (www.indoramaventures.com) using the QR Code below.



9.3.4 Group CEO

The Board of Directors will appoint the Group CEO. The Group CEO is a person with the highest personal and professional integrity, with demonstrated and exceptional ability and judgment and who will be most effective in serving the long-term interests of the Company with expert knowledge in the industry in which IVL operates. Further details of role and responsibilities of the Group CEO can be found in “Appendix 7” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



9.4 Governance in Subsidiaries and Associated Companies

It is the policy of the Company to have at least one experienced representative from Thailand to be a director of its operating subsidiaries and associated companies. That person must have the requisite qualifications suitable for the business, with no conflict of interest with the businesses of those subsidiaries. The representative shall manage and

administer the businesses according to the regulations and procedures provided in the Company’s and subsidiaries’ Articles of Association and relevant laws. All policies, procedures, guidelines and recommendations of IVL must be implemented.

The Company Secretary Department keeps a summary of the corporate by-laws of all IVL subsidiaries and regularly monitors their compliance with those laws.

Moreover, key information about each subsidiary and associate company is maintained and updated by the Company Secretary Department.

Every quarter, confirmation and updates are taken from all units on their compliance with regulations and litigations, if any. A summary is presented to the Audit Committee.

The Company Secretary Department in Thailand has a dedicated senior staff member to follow-up on all IVL subsidiary companies’ quarterly Board and shareholders’ meetings as applicable. In this regard, they are monitored by a global meeting control statement.

The core subsidiary companies of IVL held **630** Board and shareholders’ meetings in 2022 which are summarized below:

Region	No. of Companies	No. of Meetings
Asia	53	269
Europe	66	203
Americas	72	109
Africa and the Middle East	6	45
Australia	2	4

Apart from these meetings, there were also regular management and executive committee meetings of respective businesses to review the business performance of the various subsidiaries.

Effective monitoring of the minutes at the various units is done by way of a “Meeting Control Statement” by the Corporate Secretarial team.

9.5 Use of the Company’s Internal Information

The Company has a written policy on the use of confidential and/or internal information to prevent any illegal use. The statement is displayed at IVL’s head office and at the offices and workplaces of all our subsidiaries.

The Code of Conduct in the Manual prohibits directors and employees from buying, selling, transferring or accepting the transfer of Company securities by using confidential and/or internal information in any manner that may take advantage of outsiders by using inside information.

All directors, senior management, auditors and employees having access to Company financial statements are required to make a declaration to the Company Secretary of their shareholding movement, including their spouse and minor children,. A summary of the shareholding is presented to the Board on a quarterly basis.

Each year, IVL directors and executives submit a ‘Declaration of Interest’ form to the Company Secretary in a format approved by the Board, on their interest or a related person’s interest in the Company or its subsidiaries. Apart from the “Declaration of Interest,” all directors and executives have signed the Acknowledgement of the Corporate Governance Manual. In 2022, there was no case regarding the mis-use of the Company’s internal information.

Further details of Use of the Company’s Internal Information can be found in “Appendix 8” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



9.6 Audit Fee

The total audit fee and non-audit fee paid during 2022 for IVL and all its subsidiaries, jointly controlled entities and associates globally are as follows:

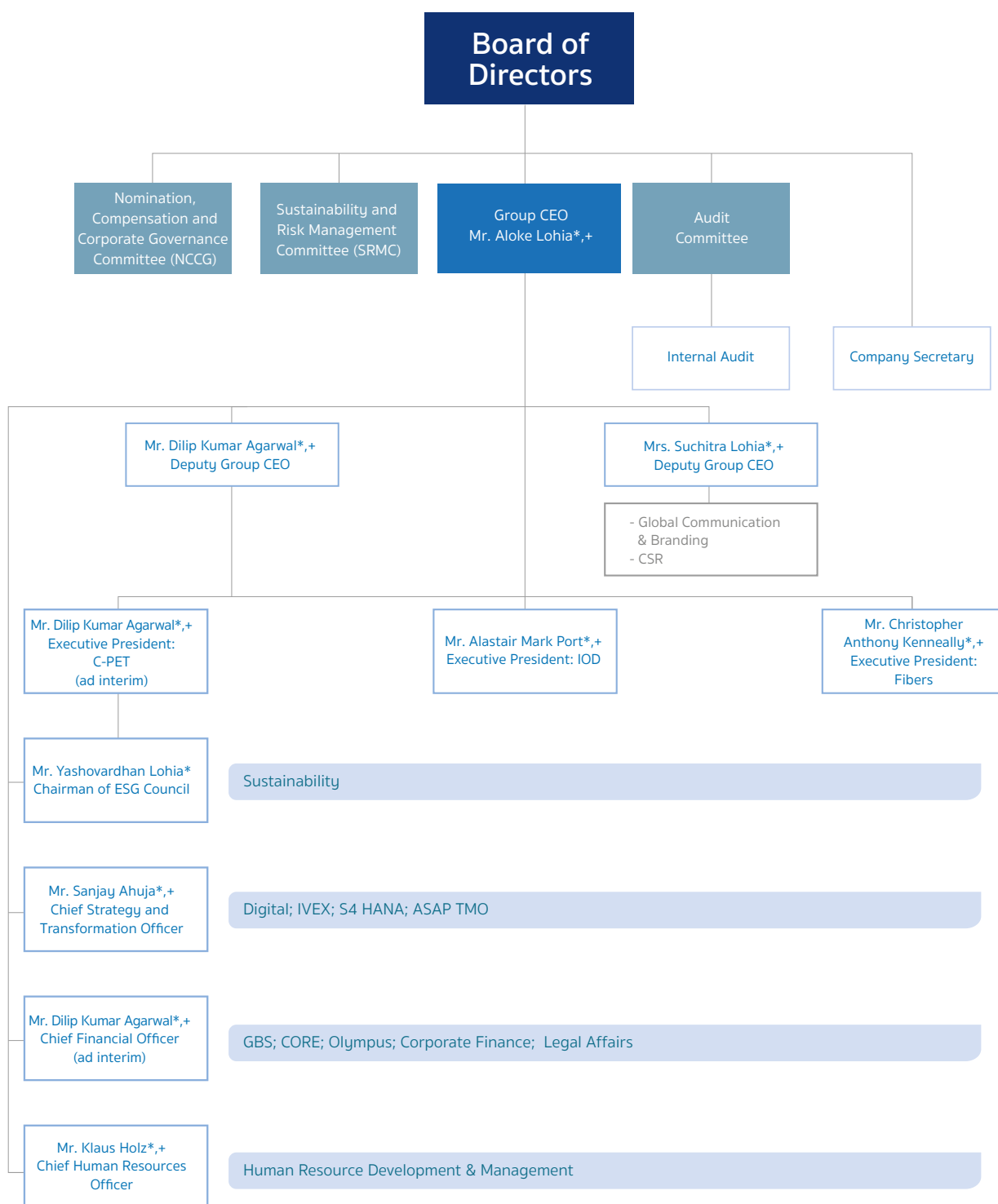
Particulars	Unit: Million Baht	
	2021	2022
1. The total audit fees for IVL and all its subsidiaries, jointly controlled entities and associates globally	211	242
a) Payment to KPMG Phoomchai Audit Ltd. and other member firms of KPMG Phoomchai Audit Ltd.	178	207
b) Other Audit firms	33	35
2. The total non-audit fees paid to member firms of KPMG International other than KPMG Phoomchai Audit Ltd.	65	97

Remark: The increase in the audit fee is on account of the new acquisitions that came under the IVL umbrella in 2020.

Our Company’s policies, integrity, ethics and disclosures always seek to emulate the best practices in corporate governance.



Management Structure



* Management as per SEC/SET regulations + Indorama Management Council (IMC) Members

Remark - The Management Structure is effective from 1st February 2023

The Board of Directors

As of 1st February 2023, IVL's Directors are:

Name	Position	Appointment Date of Directorship
 1. Mr. Sri Prakash Lohia	<ul style="list-style-type: none"> Chairman of the Board Non-Executive Director 	19 September 2009
 2. Mr. Aloke Lohia	<ul style="list-style-type: none"> Vice Chairman of the Board Executive Director Chairman of the Sustainability and Risk Management Committee Group Chief Executive Officer 	19 September 2009
 3. Mrs. Suchitra Lohia	<ul style="list-style-type: none"> Executive Director Deputy Group CEO Chairperson of the Corporate Social Responsibility Committee 	19 September 2009
 4. Mr. Amit Lohia	<ul style="list-style-type: none"> Non-Executive Director 	19 September 2009
 5. Mr. Yashovardhan Lohia	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Chairman of ESG Council 	24 April 2019
 6. Mr. Dilip Kumar Agarwal	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Deputy Group CEO Executive President Combined PET (Ad Interim) Chief Financial Officer (Ad Interim) 	27 April 2010
 7. Mr. Udey Paul Singh Gill	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee 	27 April 2011
 8. Mr. Sanjay Ahuja	<ul style="list-style-type: none"> Executive Director Chief Strategy and Transformation Officer 	13 November 2015
 9. Mr. Rathian Srimongkol	<ul style="list-style-type: none"> Vice Chairman of the Board Lead Independent Director Chairman of the Audit Committee Member of the Sustainability and Risk Management Committee 	19 September 2009
 10. Dr. Siri Ganjarerndee	<ul style="list-style-type: none"> Independent Director Member of the Audit Committee Member of the Nomination, Compensation and Corporate Governance Committee 	27 April 2010

Name	Position	Appointment Date of Directorship
 11. Mr. Kanit Si	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee Member of the Sustainability and Risk Management Committee 	27 April 2010
 12. Mr. Russell Leighton Kekuewa	<ul style="list-style-type: none"> Independent Director Chairman of the Nomination, Compensation and Corporate Governance Committee Member of the Sustainability and Risk Management Committee 	20 October 2014
 13. Mr. Tevin Vongvanich	<ul style="list-style-type: none"> Independent Director Member of the Audit Committee Member of the Sustainability and Risk Management Committee 	24 April 2019
 14. Mrs. Kaisri Nuengsigkapien	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	30 June 2020
 15. Dr. Harald Link*	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	1 November 2021

Further details can be found in “Appendix 1” posted on the Company’s website (www.indoramaventures.com) using the QR Code below:



The Authorized Directors

The Authorized Directors who sign on behalf of the Company can be any two of the following directors: Mr. Alope Lohia, Mrs. Suchitra Lohia, Mr. Dilip Kumar Agarwal, Mr. Sanjay Ahuja, Mr. Yashovardhan Lohia and Mr. Udey Paul Singh Gill together with the Company’s affixed seal.

Composition of the Board of Directors

There are 6 executive directors, (1) Mr. Alope Lohia, (2) Mrs. Suchitra Lohia, (3) Mr. Dilip Kumar Agarwal, (4) Mr. Udey Paul Singh Gill, (5) Mr. Sanjay Ahuja, and (6) Mr. Yashovardhan Lohia.

There are 7 independent directors, (1) Mr. Rathian Srimongkol, (2) Dr. Siri Ganjarerndee, (3) Mr. Kanit Si, (4) Mr. Russell Leighton Kekuewa, (5) Mr. Tevin Vongvanich, (6) Mrs. Kaisri Nuengsigkapien, and (7) Dr. Harald Link, in addition to 2 non-executive directors, (1) Mr. Sri Prakash Lohia and (2) Mr. Amit Lohia.

Roles, Duties and Responsibilities of the Board

Please see the details under “Corporate Governance Report”

Sub-Committees

Indorama Ventures Public Company Limited consists of 3 sub-committees, namely, the Audit Committee, the Nomination, Compensation and Corporate Governance Committee and the Sustainability and Risk Management Committee. The details of each sub-committee are provided under the topic of “Corporate Governance Report”.

Executives (as per SEC's regulation)

As of 1st February 2023, IVL's executives are:

Name	Position
1. Mr. Alope Lohia*	• Group Chief Executive Officer
2. Mrs. Suchitra Lohia*	• Deputy Group CEO and Chairperson of Corporate Social Responsibility Committee
3. Mr. Yashovardhan Lohia	• Chairman of ESG Council
4. Mr. Dilip Kumar Agarwal*	• Deputy Group CEO, Executive President: Combined PET (Ad Interim) and Chief Financial Officer (Ad Interim)
5. Mr. Sanjay Ahuja*	• Chief Strategy and Transformation Officer
6. Mr. Alastair Mark Port*	• Executive President: Integrated Oxides and Derivatives
7. Mr. Christopher Anthony Kenneally*	• Executive President: Fibers
8. Mr. Klaus Holz*	• Chief Human Resources Officer
9. Mr. Manoj Kumar Sharma	• Head of Account

* Members of Indorama Management Council (IMC)

The Company Secretary

The Board of Directors of the Company has appointed Mr. Souvik Roy Chowdhury as the Company Secretary effective 15th February 2010. Further details can be found in "Appendix 1, 3, and 7" posted on the Company's website (www.indoramaventures.com) using the QR Code below:



Remuneration of Directors and Management

Please see the details under "Corporate Governance Report"

Personnel

Number of Employee

As of 31st December 2022, the Company, including its affiliates and in accordance with its business structure, has total 30,201 employees as outlined below:

Type of Businesses	Numbers of Employees
Combined PET	9,279
Fibers (including Wool)	16,357
Integrated Oxides and Derivatives	3,796
Corporate Supports	769

Employee Benefits paid out in 2022

Items	Amount (in Million Baht)
Wages, Salaries, Bonuses and Staff Welfare	41,292
Provident Funds	37
Long-term Employee Benefits	3,737
Other Long-term Benefits (EJIP)	-

People

Key achievements for 2022



91.86%

Global Retention Rate /

13.71% Global Attrition Rate /

11.33 % Voluntary Attrition Rate



96

Nationalities



25%

Female



30.66

Average Training Hours

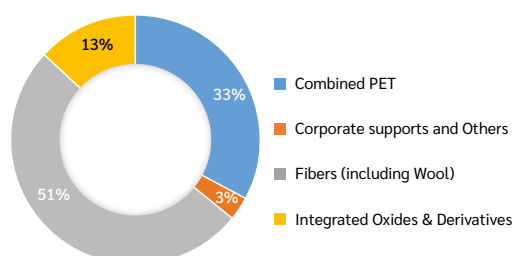
2023 Employee Engagement Survey results

- Survey participation: 84.06%
- Engagement score (Employee Net Promoter Score): 75.85%

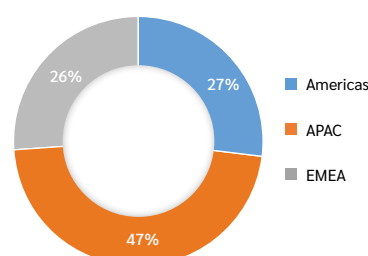
1. Our Global Workforce is Making a Difference

At Indorama Ventures, we value our people and promote diversity and inclusion. Under Vision 2030, IVL's strategic acquisitions are aligned with growing our industry leadership in sustainability. In 2022, IVL acquired Brazil-based Oxiteno and Vietnam-based Ngoc Nghia. Through these acquisitions, our headcount grew by 17.24% to 30,201.

Employees by segment



Employees by continent

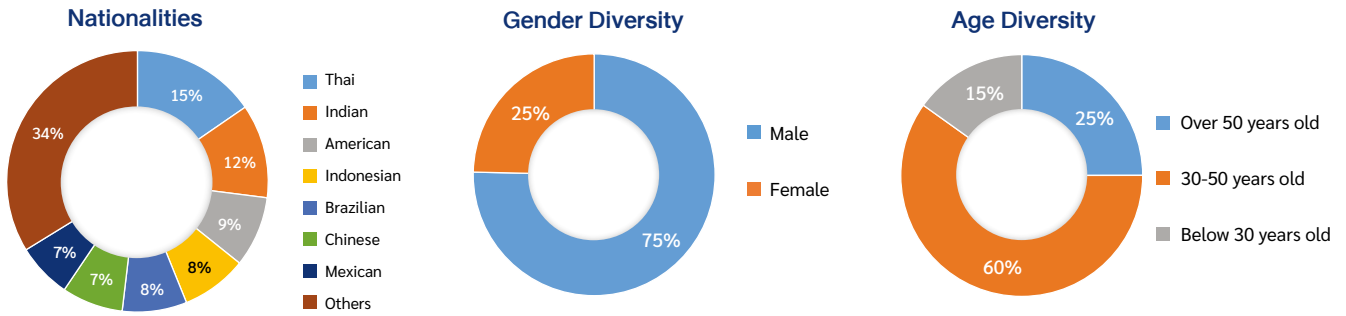


We developed retention programs based on information gathered from various analytical resources. In 2022, we continued using these programs in units with the highest turnover rate in the last two years. Companywide, we also provide the IVL Group Employee Assistance Program (EAP) to help employees in their moments of need, whether it be related to professional or personal circumstances.

A local assessment was conducted through our Global Employee Engagement Survey, geographic data and exit interview analyses, focus groups, and input from our senior leadership team. Local action plans were developed, based on shared best practices, to retain qualified employees within those units.

2. Diversity is Our Strength.

IVL values diversity and we take pride in our ability to connect different cultures, backgrounds, and experiences, allowing our team to contribute exciting ideas and unique perspectives for sustainable growth.



3. Engaged People

The Global Employee Engagement (GEE) survey is conducted every two years. Survey results for 2023:

- Survey participation: 84.06%
- Employee engagement: 73.31% (actively engaged employees)
- Employee Net Promoter Score: 75.85%
- Key engagement drivers:
 1. Objectives and aspirations: 74.14%
 2. Accountabilities and collaboration: 78.71%
 3. People manager capabilities and interactions: 73.12%
 4. Performance management and recognition: 62.25%
 5. Leadership: 72.58%

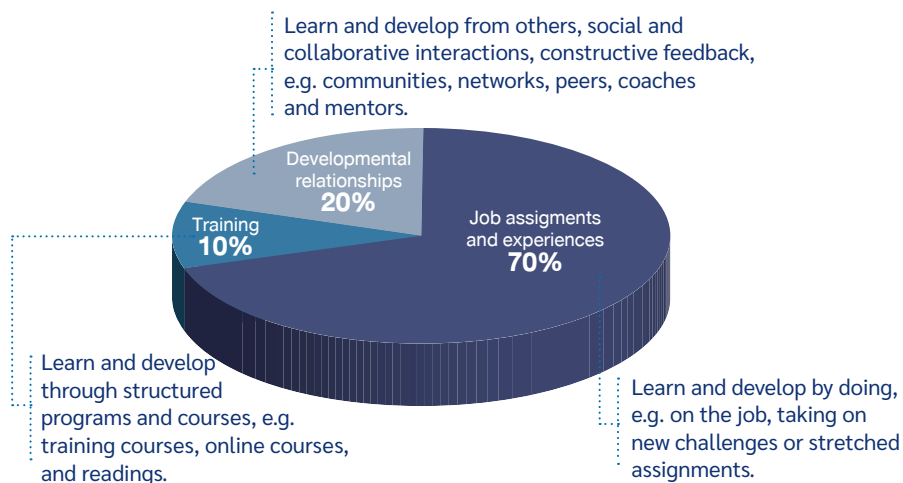
Following the survey, every site works on identifying improvement areas and actions through focus groups, validation, and leading and lagging data.

4. People Development Opportunities

We promote a learning culture and growth mindset:

- Employees take ownership and drive their development.
- Managers facilitate, encourage, and support the development of their employees.
- Through our leaders we collectively create a dynamic, experiential, and innovative environment for growth and learning.

We promote different ways to learn and grow, depending on the development needs and individual learning style. We adopt a holistic learning and development approach, guided by a 70-20-10 ratio:



Highlights 2022

	Initiatives	Outcomes
1	IVL Leadership Development <ol style="list-style-type: none"> Quality leadership enables sustained business performance and high employee engagement. Focus on developing IVL Leadership Skills. 	<ul style="list-style-type: none"> 1,447 leaders were trained through leadership training programs. 1,934 leaders completed leadership e-learning. The coaching and mentoring program was extended to leaders to support their specific development needs.
2	HR Functions and Capabilities <ol style="list-style-type: none"> HR delivers value to the business and a positive employee experience by being integrated and digitally enabled. 	<ul style="list-style-type: none"> HR Learning curriculum was designed to enable HR to deliver Value Proposition.
3	Customized training/programs <ol style="list-style-type: none"> Pre-assignment training for new expatriates to support assimilation and cultural awareness. Global English language e-learning to support employee development and system adoption. IVL Thailand's Top Talent Project. 	<ul style="list-style-type: none"> 35 expatriates received pre-assignment training. Global English e-Learning piloted for 100 employees in Asia and the Americas. 59 talents selected and undergoing 2-year development acceleration programs.

Training hours by category:

Category	Training hours
Leadership curriculum	40,659
Mandatory programs	398,704
Functional/Technical trainings	349,950
Total	789,313

5. Succession Planning

The global succession planning process was launched in 2019 to build a robust talent pipeline, with two successors ready in two years.

From 39 senior management positions and 68 validated successors in 2019, the process was expanded to middle and site management positions. In 2022, we managed 791 positions with 1,269 validated successors with strong progress on diversity and age profile. We will continue to expand to the remaining 1000+ target positions.

In consultation with the NCCG committee, the Board reviews both the process adequacy and the plan for the Group CEO and Executive Board positions. For other key positions, IVL ensures successful leadership transitions through a constant development of the next generation of leaders.

6. Compensation and Rewards

Compensation packages are assessed against industry standards and local nuances, either matching or exceeding them. The incentive system is linked to a combination of the performance matrix of the Company, business unit, and individual levels. In 2022, we conducted job evaluations for middle management positions in addition to site leadership positions in 2021. We included them in our compensation system (SuccessFactors) for the pay review process with market benchmarking across all plants in the IVL Group.

For the rewards system we have the **IVL Performance Excellence Awards** is an initiative to sustain and improve employee engagement and inspire employees to challenge boundaries and deliver outstanding results. It is based on stellar performance across the criteria: Financial, operational, and sustainability performance. The best Business Units are identified and cash incentives are provided to these employees to recognize their excellent teamwork.

In addition, we also have the **IVL Culture Awards** is an initiative to build a shared understanding of the behavior associated with our culture and values which are the foundation of our success. This award is granted to employees and teams that exemplify our core principles in five categories: Customer-centric, Responsibility, Driving Diversity, Change Enabler, and Leadership.

GCEO remuneration to average employee remuneration ratio:

	Remuneration 2022
GCEO (THB 000)	118,667.68
Average Employee Remuneration (THB 000)	1,746.21
Ratio	67.84

7. Human Rights

IVL respects the human rights of all its workers and the local communities where we operate. In 2017, we formalized our commitment to the UN Guiding Principles on Business and Human Rights. We started a yearly global human rights survey in 2015, and continue to work on action plans to mitigate perceived risks, and engage with our suppliers on their commitment to address human rights issues. Our respective units have taken initiative in getting SA8000 certification, or its equivalent, to ensure that there are no human rights violations across the organization.

8. Material Labor Disputes

Since our inception, IVL has never had any material labor disputes.

Connected Transaction

The connected transactions occur in the normal course of business and the pricing is akin to market prices or at arm's length basis that would normally be charged to/by any other customers/suppliers with comparable and reasonable terms and conditions. The following is a summary of such transactions as at 31st December 2022:-

Connected Party & Relationship	Type of Transaction	Amount (in MB)		
		2020	2021	2022
PT. Indo-Rama Synthetics Tbk., Indonesia (PTIRS) <ul style="list-style-type: none"> The majority shareholding in PTIRS is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia¹ and his immediate family members are the discretionary beneficiaries. Mr. Sri Prakash Lohia¹ is the President Commissioner and Mr. Amit Lohia¹ is a Vice President Commissioner of PTIRS. 	Sale of raw materials/ products/ services/ utilities	2,587.95	3,718.1	3,542.72
	Purchase of raw materials/ products/ services/ utilities	346.19	617.57	644.11
Indorama Eleme Petrochemicals Ltd., Nigeria (IEPL) <ul style="list-style-type: none"> The majority shareholding in IEPL is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia¹ and his immediate family members are the discretionary beneficiaries. Mr. Sri Prakash Lohia¹ is the Chairman and Mr. Amit Lohia¹ is a Director of IEPL 	Purchase of utilities/ services	54.68	133.48	83.00
Pacific Resources Ltd., Thailand <ul style="list-style-type: none"> Mr. Anuj Lohia, son of Mr. Alope Lohia², is a major shareholder of Pacific Resources Ltd. 	Service expense (Office Lease)	7.61	7.61	7.61
Cryoviva (Thailand) Ltd., Thailand <ul style="list-style-type: none"> Mr. Alope Lohia² is an indirect shareholder of Cryoviva (Thailand) Ltd. 	Service income	0.93	0.93	0.93
PT. Irama Unggul, Indonesia (IU) <ul style="list-style-type: none"> The majority shareholding in IU is ultimately owned by Mrs. Shruti Lohia (daughter of Mr. Sri Prakash Lohia¹). Mr. Sri Prakash Lohia¹ is the sole Commissioner of IU 	Service expense (Office Lease)	1.02	1.05	1.12
Lohia Global Holdings Limited, Hong Kong-China Lohia Global Holdings Limited is owned by Mrs. Shruti Lohia, a daughter of Mr. Sri Prakash Lohia ¹ , and Mr. Krishan Kumar Aggarwal.	Service expense (Royalty Fee for Indorama trade name)	204.86	228.42	268.82

Connected Party & Relationship	Type of Transaction	Amount (in MB)		
		2020	2021	2022
Vega Aviation Limited, British Virgin Islands Vega Aviation Limited is a company which is 100% owned by Canopus International Limited, Mauritius. Canopus International Limited is a company in which Mr. Alope Lohia ² and his immediate family have voting rights of up to 76% and an equity interest of up to 50% while the remaining voting rights of 24% and 50% of the equity interest is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries.	Service expense (Aircraft Lease)	78.23	83.53	72.97
Thai Plaspac Public Company Limited, Thailand (TPAC) <ul style="list-style-type: none"> Mr. Anuj Lohia, son of Mr. Alope Lohia², is a major shareholder in TPAC. Mr. Kevin Kumar Sharma, son-in-law of Mr. Alope Lohia², is the CEO of TPAC. 	Sale of products	10.11	42.03	60.49
Yayasan Pendidikan Indorama, Indonesia (YP) The sole trustee of YP is Mr. Sri Prakash Lohia ¹ and Mr. Amit Lohia ¹ is the Chairman of the Advisory Board of YP.	Service Expense (Job work)	3.82	7.93	8.46
PT. Tigadya Minergy, Indonesia The majority shareholding of PT. Tigadya Minergy is ultimately controlled by Mr. Sri Prakash Lohia ¹ .	Purchase of coal	0.00	0.00	0.00
Indorama Industries Limited, India (IIL) The majority shareholding in IIL is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries.	Sale of raw materials/ products/ services/ utilities	9.64	0.87	0.00
	Purchase of raw materials/ products/ services/ utilities	26.80	58.89	43.10
Indorama Synthetics (India) Limited (IRSL) Mr. O.P. Lohia, brother of Mr. Alope Lohia ² , is a major shareholder of Indorama Synthetics India Ltd.	Sale of raw materials, yarn	0.00	428.30	3,672.76
IVL Foundation Mrs. Suchitra Lohia ³ and Mrs. Aradhana Lohia, a daughter of Mr. Alope Lohia ² and Mrs. Suchitra Lohia ³ , are the Chairperson and Vice Chairperson of the IVL Foundation.	Donation for various social, charitable, environmental protection, sports, healthcare and other related activities.	11.50	23.00	13.50
Sun Packaging Systems (FZC) <ul style="list-style-type: none"> Sun Packaging Systems (FZC) is a subsidiary of Thai Plaspac Public Company Limited (TPAC). Mr. Anuj Lohia, son of Mr. Alope Lohia², is a major shareholder in TPAC. Mr. Kevin Sharma, son-in-law of Mr. Alope Lohia², is the CEO of TPAC. 	Sale of products	0.00	0.00	23.40
Indorama India Private Limited (IIPL) The majority shareholding in IIPL is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries.	Sale of products	0.00	0.00	0.93
Aurus Speciality Limited (Aurus) The major shareholder of Aurus Speciality Limited is Beacon Chemicals limited, whose ultimate beneficiaries are Mr. Alope Lohia ² , the Group CEO of the Company, and Mrs. Suchitra Lohia ³ , the Deputy Group CEO of the Company, holding approximately 99.71%.	Sale of Land, Buildings and Plant & Machinery	0.00	0.00	106.08

Remark ¹ Mr. Sri Prakash Lohia is the Chairman and a Non-Executive Director and Mr. Amit Lohia is a Non-Executive Director of Indorama Ventures Public Company Limited ("IVL");

² Mr. Alope Lohia is an Executive Director and Group CEO of IVL;

³ Mrs. Suchitra Lohia is an Executive Director and Deputy Group CEO of IVL.

The Audit Committee Opinion on the Connected Transaction

The above connected transactions have been considered and opined by the Company's Audit Committee that the aforesaid connected transactions are reasonable and undertaken in the interest of the Company's business. While entering into these transactions, the Committee considers the best interest of the Company. No additional benefit has been transferred between the Company and the persons who have the conflict of interest.

Policy and Procedure to Approve the Connected Transaction

In the event that the Company carries out its business with the connected persons who may have a conflict of interest with the Company, the Audit Committee will express its opinion regarding the necessity of such transactions. The Audit Committee will ensure that terms and conditions of these transactions are consistent with market practice and prices charged for these transactions are evaluated and compared with market prices. In the event that market price is not available, the Audit Committee must ensure that these prices are reasonable and the transactions are carried out in the best interest of the Company. If the Audit Committee is unable to evaluate connected transactions due to lack of expertise in certain

areas, the Company will arrange an independent expert to evaluate and give opinion on such transactions. The Board of Directors or the Audit Committee or the Company shareholders, as the case may be, will use this opinion from the independent expert as a supplement to form their own conclusion. Those directors who may have conflict of interest with the Company are prohibited from either voting or attending the meeting on matters regarding to the said connected transactions and disclose in Annual Registration Statement/ Annual Report (Form 56-1 One Report).

Policy on the Entering into a New Connected Transaction

For any new connected transaction, the respective unit would need to contact the Secretary of the Audit Committee and inform about the proposed transaction, its rationale, value of transaction, pricing, terms and conditions in order for the Secretary of the Audit Committee to classify under which category of connected transaction it would fall into and to get necessary approval from the Management/Audit Committee/ Board/Shareholders as required. Moreover, the Company will ensure that such transactions are carried out in compliance with the SEC Act, Rules, Notifications and Regulations of the Capital Market Supervisory Board, SEC and SET. In addition, the Company must also comply with the disclosure rules related to connected transactions and the Company's policy.



Internal Control and Risk Management

The Board of Directors has assigned the Audit Committee (AC) to review the financial reporting process of the Company and its subsidiaries. Along with it, AC reviews the Company's performance in compliance with Corporate Governance principles, maintaining suitable, effective, and adequate internal controls and audit systems, selection and recommendation for an external auditor, and any other tasks as assigned by the Board.

The Company's in-house Internal Audit Department (IAD) reports to the AC. The IAD, through its assurance reviews, reviews the adequacy and effectiveness of the internal control systems for the Company and its subsidiaries. The department reports its findings and recommendations to management and the AC. The adequacy and effective working of the system of internal controls is documented in IVL's Sufficiency of Internal Control System Evaluation Form.

The Board of Directors, at Meeting No. 2/2023 held on February 24, 2023, and attended by all members of the AC, considered the recommendations of the Committee, evaluated its opinion on the internal control systems

of the Company and its subsidiaries for 2022, and observed the internal control systems to be adequate and effective. The internal control systems in use at the Company generally conform to the internal control model as advocated by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The summary of IVL's internal control systems is in-line with the COSO framework as detailed below:

Control Environment

IVL prepares annual and five-year business plans, which are approved by the Board of Directors. These plans form the basis of setting employee performance goals at all the operating entities which are periodically reviewed. All employees have been provided with the IVL Policy Handbook containing the policies that facilitate an improved control environment. IVL has a detailed Code of Conduct for its Directors and Employees which also apply to IVL's subsidiaries and affiliates. All new employees sign off on the Code of Conduct as part of their orientation program. The Code of Conduct for Directors and Employees is also published on IVL's website.

The Company has a Policy on Internal Information Control and Use of Insider Information to regulate the conduct of all directors, executives and employees to keep the Company's information confidential and not to divulge with the aim of gaining benefits for the individual in question or others, directly or indirectly. The Anti-Corruption Policy was adopted to conduct IVL's business globally with honesty, fairness, without corruption or bribery, and with accountability. These policies are published on IVL's website.

Risk Assessment

IVL has a Sustainability and Risk Management Committee (SRMC) that reviews the Company's performance on sustainability, assesses the risks associated with aspects of sustainable development and informs the Board of risks with potentially significant impacts that could adversely impact sustainable and profitable growth. The SRMC reports to the Board periodically on its activities and evaluates its performance on an annual basis. The SRMC also reviews the sensitivity analysis of the business plan, greenfield and M&A projects. The respective business heads, who are members of the SRMC, also closely monitor key business risks.

Supporting the SRMC is the Risk Management Council (RMC). The primary role of the Council is to serve as the central platform to assist the IMC, SRMC and Board in identifying and deliberating about key emerging risks including high investment value risk assessments, reviewing governing documents at the Group level and providing assurance on enterprise risk, and implementing crisis and business continuity management group-wide to protect, safeguard and drive IVL's interests.

Control Activities

IVL's operating entities have requisite policies and procedures regarding its business activities. These, together with the Delegation of Authority manual, ensure that adequate controls and checks are exercised and risk of fraud or misappropriations is adequately mitigated. There is an adequate segregation of duties with respect to the authorizations, recording and custody of assets. There is an internal policy on connected transactions which stipulates what constitutes a connected transaction, who falls under the definition of a connected party and the procedure to be followed in case the Company enters into a connected transaction. All connected transactions must follow the rules and regulations of the SET. A new connected transaction is reviewed by the AC and recommended to the Board for its approval. Every quarter, a statement of all connected transactions is submitted to the AC and the Board. All IVL subsidiaries have directors who regularly monitor their operations ensuring they are in-line with IVL's overall objectives. The IVL Board is regularly briefed on the performance of its subsidiaries. Confirmation is obtained from the respective Plant Head validating the compliance with the applicable laws and regulations, while statutory filings are reported to the AC on a quarterly basis and to the Board on an as-needed basis. The Company has a Disaster Recovery Plan for IT processes to bring the IT system back to normal within a specified timeframe in case any disaster happens.

Information and Communications

The Company management ensures that requisite information is provided to the Board for their review and consideration. The minutes of the Board of Directors' meeting are prepared by the Company Secretary, reviewed by all Directors and signed off by the Chairman of the Meeting. The Company Secretary and the AC Secretary fulfil any requirements and provide information as needed to assist the Directors. IVL has a Whistle-blower Policy that provide different channels for employees to make complaints, if any, anonymously. The Company's Legal and Secretarial Department is authorized to communicate with regulatory agencies. IVL's website provides a communications channel to external parties who may contact the Company's Independent Directors by sending an email to: independentdirectors@indorama.net or ethics@indorama.net

Monitoring

The annual operational and performance budgets of the Company and its subsidiaries are reviewed and approved by the Board of Directors. IVL's quarterly audited consolidated financial statements are reviewed and approved by the AC, which also reviews the annual audited financial statements and makes recommendations to the Board for its approval.

The Company's in-house IAD formulates the annual internal audit plan. The audit plan considers several risk factors and results of previous internal audit business process reviews. The annual Internal Audit plan is also discussed with the Company's senior management before it is ultimately reviewed and approved by the AC. The IAD reviews the internal control system throughout the various business processes and across all IVL subsidiaries according to its Annual Internal Audit Plan. The deficiencies noted and recommendations made are communicated through their internal audit report. The significant audit findings are presented to the AC on a half-yearly basis. From time to time, the AC reviews a management letter from the external auditors, and periodically reviews the status update on the implementation of outstanding audit recommendations.

Head of Internal Audit and Head of Corporate Compliance

1. Head of Internal Audit

The IAD has an Internal Audit Manual, a document that governs the department activities, describing in detail the IIA International Professional Practices Framework, Standards and Activities undertaken for Internal Audit planning till its execution. The AC has the authority to approve the appointment, transfer and dismissal of the Head of Internal Audit. Mr. Narayanaswamy Subramanian heads the IVL IAD.

2. Head of Corporate Compliance

IVL has appointed the Company Secretary, Mr. Souvik Roy Chowdhury, as the Head of Corporate Compliance to review and evaluate the various statutory and corporate compliances for all business entities and ensure they are in accordance with the applicable rules and regulations.

Independent Auditor's Report

To the Shareholders of Indorama Ventures Public Company Limited

Opinion

I have audited the consolidated and separate financial statements of Indorama Ventures Public Company Limited and its subsidiaries (the "Group") and of Indorama Ventures Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2022, the consolidated and separate statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2022 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants including Independence Standards issued by the Federation of Accounting Professions (Code of Ethics for Professional Accountants) that is relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with the Code of Ethics for Professional Accountants. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Significant business acquisition

Refer to Note 4(iv) to the consolidated financial statements.

The key audit matter

On 1 April 2022, the Group completed the significant acquisition of a 100% equity stake in Oxiteno S.A. for a cash consideration of BRL 6,694.2 million (Baht 47,535.8 million). The Group assessed that this acquisition is qualified as a business combination.

The acquisition method of accounting for business combinations is a complex and judgmental exercise, requiring the Group to determine the fair value of identifiable assets acquired and liabilities assumed and consideration transferred with any resulting differences recognised as goodwill or a gain on bargain purchase.

Due to the significance of acquisition Oxiteno S.A. business and the significant judgements and complexities involved in determining the fair value of identifiable assets acquired and liabilities assumed, I considered accounting for that business combination as a key audit matter.

How the matter was addressed in the audit

My audit procedures applied to the significant business combination in 2022 included the following:

- Read the sale and purchase agreement and analysis memorandum of business combination prepared by the Group to understand key terms and conditions;
- Evaluated the assessment by the Group of the identification of all the identifiable assets acquired and liabilities assumed and consideration transferred, and testing the mathematical accuracy of calculation of goodwill or a gain on bargain purchase;
- Evaluated the assumptions and methodologies underpinning the valuations;
- Involved KPMG valuation specialist to assist in evaluating the financial parameters applied to the discount rate, identification of the intangible assets, valuation methodology used and calculation rationale;
- Involved KPMG valuation specialist to assist in evaluating the fair value of property, plant and equipment prepared by the Group's expert;
- Assessed the adequacy of the Group's disclosure in accordance with Thai Financial Reporting Standards.

Impairment assessment of cash-generating unit	
Refer to Note 14 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>At 31 December 2022, the Group identified that the impairment indicators existed in some of European Cash Generating Units (“CGUs”). Therefore, the Group performed impairment assessments for these CGUs by applying the value-in-use (discounted cash flow (“DCF”)) method to determine the recoverable amount of these CGUs.</p> <p>Due to the significant judgement and complexities involved in determining the future cash flows attributable to CGUs, I considered the measurement of the recoverable amount derived from the value in use as the key audit matter.</p>	<p>My audit procedures performed for impairment assessment at CGUs with impairment indication at reporting date included the following:</p> <ul style="list-style-type: none"> Assessed if the Group’s identification of the CGUs were appropriate and reviewed the performance of other CGUs to assess if other CGUs also had impairment indication; Evaluated the DCF provided by the Group and the Group’s assumptions applied in the value-in-use method against relevant documents and projections as well as externally derived data; Analysed historical information to support the precision in the Group’s forecasting process; Tested the principles and mathematical accuracy of the DCF and performed sensitivity analysis around the key assumptions; Evaluated the financial parameters applied to the discount rate; Assessed the adequacy of the Group’s disclosure in accordance with Thai Financial Reporting Standards.
Impairment assessment of goodwill	
Refer to Note 17 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>As at 31 December 2022, the Group had goodwill of Baht 17,888.2 million.</p> <p>The CGUs to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (DCF) method to determine the recoverable amount of each CGU to which goodwill belongs. Any shortfall of the recoverable amounts against the carrying amounts would be recognised as impairment losses.</p> <p>Due to the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the individual CGUs to which goodwill belongs, I considered the measurement of the recoverable amount as a key audit matter.</p>	<p>My audit procedures performed for impairment assessment of goodwill included the following:</p> <ul style="list-style-type: none"> Assessed if the Group’s identification of the CGU to which goodwill belongs were appropriate; Evaluated the DCF provided by the Group and the Group’s assumptions applied in the value-in-use method against relevant documents and projections as well as externally derived data; Analysed historical information to support the precision in the Group’s forecasting process; Tested the principles and mathematical accuracy of the DCF and performed sensitivity analysis around the key assumptions; Evaluated the financial parameters applied to the discount rate; Assessed the adequacy of the Group’s disclosure in accordance with Thai Financial Reporting Standards.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor’s report thereon. The annual report is expected to be made available to me after the date of this auditor’s report.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the correction be made.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting *unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.*

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.



(Yootapong Soontalinka)

Certified Public Accountant
Registration No. 10604

KPMG Phoomchai Audit Ltd.
Bangkok
24 February 2023

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

Assets	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Current assets					
Cash and cash equivalents	6	21,211,149	16,215,255	73,523	220,032
Current investments		533,189	240,503	-	-
Trade accounts receivable	7	55,580,273	53,171,894	-	-
Other receivables		2,707,953	3,294,585	719,028	763,186
Short-term loans to related parties and interest receivable from related parties	5	23,694	30,229	6,813,127	6,598,283
Inventories	8	115,872,264	88,978,968	-	-
Other current financial assets	38	1,312,646	913,843	43,504	1,157
Other current assets	9	18,466,669	14,013,833	157,408	99,338
Total current assets		215,707,837	176,859,110	7,806,590	7,681,996
Non-current assets					
Other non-current financial assets	38	6,685,487	983,276	-	-
Investments in subsidiaries	10	-	-	61,405,350	66,587,539
Investments in associate and joint ventures	11	3,729,053	3,488,727	-	-
Other long-term investments		335,996	114,348	-	-
Long-term loans to related parties	5	-	-	106,123,587	103,003,840
Property, plant and equipment	14	320,630,124	291,676,937	-	-
Right-of-use assets	15	12,393,396	11,450,241	-	-
Goodwill	17	17,888,189	17,410,642	-	-
Intangible assets other than goodwill	18	34,684,517	33,869,300	-	-
Deferred tax assets	35	4,540,503	2,657,019	-	-
Other non-current assets	19	7,283,289	3,318,640	1,034,089	-
Total non-current assets		408,170,554	364,969,130	168,563,026	169,591,379
Total assets		623,878,391	541,828,240	176,369,616	177,273,375

The accompanying notes form an integral part of the financial statements.

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Current liabilities					
Bank overdrafts and short-term loans from financial institutions	20	31,247,825	26,618,760	-	-
Trade accounts payable	21, 42	106,720,741	90,875,873	-	-
Current portion of long-term loans from financial institutions	20	28,501,962	9,587,605	2,536,088	771,511
Current portion of debentures	20	5,274,945	7,783,798	4,086,621	6,532,924
Current portion of lease liabilities	20	2,254,915	1,831,286	-	-
Income tax payable		2,899,301	3,029,659	-	-
Other current financial liabilities	38	2,142,122	237,517	-	-
Other current liabilities	22, 42	23,158,550	21,156,235	805,365	452,241
Total current liabilities		202,200,361	161,120,733	7,428,074	7,756,676
Non-current liabilities					
Long-term loans from financial institutions	20	102,464,129	101,076,195	-	8,439,452
Long-term loans from related party	5	-	-	8,000,000	6,000,000
Lease liabilities	20	8,645,371	8,511,974	-	-
Debentures	20	75,924,183	68,816,685	59,268,662	51,372,709
Deferred tax liabilities	35	19,529,088	19,902,549	167,836	152,642
Non-current provisions for employee benefits	23	6,172,824	7,499,690	-	-
Other non-current financial liabilities	38	625,544	2,331,901	-	61,999
Other non-current liabilities	4(iv)	7,431,509	1,565,085	-	-
Total non-current liabilities		220,792,648	209,704,079	67,436,498	66,026,802
Total liabilities		422,993,009	370,824,812	74,864,572	73,783,478

The accompanying notes form an integral part of the financial statements.

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Equity					
Share capital:	24				
Authorised share capital		5,670,702	5,666,010	5,670,702	5,666,010
Issued and paid-up share capital		5,614,552	5,614,552	5,614,552	5,614,552
Share premium:					
Share premium on ordinary shares		60,331,434	60,331,434	60,331,434	60,331,434
Hedging reserve		4,988,026	812,566	684,144	619,770
Translation reserve		(6,494,939)	(6,036,111)	-	-
Excess of cost over book value					
of acquired subsidiaries		(4,115,246)	(4,115,246)	-	-
Differences arising from common					
control transactions		(1,235,562)	(1,235,562)	-	-
Retained earnings					
Appropriated					
Legal reserve	25	9,112,061	6,508,016	567,070	566,601
Unappropriated		102,884,583	81,984,265	19,403,086	21,452,782
Subordinated perpetual debentures	26	14,904,758	14,904,758	14,904,758	14,904,758
Equity attributable to owners					
of the Company		185,989,667	158,768,672	101,505,044	103,489,897
Non-controlling interests	13	14,895,715	12,234,756	-	-
Total equity		200,885,382	171,003,428	101,505,044	103,489,897
Total liabilities and equity		623,878,391	541,828,240	176,369,616	177,273,375

The accompanying notes form an integral part of the financial statements.

Statement of income

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Income					
Revenue from sales of goods	27	656,266,448	468,108,318	-	-
Dividend income	5	-	-	10,934,704	7,363,503
Net foreign exchange gain		976,126	-	55,717	14,043
Other income	28	8,335,353	4,748,889	2,150,089	552,665
Total income		665,577,927	472,857,207	13,140,510	7,930,211
Expenses					
Cost of sales of goods	8, 29	544,321,267	383,127,953	-	-
Distribution costs	30	36,701,735	27,849,597	-	-
Administrative expenses	31	25,714,269	19,172,671	2,026,909	497,765
Impairment loss of property, plant and equipment, goodwill and other intangible assets	14, 17, 18	8,645,118	290,031	-	-
Impairment loss of an investment in subsidiary	10	-	-	5,182,189	-
Management benefit expenses	5, 32	478,861	321,021	30,880	17,720
Net foreign exchange loss		-	297,183	-	-
Total expenses		615,861,250	431,058,456	7,239,978	515,485
Profit from operating activities		49,716,677	41,798,751	5,900,532	7,414,726
Finance income		946,764	215,744	3,863,071	3,285,548
Finance costs	34	(10,495,196)	(7,120,662)	(2,836,891)	(2,481,582)
Reversal of expected credit loss (expected credit loss), net	7	(41,594)	(97,072)	-	10,671
Share of net profit (loss) of associate and joint ventures accounted for using equity method	11	(22,761)	160,235	-	-
Profit before tax expense		40,103,890	34,956,996	6,926,712	8,229,363
Tax expense	35	5,773,693	6,703,254	84,839	28,628
Profit for the year		34,330,197	28,253,742	6,841,873	8,200,735
Profit attributable to:					
Owners of the Company		31,006,084	26,288,027	6,841,873	8,200,735
Non-controlling interests	13	3,324,113	1,965,715	-	-
		34,330,197	28,253,742	6,841,873	8,200,735
Earnings per share					
Basic and diluted earnings per share <i>(in Baht)</i>	36	5.39	4.55	1.09	1.33

The accompanying notes form an integral part of the financial statements.

Statement of comprehensive income

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Profit for the year		34,330,197	28,253,742	6,841,873	8,200,735
Other comprehensive income					
Items that will or may be reclassified subsequently to profit or loss					
Exchange differences on translating financial statements		1,458,166	14,916,277	-	-
Net gain on cash flow hedges		4,338,196	1,420,286	80,468	74,323
Net loss on hedges of net investments in foreign operations		(2,106,888)	(2,845,836)	-	(13,857)
Income tax expense relating to items that will or may be reclassified subsequently to profit or loss		(201,389)	(109,952)	(16,094)	(12,093)
Total items that will or may be reclassified subsequently to profit or loss		3,488,085	13,380,775	64,374	48,373
Item that will not be reclassified subsequently to profit or loss					
Gain on remeasurements of defined benefit plans	23	1,736,303	755,641	-	-
Income tax expense relating to item that will not be reclassified subsequently to profit or loss		(306,446)	(157,271)	-	-
Total item that will not be reclassified subsequently to profit or loss		1,429,857	598,370	-	-
Other comprehensive income for the year, net of tax		4,917,942	13,979,145	64,374	48,373
Total comprehensive income for the year		39,248,139	42,232,887	6,906,247	8,249,108
Total comprehensive income attributable to:					
Owners of the Company		36,112,095	38,414,116	6,906,247	8,249,108
Non-controlling interests	13	3,136,044	3,818,771	-	-
		39,248,139	42,232,887	6,906,247	8,249,108

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

	Consolidated financial statements													
	Retained earnings				Other components of equity						Equity attributable to owners of the Company	Non-controlling interests	Total equity	
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated reserve	Subordinated perpetual debentures	Translation reserve	Hedging reserve	Excess of cost over book value of acquired subsidiaries	Differences arising from common control transactions	Total other components of equity				
Note														
Year ended 31 December 2021														
Balance at 1 January 2021														
	5,614,552	60,331,434	5,303,490	62,257,320	14,904,758	(16,361,922)	(400,807)	(3,758,268)	(1,235,562)	(21,756,559)	126,654,995	8,952,790	135,607,785	
Transactions with owners, recorded directly in equity														
Distribution to owners														
Dividends	-	-	-	(5,193,461)	-	-	-	-	-	-	(5,193,461)	(410,879)	(5,604,340)	
Total distribution to owners	-	-	-	(5,193,461)	-	-	-	-	-	-	(5,193,461)	(410,879)	(5,604,340)	
Change in ownership interests in subsidiaries														
Acquisition of non-controlling interests without a change in control	-	-	-	-	-	-	(356,978)	(356,978)	-	(356,978)	(356,978)	(125,926)	(482,904)	
Total change in ownership interests in subsidiaries	-	-	-	-	-	-	(356,978)	(356,978)	-	(356,978)	(356,978)	(125,926)	(482,904)	
Total transactions with owners, recorded directly in equity	-	-	-	(5,193,461)	-	-	(356,978)	(356,978)	-	(356,978)	(5,550,439)	(536,805)	(6,087,244)	
Comprehensive income for the year														
Profit	-	-	-	26,288,027	-	-	-	-	-	-	26,288,027	1,965,715	28,253,742	
Other comprehensive income	-	-	-	586,905	-	10,325,811	1,213,373	-	-	11,539,184	12,126,089	1,853,056	13,979,145	
Total comprehensive income for the year	-	-	-	26,874,932	-	10,325,811	1,213,373	-	-	11,539,184	38,414,116	3,818,771	42,232,887	
Coupon payment on subordinated perpetual debentures	-	-	-	(750,000)	-	-	-	-	-	-	(750,000)	-	(750,000)	
Transfer to legal reserve	-	-	1,204,526	(1,204,526)	-	-	-	-	-	-	-	-	-	
Balance at 31 December 2021	5,614,552	60,331,434	6,508,016	81,984,265	14,904,758	(6,036,111)	812,566	(4,115,246)	(1,235,562)	(10,574,353)	158,768,672	12,234,756	171,003,428	

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

	Consolidated financial statements													
	Retained earnings			Other components of equity										
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated	Subordinated perpetual debentures	Translation reserve	Hedging reserve	Excess of cost over book value of acquired subsidiaries	Differences arising from common control transactions	Total other components of equity	Equity attributable to owners of the Company	Non-controlling interests	Total equity	
	Note													
Year ended 31 December 2022														
Balance at 1 January 2022		5,614,552	60,331,434	6,508,016	81,984,265	14,904,758	(6,036,111)	812,566	(4,115,246)	(1,235,562)	(10,574,353)	158,768,672	12,234,756	171,003,428
Transactions with owners, recorded directly in equity														
<i>Distribution to owners</i>														
Dividends	37	-	-	-	(8,141,100)	-	-	-	-	-	(8,141,100)	-	(541,100)	(8,682,200)
Total distribution to owners					(8,141,100)						(8,141,100)		(541,100)	(8,682,200)
<i>Change in ownership interests in subsidiaries</i>														
Acquisition of non-controlling interests through business combination	4	-	-	-	-	-	-	-	-	-	-	-	66,015	66,015
Total change in ownership interests in subsidiaries													66,015	66,015
Total transactions with owners, recorded directly in equity					(8,141,100)						(8,141,100)		(475,085)	(8,616,185)
Comprehensive income (expense) for the year														
Profit		-	-	-	31,006,084	-	-	-	-	-	-	31,006,084	3,324,113	34,330,197
Other comprehensive income (expense)		-	-	-	1,389,379	-	(458,828)	4,175,460	-	-	3,716,632	5,106,011	(188,069)	4,917,942
Total comprehensive income (expense) for the year					32,395,463		(458,828)	4,175,460			3,716,632	36,112,095	3,136,044	39,248,139
Coupon payment on subordinated perpetual debentures	26	-	-	-	(750,000)	-	-	-	-	-	(750,000)	-	-	(750,000)
Transfer to legal reserve		-	-	2,604,045	(2,604,045)	-	-	-	-	-	-	-	-	-
Balance at 31 December 2022		5,614,552	60,331,434	9,112,061	102,884,583	14,904,758	(6,494,939)	4,988,026	(4,115,246)	(1,235,562)	(6,857,721)	185,985,667	14,895,715	200,885,382

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

	Separate financial statements							Total equity
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated Retained earnings	Subordinated perpetual debentures	Hedging reserve	Other component of equity	
Note								
Year ended 31 December 2021								
Balance at 1 January 2021	5,614,552	60,331,434	566,601	19,195,508	14,904,758	571,397	101,184,250	
Transaction with owners, recorded directly in equity								
<i>Distribution to owners of the Company</i>								
Dividends	-	-	-	(5,193,461)	-	-	(5,193,461)	
<i>Total distribution to owners of the Company</i>	-	-	-	(5,193,461)	-	-	(5,193,461)	
Comprehensive income for the year								
Profit	-	-	-	8,200,735	-	-	8,200,735	
Other comprehensive income	-	-	-	-	-	48,373	48,373	
Total comprehensive income for the year	-	-	-	8,200,735	-	48,373	8,249,108	
Coupon payment on subordinated perpetual debentures	-	-	-	(750,000)	-	-	(750,000)	
Balance at 31 December 2021	5,614,552	60,331,434	566,601	21,452,782	14,904,758	619,770	103,489,897	

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

	Separate financial statements							Total equity
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated Retained earnings	Subordinated perpetual debentures	Hedging reserve	Other component of equity	
Year ended 31 December 2022								
Balance at 1 January 2022	5,614,552	60,331,434	566,601	21,452,782	14,904,758	619,770	103,489,897	
Transaction with owners, recorded directly in equity								
<i>Distribution to owners of the Company</i>								
Dividends	-	-	-	(8,141,100)	-	-	(8,141,100)	
Total distribution to owners of the Company	-	-	-	(8,141,100)	-	-	(8,141,100)	
Comprehensive income for the year								
Profit	-	-	-	6,841,873	-	-	6,841,873	
Other comprehensive income	-	-	-	-	-	64,374	64,374	
Total comprehensive income for the year	-	-	-	6,841,873	-	64,374	6,906,247	
Transfer to legal reserve	-	-	469	(469)	-	-	-	
Coupon payment on subordinated perpetual debentures	-	-	-	(750,000)	-	-	(750,000)	
Balance at 31 December 2022	5,614,552	60,331,434	567,070	19,403,086	14,904,758	684,144	101,505,044	

Statement of cash flows

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December 2022	2021*	Year ended 31 December 2022	2021*
<i>(in thousand Baht)</i>					
Cash flows from operating activities					
Profit for the year		34,330,197	28,253,742	6,841,873	8,200,735
<i>Adjustments to reconcile profit to cash receipts (payments)</i>					
Tax expense	35	5,773,693	6,703,254	84,839	28,628
Finance costs	34	10,495,196	7,120,662	2,836,891	2,481,582
Depreciation	14, 15	22,893,326	18,633,764	-	-
(Reversal of) expected credit loss, net	7	41,594	97,072	-	(10,671)
Amortisation of intangible assets and other assets		2,828,078	3,102,925	-	-
Employee benefits expense related to defined benefit plans	23	950,555	926,374	-	-
Unrealised foreign exchange (gain) loss, net		1,042,524	(798,026)	(38,575)	(42,782)
Unrealised gain on fair value adjustment of derivatives, net		(152,203)	(24,850)	-	-
Share of net (profit) loss of associate and joint ventures accounted for using equity method, net of tax	11	22,761	(160,235)	-	-
Impairment loss of property, plant and equipment, goodwill and other intangible assets	14, 17, 18	8,645,118	290,031	-	-
Impairment loss on investment in subsidiary	10	-	-	5,182,189	-
Provision for losses on inventories devaluation, net	8	2,098,472	238,108	-	-
(Gain) loss on disposal/written-off of property, plant and equipment, net		(120,690)	142,442	-	-
Finance income		(946,764)	(215,744)	(3,863,071)	(3,285,548)
Dividend income	5	-	-	(10,934,704)	(7,363,503)
		<u>87,901,857</u>	<u>64,309,519</u>	<u>109,442</u>	<u>8,441</u>
<i>Changes in operating assets and liabilities</i>					
Trade accounts receivable		5,971,192	(19,559,418)	-	-
Inventories		(15,779,619)	(35,706,176)	-	-
Other current assets		321,008	(5,464,840)	(19,591)	105,092
Other non-current assets		1,176,345	(853,720)	-	-
Trade accounts payable		6,731,266	31,260,369	-	-
Repayment of employee benefits related to defined benefit plans		(642,992)	(752,953)	-	-
Other current liabilities		1,708,668	3,006,541	297,120	30,632
Other non-current liabilities		(498,088)	53,709	-	-
Net cash generated from operating		<u>86,889,637</u>	<u>36,293,031</u>	<u>386,971</u>	<u>144,165</u>
Taxes paid		<u>(8,908,533)</u>	<u>(2,521,157)</u>	<u>(99,292)</u>	<u>(19,654)</u>
Net cash from operating activities		<u>77,981,104</u>	<u>33,771,874</u>	<u>287,679</u>	<u>124,511</u>

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated		Separate	
		financial statements		financial statements	
		Year ended 31 December		Year ended 31 December	
		2022	2021*	2022	2021*
<i>(in thousand Baht)</i>					
Cash flows from investing activities					
Net cash outflow on acquisitions of businesses	4	(46,232,915)	(2,363,140)	-	-
Cash outflow on payment of payable for acquiring joint operation	22	(288,730)	(151,460)	-	-
Cash outflow on additional investment in joint ventures	11	(188,042)	(216,605)	-	-
Cash outflow on acquisition of non-controlling interest	5	-	(624,293)	-	-
(Acquisition of) proceeds from sale of other investments		(507,923)	193,184	-	-
Proceeds from sale of property, plant and equipment		558,551	330,541	-	-
Acquisition of property, plant and equipment and capital expenditure prepayment		(25,631,343)	(19,959,090)	(751,795)	-
Proceeds from sale of intangible assets		90,100	15,643	-	-
Acquisition of intangible assets		(2,929,611)	(3,239,199)	-	-
Loans to subsidiaries, net		-	-	(3,008,024)	(12,912,892)
Loans to joint ventures, net		6,575	(61,328)	-	-
Dividend received	5	-	-	10,934,704	7,363,503
Dividend received from joint ventures	11	19,953	27,214	-	-
Finance income received		945,071	220,092	3,632,319	3,641,196
Net cash from (used in) investing activities		(74,158,314)	(25,828,441)	10,807,204	(1,908,193)
Cash flows from financing activities					
Proceeds from bank overdrafts and loans with non-related parties	20	409,070,044	330,010,421	-	4,341,910
Repayment of bank overdrafts and loans with non-related parties	20	(389,332,180)	(327,626,573)	(6,775,996)	(4,458,206)
Proceeds from long-term loan from a related party	20	-	-	2,000,000	6,000,000
Proceeds from debentures, net of debenture issuance costs	20	11,980,430	9,980,766	11,980,430	9,980,766
Repayment of debentures	20	(7,756,431)	(7,705,824)	(6,545,000)	(6,500,000)
Payment of lease liabilities		(2,899,110)	(2,304,875)	-	-
Dividends paid to owners of the Company	37	(8,140,928)	(5,193,309)	(8,140,928)	(5,193,309)
Dividends paid to non-controlling interests		(541,100)	(410,879)	-	-
Finance costs paid		(9,731,510)	(6,787,341)	(2,687,088)	(2,416,488)
Deferred financing cost paid		(383,333)	(45,319)	(322,810)	-
Coupon payment on subordinated perpetual debentures	26	(750,000)	(750,000)	(750,000)	(750,000)
Net cash from (used in) financing activities		1,515,882	(10,832,933)	(11,241,392)	1,004,673
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates		5,338,672	(2,889,500)	(146,509)	(779,009)
Effect of exchange rate changes on cash and cash equivalents		(342,778)	156,231	-	-
Net increase (decrease) in cash and cash equivalents		4,995,894	(2,733,269)	(146,509)	(779,009)
Cash and cash equivalents at 1 January		16,215,255	18,948,524	220,032	999,041
Cash and cash equivalents at 31 December	6	21,211,149	16,215,255	73,523	220,032

* Certain amounts have been reclassified to conform with current year presentation.

The accompanying notes form an integral part of the financial statements.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

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Notes to the financial statements

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These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorised for issue by the Board of Directors on 24 February 2023.

1 General information

Indorama Ventures Public Company Limited, “the Company” or “IVL”, is incorporated in Thailand and was listed on the Stock Exchange of Thailand in February 2010. The Company’s registered office at 75/102, Ocean Tower II, 37th Floor, Sukhumvit 19, Asoke Road, Klongtoeynua, Wattana, Bangkok, Thailand.

The immediate and ultimate parent companies during the financial year were Indorama Resources Limited, incorporated in Thailand, and Canopus International Limited, incorporated in Mauritius, respectively.

The principal activities of the Company, its subsidiaries, and joint operation (collectively referred to as the “Group”) are the manufacture and distribution of Polyethylene Terephthalate (“PET”), Purified Terephthalic Acid (“PTA”), Paraxylene (“PX”), recycling, Purified Isophthalic Acid (“PIA”), Naphthalene Dicarboxylate (“NDC”), PET preforms and packaging, Integrated EG, Integrated purified EO, PO/MTBE, Integrated Surfactants comprising EOA, LAB and others, Fibers including Polyester, Rayon, Nylon, Polypropylene, composites and worsted wool fibers products. Details of the Company’s subsidiaries, associate, joint ventures and joint operation as at 31 December 2022 and 2021 are given in notes 5, 11, and 12.

2 Basis of preparation of the financial statements

The financial statements are prepared in accordance with Thai Financial Reporting Standards (“TFRS”), guidelines promulgated by the Federation of Accounting Professions and applicable rules and regulations of the Thai Securities and Exchange Commission. The financial statements are presented in Thai Baht, which is the Company’s functional currency. The accounting policies, described in note 3, have been applied consistently to all periods presented in these financial statements.

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of the Group’s/Company’s accounting policies. Actual results may differ from these estimates. Estimates and underlying assumptions that are described in note 3 are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

3 Significant accounting policies

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries and joint operations (collectively referred to as the “Group”) and the Group’s interests in associate and joint ventures.

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries

For the year ended 31 December 2022

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree. In addition, when there is a change in the Group's interest in a subsidiary that does not result in a loss of control, any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received from the acquisition or disposal of the non-controlling interests with no change in control is accounted for as other surplus/deficit in shareholders' equity.

When the Group loses control over a subsidiary, it derecognises the assets and liabilities, any related non-controlling interests and other components of equity of the subsidiary. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement.

Investment in joint operation is accounted for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the TFRSs applicable to the particular assets, liabilities, revenues and expenses.

Associate is an entity in which the Group has significant influence, but not control or joint control, over the financial and operating policies.

A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

The Group recognised investments in associate and joint ventures using the equity method in the consolidated financial statements. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's dividend income and share of the profit or loss and other comprehensive income ("OCI") of equity-accounted investees, until the date on which significant influence or joint control ceases.

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated on consolidation. Unrealised gains arising from transactions with associate and joint ventures are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

Business combinations

The Group applies the acquisition method when the Group assesses that the acquired set of activities and assets include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create an output. The acquisition date is the date on which control is transferred to the Group, other than business combinations with entities under common control. Expenses in connection with a business combination are recognised as incurred.

Goodwill is measured at the acquisition date as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree, less net fair value of the identifiable assets acquired and liabilities assumed. Any gain on bargain purchase is recognised in profit or loss immediately.

Consideration transferred includes assets transferred, any contingent consideration and equity interests issued by the Group.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Any contingent consideration is measured at fair value at the date of acquisition, and remeasured at fair value at each reporting date. Subsequent changes in the fair value are recognised in profit or loss.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group estimates provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

When a business combination is achieved in stages, the Group's previously held equity interest in the acquiree is remeasured to its acquisition-date fair value and the resulting gain or loss, if any, is recognised in profit or loss or other comprehensive income. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognised in other comprehensive income are recognised as would be required if that interest were disposed of.

Business combination under common control are accounted for using a method similar to the pooling of interest method, by recognising assets and liabilities of the acquired businesses at their carrying amounts in the consolidated financial statements of the ultimate parent company at the transaction date. The difference between the carrying amount of the acquired net assets and the consideration transferred is recognised as surplus or deficit from business combinations under common control in shareholder's equity. The surplus or deficit will be written off upon divestment of the businesses acquired. The results from operations of the acquired businesses will be included in the consolidated financial statements of the acquirer from the beginning of the comparative period or the moment the businesses came under common control, whichever date is later, until control ceases.

(b) Investments in subsidiaries

Investments in subsidiaries in the separate financial statements are measured at cost less allowance for impairment losses. Dividend income is recognised in profit or loss on the date on which the Company's right to receive payment is established. If the Company disposes of part of its investment, the deemed cost of the part sold is determined using the weighted average method. Gains and losses on disposal of the investments are recognised in profit or loss.

(c) Foreign currencies

Transactions in foreign currencies including non-monetary assets and liabilities denominated in foreign currencies are translated to the respective functional currencies of each entity in the Group at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated at the exchange rate at the reporting date. Non-monetary assets and liabilities measured at fair value in foreign currencies are translated at the exchange rates at the dates that fair value was determined.

Foreign currency differences are generally recognised in profit or loss. However, foreign currency differences arising from the translation of the following items are recognised in other comprehensive income:

- a financial liability designated as a hedge of the net investment in a foreign operation to the extent that the hedge is effective; and
- qualifying cash flow hedges to the extent the hedge is effective.

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Foreign operations

Goodwill, gain on bargain purchase and fair value adjustments arising on the acquisition of foreign operations at the acquisition date are initially translated to Thai Baht at the exchange rates at the dates that fair value was determined.

The assets and liabilities of foreign operations, including the carrying amount of the goodwill and fair value adjustments arising on acquisition, are translated to Thai Baht at the exchange rates at the reporting date. The revenues and expenses of foreign operations are translated to Thai Baht at rates approximating the exchange rates at the dates of the transactions.

Foreign exchange differences and the effective portion of any foreign currency differences arising from hedges of a net investment in a foreign operation (see note 3(d.4)) are recognised in other comprehensive income and accumulated in the translation reserve until disposal of the investment, except to the extent that the translation difference is allocated to non-controlling interests.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the translation reserve in equity until disposal of the investment.

(d) Financial instruments

(d.1) Classification and measurement

Debt securities issued by the Group/Company are initially recognised when they are originated. Other financial assets and financial liabilities (except trade accounts receivable (see note 3(f)) are initially recognised when the Group/Company becomes a party to the contractual provisions of the instrument, and measured at fair value.

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value through other comprehensive income (FVOCI); or FVTPL. Financial assets are not reclassified subsequent to their initial recognition unless the Group/Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified prospectively from the reclassification date.

On initial recognition, financial liabilities are classified as measured at amortised cost using the effective interest method or FVTPL. Interest expense, foreign exchange gains and losses and any gain or loss on derecognition are recognised in profit or loss.

Financial assets measured at amortised costs are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by expected credit losses. Interest income, foreign exchange gains and losses, expected credit loss and any gain or loss on derecognition are recognised in profit or loss.

Notes to the financial statements

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(d.2) Derecognition and offset

The Group/Company derecognises a financial asset when the contractual rights to receive the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group/Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Group/Company derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group/Company also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

The difference between the carrying amount extinguished and the consideration received or paid is recognised in profit or loss.

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group/Company currently has a legally enforceable right to set off the amounts and the Group/Company intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(d.3) Derivatives

Derivatives are recognised at fair value and remeasured at fair value at each reporting date. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss, except where the derivatives qualify for cash flow hedge accounting or hedges of net investment in a foreign operation, in which case recognition of any resultant gain or loss depends on the nature of the item being hedged (see note 3(d.4)). Embedded derivatives are separated from the host contract and accounted for separately if the host contract is not a financial asset and certain criteria are met.

(d.4) Hedging

At inception of designated hedging relationships, the Group/Company documents the risk management objective and strategy for undertaking the risk, the economic relationship between the hedged item and the hedging instrument, including consideration of the hedge effectiveness at the inception of the hedging relationship and throughout the remaining period to determine the existence of economic relationship between the hedged item and the hedging instrument.

From 1 January 2022, the Group has adopted the amendments in accordance with TFRS 9 Financial Instruments and TFRS 7 Disclosure of Financial Instruments, which apply to transactions directly affected by interest rate benchmark reform (IBOR). The Group is currently in the process of amending contractual terms in order to response to IBOR reform.

Cash flow hedges

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in OCI and accumulated in the hedging reserve. Any ineffective portion of changes in the fair value of the derivative is recognised immediately in profit or loss.

The Group/Company designates only the change in fair value of the spot element of forward exchange contracts as the hedging instrument in the cash flow hedging relationships. The change in fair value of the forward element of forward exchange contracts (forward points) is recognised in a cash flow hedging reserve within equity.

Notes to the financial statements

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When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the cash flow hedging reserve is included directly in the initial cost of the non-financial item when it is recognised.

For all other hedged forecast transactions, the amount accumulated in the cash flow hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the cash flow hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non-financial item, it is included in the non-financial item's cost on its initial recognition or, for other cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the cash flow hedging reserve are immediately reclassified to profit or loss.

Net investment hedges

When a derivative instrument or a non-derivative financial liability is designated as the hedging instrument, the effective portion of, for a derivative changes in the fair value of the hedging instrument and, for a non-derivative, foreign exchange gains and losses is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion is recognised immediately in profit or loss. The amount recognised in OCI is reclassified to profit or loss as a reclassification adjustment on disposal of the foreign operation.

(d.5) Impairment of financial assets other than trade accounts receivable

The Group/Company recognises allowances for expected credit losses (ECLs) on financial assets measured at amortised cost and loan commitments issued which are not measured at FVTPL.

The Group/Company recognises ECLs equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or credit-impaired financial assets, in which case the loss allowance is measured at an amount equal to lifetime ECLs.

ECLs are a probability-weighted estimate of credit losses based on forward-looking and historical experience. Credit losses are measured as the present value of all cash shortfalls discounted by the effective interest rate of the financial asset.

The Group/Company considers a financial asset to have low credit risk when its credit rating is equivalent to the globally understood definition of 'investment grade'. The Group/Company recognises ECLs for low credit risk financial asset as 12-month ECLs.

The Group/Company assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due, significant deterioration in credit rating, significant deterioration in the operating results of the debtor and existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group/Company.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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The Group/Company considers a financial asset to be in default when:

- the debtor is unlikely to pay its credit obligations to the Group/Company in full, without recourse by the Group/Company takes action such as realising security (if any is held); or
- the financial asset is more than 12 months past due.

(d.6) Write-off

The gross carrying amount of a financial asset is written off when the Group/Company has no reasonable expectations of recovering. Subsequent recoveries of an asset that was previously written off, are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

(d.7) Interest

Interest income and expense is recognised in profit or loss using the effective interest method. In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortised cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortised cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

(e) Cash and cash equivalents

Cash and cash equivalents comprise cash balances, call deposits and highly liquid short-term investments which have maturities of three months or less from the date of acquisition.

(f) Trade accounts receivable

A trade receivable is recognised when the Group/Company has an unconditional right to receive consideration. A trade receivable is measured at transaction price less allowance for expected credit loss. Bad debts are written off when incurred.

The Group/Company estimates lifetime expected credit losses (ECLs), using a provision matrix to find the ECLs rates. This method groups the debtors based on shared credit risk characteristics and past due status, taking into account historical credit loss data, adjusted for factors that are specific to the debtors and an assessment of both current economic conditions and forward-looking general economic conditions at the reporting date.

(g) Inventories

Inventories are measured at the lower of cost and net realisable value. Cost is calculated using the weighted average cost principle. Cost includes direct costs incurred in acquiring the inventories. In the case of manufactured inventories and work-in-progress, cost includes an appropriate share of production overheads based on normal operating capacity. Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

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(h) Property, plant and equipment

Property, plant and equipment are measured at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes capitalised borrowing costs, and the costs of dismantling and removing the items and restoring the site on which they are located including transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

Differences between the proceeds from disposal and the carrying amount of property, plant and equipment are recognised in profit or loss.

Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item when the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

Depreciation

Depreciation is calculated on a straight-line basis over the estimated useful lives of each component of an asset and recognised in profit or loss. No depreciation is provided on freehold land and assets under construction.

The estimated useful lives are as follows:

Land improvements	3-50 years
Buildings and building improvements	2-60 years
Machinery and equipment	2-50 years
Office furniture, fixtures and equipment	2-25 years
Transportation equipment	3-27 years
Stores and spares	1.5-15 years

(i) Goodwill

Goodwill is measured at cost less accumulated impairment losses. In respect of equity-accounted investee, the carrying amount of goodwill is included in the carrying amount of the investment. Internally generated goodwill and brands are recognised in profit or loss as incurred.

(j) Research and development

Development expenditure is capitalised only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends to and has sufficient resources to complete development and to use or sell the asset. Other development expenditure and expenditure on research activities are recognised in profit or loss as incurred.

Capitalised development expenditure is measured at cost less accumulated amortisation and impairment losses. The expenditure cost includes the cost of materials, direct labour, overhead costs that are directly attributable to preparing the asset for its intended use, and borrowing costs. Subsequent expenditure is capitalised only when it increases the future economic benefits.

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(k) Other intangible assets

Other intangible assets that have indefinite useful lives are measured at cost less impairment losses. Other intangible assets are measured at cost less accumulated amortisation and impairment losses. Subsequent expenditure is capitalised only when it will generate future economic benefits. Amortisation is calculated on a straight-line basis over the estimated useful lives of intangible assets and recognised in profit or loss.

The estimated useful lives are as follows:

Rights acquired	5-50	years	
Supplier contract and relationships	3-20	years,	Indefinite
Software licenses	1-37	years	
Technology licenses and knowhow	1-50	years	
Customer contracts and relationships	1.5-40	years	
Trade name and trademarks	1-21.5	years,	Indefinite
Chemicals exchange contract	19	years	
Capitalised development expenditure	3-10	years	
Environment rights	1-6	years	

(l) Leases

At inception of a contract, the Group assesses that a contract is, or contains, a lease when it conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

As a lessee

At commencement or on modification of a contract, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices of each component. For the leases of property, the Group has elected not to separate non-lease components and accounted for the lease and non-lease components wholly as a single lease component.

The Group recognises a right-of-use asset and a lease liability at the lease commencement date, except for leases of low-value assets and short-term leases which are recognised as expenses on a straight-line basis over the respective lease terms.

Right-of-use asset is measured at cost, less any accumulated depreciation and impairment loss, and adjusted for any remeasurements of lease liability. The cost of right-of-use asset includes the initial amount of the lease liability adjusted for any prepaid lease payments, plus any initial direct costs incurred and an estimate of restoration costs, less any lease incentives received. Depreciation is charged to profit or loss on a straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment.

The lease liability is initially measured at the present value of all lease payments that shall be paid under the lease. The Group uses the incremental borrowing rate to discount the lease payments to the present value. The Group determines its incremental borrowing rate by obtaining interest rates from various external financing sources and makes certain adjustments to reflect the terms of the lease and type of the asset leased.

The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a lease modification, or a change in the assessment of options specified in the lease. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

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As a lessor

At inception or on modification of a contract, the Group allocates the consideration in the contract to each component on the basis of their relative standalone selling prices.

At lease inception, the Group considers to classify a lease that transfers substantially all of the risks and rewards incidental to ownership of the underlying asset to lessees as a finance lease. A lease that does not meet this criteria is classified as an operating lease.

The Group recognises finance lease receivables at the net investment of the leases, which includes the present value of the lease payments, and any unguaranteed residual value, discounted using the interest rate implicit in the lease. Finance lease income reflects a constant periodic rate of return on the Group's net investment outstanding in respect of the leases.

The Group recognises lease payments received under operating leases in profit or loss on a straight-line basis over the lease term as part of other income. Initial direct costs incurred in arranging an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same basis as rental income. Contingent rents are recognised as other income in the accounting period in which they are earned.

The Group estimates lifetime expected credit losses (ECLs), using a provision matrix to find ECLs rate. This method groups the lease receivables based on shared credit risk characteristics and past due status, taking into account historical credit loss data, adjusted for factors that are specific to the debtors and an assessment of both current economic conditions and forward-looking general economic conditions at the reporting date. The Group derecognises the lease receivables as disclosed in note 3(d.2).

(m) Impairment of non-financial assets

The carrying amounts of the Group's/Company's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised in profit or loss if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount.

The recoverable amount is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

An impairment loss of asset recognised in prior periods is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss in respect of goodwill is not reversed. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(n) Employee benefits

Defined contribution plans

Obligations for contributions to the Group's defined contribution plans are expensed as the related service is provided.

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Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods. The defined benefit obligations is discounted to the present value, which performed annually by a qualified actuary using the projected unit credit method.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognised immediately in OCI. The Group determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognised in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognised in profit or loss in the period in which they arise.

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognises costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(o) Share-based payments

The grant-date fair value of equity-settled share-based payment awards granted to employees is generally recognised as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognised as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognised is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

The fair value of the amount payable to employees in respect of share appreciation rights, which are settled in cash, is recognised as an expense with a corresponding increase in liabilities, over the period that the employees become unconditionally entitled to payment. The liability is remeasured at each reporting date and at settlement date. Any changes in the fair value of the liability are recognised as personnel expenses in profit or loss.

(p) Provisions

A provision is recognised if, as a result of a past event, the Group/Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as a finance cost.

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Onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Group/Company from a contract are lower than the unavoidable cost of meeting the Group's/Company's obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Group/Company recognises any impairment loss on the assets associated with that contract.

(q) Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date in the principal or, in its absence, the most advantageous market to which the Group/Company has access at that date. The fair value of a liability reflects its non-performance risk.

When measuring the fair value of an asset or liability, the Group/Company uses observable market data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1: quoted prices in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: inputs for the asset or liability that are based on unobservable input.

The Group/Company recognises transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

If an asset or a liability measured at fair value has a bid price and an ask price, then the Group/Company measures assets and asset positions at a bid price and liabilities and liability positions at an ask price.

The best evidence of the fair value of a financial instrument on initial recognition is normally the transaction price - i.e. the fair value of the consideration given or received. If the Group/Company determines that the fair value on initial recognition differs from the transaction price, the financial instrument is initially measured at fair value adjusted for the difference between the fair value on initial recognition and the transaction price and the difference is recognised in profit or loss immediately. However, for the fair value categorised as level 3, such difference is deferred and will be recognised in profit or loss on an appropriate basis over the life of the instrument or until the fair value level is transferred or the transaction is closed out.

(r) Subordinated perpetual debentures

Subordinated perpetual debentures are recognised as equity when the Company has the sole right and discretion to unconditionally defer principal repayment, interest and cumulative interest payment without time and deferral amount limitation. Accordingly, any coupon payments are accounted for as dividends and are recognised directly in equity at the time the payment obligation arises. This is because the coupon payments are discretionary and relate to equity. Coupon payments consequently do not have any impact in profit or loss. Coupon payments are recognised in the cash flow statement in the same way as dividends to ordinary shareholders.

When subordinated perpetual debentures recognised as equity are repurchased, the amount of the consideration paid, which includes directly attributable costs, is recognised as a deduction from equity.

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(s) Revenue from contracts with customers

(1) Revenue recognition

Revenue is recognised when a customer obtains control of the goods or services in an amount that reflects the consideration to which the Group/Company expects to be entitled, excluding those amounts collected on behalf of third parties, and value added tax and is after deduction of any trade discounts and volume rebates.

Revenue from sales of goods is recognised on the date on which the goods are delivered to the customers.

Revenue for rendering of services is recognised over time based on stage of completion/as the services are provided. The stage of completion is assessed based on cost-to-cost method. The related costs are recognised in profit or loss when they are incurred.

Guarantee and royalty income are recognised over time as the services are provided.

Long-term advance received from customers is recognised as revenue when the Group transferred control over the goods or services to the customers. For the advances that contain a significant financing component, they include the interest expense accreted on the contract liability under the effective interest method. The Group/Company uses the practical expedient which is to not adjust the consideration for any effects of a significant financing component for the contract for which the period is 12 months or less.

(2) Contract balances

Contract liabilities including short-term and long-term advances received from customers are the obligation to transfer goods or services to the customer. The contract liabilities including short-term and long-term advances received from customers are recognised when the Group receives or has an unconditional right to receive non-refundable consideration from the customer before the Group recognises the related revenue.

A refund liability is the obligation to refund some or all of the consideration received from the customer and is measured at the amount the Group ultimately expects it will have to return to the customer. The refund liability is reassessed at each reporting date and the Group makes a corresponding change to the amount of revenue recognised.

(t) Income tax

Income tax expense for the year comprises current and deferred tax, which is recognised in profit or loss except to the extent that it relates to a business combination, or items recognised directly in equity or in other comprehensive income.

Current tax is recognised in respect of the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and joint ventures to the extent that it is probable that they will not reverse in the foreseeable future.

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The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group/Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities, using tax rates enacted or substantively enacted at the reporting date. Current deferred tax assets and liabilities are offset in the separate financial statements.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(u) *Earnings per share*

Basic earnings per share EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company less coupon payment on subordinated perpetual debentures whether it has been accrued or not, by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

Diluted EPS is determined by adjusting the profit or loss attributable to ordinary shareholders of the Company and the weighted average number of ordinary shares outstanding, adjusted for own shares held, for the effects of all dilutive potential ordinary shares.

(v) *Related parties*

A related party is a person or entity that has direct or indirect control or joint control, or has significant influence over the financial and managerial decision-making of the Group/Company; a person or entity that is under common control or under the same significant influence as the Group/Company; or a person or entity over which the Group/Company has direct or indirect control or joint control or has significant influence over the financial and managerial decision-making.

(w) *Segment reporting*

Segment results that are reported to the Group's chief operating decision maker include items directly attributable to a segment as well as those that can be allocated on a reasonable basis. Unallocated items comprise mainly corporate assets (primarily the Company's headquarters and international business center), head office and international business center expenses, and tax assets and liabilities.

4 Acquisitions of businesses

Goodwill

The goodwill arising from acquisitions occurring in the years ended 31 December 2022 and 2021 is as following:

	Note	2021 (in thousand Baht)
Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex Services, S. de R.L. de C.V., Mexico	4(i)	-
Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries, USA	4(ii)	274,524
Total goodwill		274,524

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	Note	2022 (in thousand Baht)
UCY Polymers CZ s.r.o., Czech Republic	4(iii)	72,148
Oxiteno S.A. - Indústria e Comércio, Brazil	4(iv)	-
Ngoc Nghia Industry - Service - Trading Joint Stock Company, Vietnam	4(v)	553,953
Filatura Tollegno 1900 S.r.l., Italy	4(vi)	-
Total goodwill		626,101

(i) **Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex Services, S. de R.L. de C.V., Mexico**

On 19 April 2021, Indorama Ventures Polymers Mexico, S. de R.L. de C.V. (“IVPM”), indirect subsidiary, acquired the remaining 49% shareholdings in Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex Services, S. de R.L. de C.V. (“EcoMex”) from Mario Martinez as per Equity quotas sale and purchase agreement for a cash consideration of USD 7.6 million (Baht 237.4 million). The partial of payment and the transfer of ownership of the remaining 49% shareholdings in EcoMex took place on 19 April 2021. The transaction is accounted for as a business combination.

The acquiree’s net assets at the date of obtaining control comprised of the following:

<i>Identifiable assets acquired and liabilities assumed</i>	Note	Fair values as at 19 April 2021 (in thousand Baht)
Cash and cash equivalents		4,917
Inventories		61,440
Trade receivables		1,386
Property, plant and equipment	14	679,791
Right-of-use assets	15	9,269
Intangible assets	18	159,158
Deferred tax assets, net	35	40,013
Short-term loans from financial institution	20	(75,750)
Short-term loans from related parties		(174,820)
Accounts payable		(51,651)
Lease liabilities		(5,410)
Long-term loan from financial institution	20	(162,446)
Long-term loan from related party		(156,966)
Other assets/(liabilities), net		38,255
Total identifiable net assets received		367,186
Fair value of previously held equity interest		(129,785)
Purchase consideration transferred		237,401
Consideration payable		(92,382)
Cash acquired		(4,917)
Net cash outflows		140,102

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The loss recognised as a result of remeasuring to fair value of the previously held equity interest in EcoMex is determined as follows:

	As at 19 April 2021 <i>(in thousand Baht)</i>
Fair value of previously held equity interest	129,785
Carrying amount of previously held equity interest	(129,785)
Unrealised loss previously recognised in other comprehensive income	3,216
Loss recognised as a result of remeasuring to fair value of the previously held equity interest	3,216

The trade receivables comprised gross contractual amounts due of Baht 1.4 million which the entire amount was expected to be collectible at the acquisition date.

The payments of consideration payable were paid in July 2021 and December 2022.

(ii) Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries, USA

On 11 June 2021, IVL, through its indirect subsidiary, Indorama Ventures Holdings L.P. (“IVHLP”), completed the acquisition of Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries (“CarbonLite”), USA, as per the asset purchase agreement relating to the assets of CarbonLite dated 25 May 2021 for a cash consideration of USD 68.2 million (Baht 2,121.3 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed	Note	Fair values as at 11 June 2021 <i>(in thousand Baht)</i>
Inventories		21,335
Trade receivables		93,626
Property, plant and equipment	14	1,655,520
Right-of-use assets	15	254,875
Intangible assets	18	43,537
Deferred tax assets, net	35	4,865
Accounts payable		(12,097)
Lease liabilities		(254,875)
Other assets/(liabilities), net		39,988
Total identifiable net assets received		1,846,774
Goodwill		274,524
Net cash outflows		2,121,298

The trade receivables comprised gross contractual amounts due of Baht 93.6 million which the entire amount was expected to be collectible at the acquisition date.

(iii) UCY Polymers CZ s.r.o. (“UCY”), Czech Republic

On 18 February 2022, the Company, through its indirect subsidiary, Indorama Netherlands B.V., entered into an Agreement for the purchase of participation in UCY and a related Shareholders’ Agreement with Mr. Maximilian Josef Söllner (the “Transaction”). The Transaction completed on the same day. The initial consideration for the acquisition of the 85% equity stake in UCY was EUR 6.7 million (Baht 240.9 million), it was decreased to a reduced initial consideration of EUR 3.5 million (Baht 126.9 million) by a repayment of loans from the former shareholder outstanding as at the acquisition date amounting to EUR 3.2 million (Baht 114.0 million).

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The Transaction was accounted for as a business combination. During the period from acquisition date to 31 December 2022, the business contributed revenue of CZK 202.6 million (Baht 303.2 million) and net loss of CZK 92.0 million (Baht 137.7 million) to the Group's results. If the acquisition had occurred on 1 January 2022, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 45.5 million and Baht 2.4 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2022.

<i>Identifiable assets acquired and liabilities assumed</i>	<i>Note</i>	Fair values as at 18 February 2022 <i>(in thousand Baht)</i>
Cash and cash equivalents		1,104
Inventories		35,811
Trade receivables		15,973
Property, plant and equipment	14	239,176
Short-term loan from former shareholder	20	(114,022)
Accounts payable		(107,017)
Deferred tax liabilities, net	35	(30,750)
Other assets/(liabilities), net		24,175
Total identifiable net assets received		64,450
Controlling interest (%)		85.00
Total fair value of identifiable net assets received		54,783
Goodwill		72,148
Purchase consideration transferred		126,931
Cash acquired		(1,104)
Consideration payable		(36,526)
Net cash outflows		89,301

The trade receivables comprised gross contractual amounts due of Baht 16.0 million which the entire amount was expected to be collectible at the acquisition date.

The consideration amount of EUR 1.0 million (Baht 36.5 million) was payable as of 31 December 2022. The consideration amount of EUR 0.5 million (Baht 18.3 million) will be paid in January 2023 and the remaining balance of EUR 0.5 million (Baht 18.3 million) is due within 18 months from the acquisition date.

(iv) Oxiteno S.A. - Indústria e Comércio ("Oxiteno"), Brazil

On 1 April 2022, the Company, through its indirect subsidiaries, Tereftálicos Indústria e Participações Ltda. and Indorama Ventures Spain S.L., completed the acquisition of a 100% equity stake in Oxiteno from its existing shareholders as per the definitive Share Purchase Agreement dated 15 August 2021 for a cash consideration of BRL 6,694.2 million (Baht 47,535.8 million). The transaction was accounted for as a business combination. During the period from acquisition date to 31 December 2022, the business contributed revenue of BRL 6,377.4 million (Baht 44,443.8 million) and net profit of BRL 938.1 million (Baht 6,537.3 million) to the Group's results. If the acquisition had occurred on 1 January 2022, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 10,866.5 million and Baht 1,885.8 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2022.

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<i>Identifiable assets acquired and liabilities assumed</i>	<i>Note</i>	Fair values as at 1 April 2022 <i>(in thousand Baht)</i>
Cash and cash equivalents		1,466,726
Inventories		11,571,753
Trade receivables		7,149,279
Property, plant and equipment	14	26,966,701
Investment in associate		114,792
Right-of-use assets	15	187,782
Short-term loans from financial institutions	20	(657,551)
Long-term loans from financial institutions	20	(95,446)
Accounts payable		(6,212,004)
Lease liabilities		(203,085)
Provisions for employee benefits		(67,498)
Deferred tax assets, net	35	2,088,123
Other assets/(liabilities), net		5,226,190
Total identifiable net assets received		47,535,762
Controlling interest (%)		100.00
Total fair value of identifiable net assets received		47,535,762
Goodwill		-
Purchase consideration transferred		47,535,762
Cash acquired		(1,466,726)
Consideration receivable		106,822
Consideration payable		(4,576,194)
Net cash outflows		41,599,664

The trade receivables comprised gross contractual amounts due of Baht 7,243.1 million, of which Baht 93.8 million was expected to be uncollectible at the acquisition date.

The consideration receivable was received in December 2022. The consideration payable which is due in April 2024 is included in other non-current liabilities.

(v) **Ngoc Nghia Industry - Service - Trading Joint Stock Company (“NNC”), Vietnam**

On 21 April 2022, the Company, through its indirect subsidiary, Indorama Netherlands B.V. completed the acquisition of 97.8% equity stake in NNC from its existing shareholders as per the definitive Share Purchase Agreement dated 12 April 2022 for a cash consideration amounting to VND 2,090.1 billion (Baht 3,078.8 million). The transaction was accounted for as a business combination. During the period from acquisition date to 31 December 2022, the business contributed revenue of VND 1,620.3 billion (Baht 2,475.8 million) and net profit of VND 239.4 billion (Baht 365.7 million) to the Group’s results. If the acquisition had occurred on 1 January 2022, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 985.7 million and Baht 12.3 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2022.

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<i>Identifiable assets acquired and liabilities assumed</i>	<i>Note</i>	Fair values as at 21 April 2022 <i>(in thousand Baht)</i>
Cash and cash equivalents		37,073
Inventories		286,810
Trade receivables		555,244
Property, plant and equipment	14	1,643,666
Right-of-use assets	15	616,523
Intangible assets	18	587,099
Accounts payable		(228,606)
Short-term loans from financial institutions	20	(537,084)
Long-term loans from financial institutions	20	(303,800)
Lease liabilities		(75,904)
Deferred tax liabilities, net	35	(130,482)
Other assets/(liabilities), net		130,791
Total identifiable net assets received		2,581,330
Controlling interest (%)		97.81
Total fair value of identifiable net assets received		2,524,799
Goodwill		553,953
Purchase consideration transferred		3,078,752
Cash acquired		(37,073)
Net cash outflows		3,041,679

The trade receivables comprised gross contractual amounts due of Baht 683.9 million, of which Baht 128.7 million was expected to be uncollectible at the acquisition date.

(vi) *Filatura Tollegno 1900 S.r.l. (“Tollegno”), Italy*

On 1 July 2022, the Company, through its indirect subsidiary, Indorama Netherlands B.V. completed the acquisition of 100% equity stake in Tollegno from its existing shareholders as per the Sale and Purchase Agreement dated 24 February 2022 for a cash consideration amounting to EUR 46.2 million (Baht 1,715.9 million). The transaction was accounted for as a business combination. During the period from acquisition date to 31 December 2022, the business contributed revenue of EUR 37.0 million (Baht 1,364.1 million) and net profit of EUR 2.0 million (Baht 72.3 million) to the Group’s results. If the acquisition had occurred on 1 January 2022, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 1,793.2 million and Baht 200.8 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2022.

<i>Identifiable assets acquired and liabilities assumed</i>	<i>Note</i>	Fair values as at 1 July 2022 <i>(in thousand Baht)</i>
Inventories		1,345,740
Trade receivables		977,696
Property, plant and equipment	14	325,610
Right-of-use assets	15	463,849
Intangible assets	18	4,950
Accounts payable		(821,393)
Bank overdrafts	20	(1,264)
Lease liabilities		(442,378)

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<i>Identifiable assets acquired and liabilities assumed</i>	<i>Note</i>	Fair values as at 1 July 2022 <i>(in thousand Baht)</i>
Deferred tax liabilities, net	35	(66,420)
Provisions for employee benefits		(42,636)
Other assets/(liabilities), net		(27,845)
Total identifiable net assets received		1,715,909
Controlling interest (%)		100.00
Total fair value of identifiable net assets received		1,715,909
Goodwill		-
Purchase consideration transferred		1,715,909
Contingent consideration		(148,527)
Consideration payable		(86,698)
Net cash outflows		1,480,684

The trade receivables comprised gross contractual amounts due of Baht 977.7 million, which the entire amount was expected to be collectible at the acquisition date.

The consideration payable was paid in December 2022. The payment of contingent consideration is subject to the conditions set out in the Sale and Purchase Agreement.

During the years ended 31 December 2022 and 2021, the Group incurred acquisition-related costs of Baht 578.6 million and Baht 303.3 million, respectively, relating to external legal fees, advisory fees and due diligence costs. These amounts have been included in administrative expenses in the Group's consolidated statements of income for the years ended 31 December 2022 and 2021, respectively.

5 Related parties

Relationship with ultimate parent company is disclosed in note 1.

Relationships with immediate parent, subsidiaries, associate, joint ventures, joint operation and other related parties which the Group/Company had significant transactions with during the year were as follows:

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Resources Limited	Thailand	✓	-	-	-	✓	-
Indorama Ventures Global Services Limited	Thailand	-	99.99	-	-	✓	-
Indorama Polymers Public Company Limited	Thailand	-	99.92	-	-	✓	-
Indorama Holdings Limited	Thailand	-	99.81	-	-	-	-
Indorama Polyester Industries Public Company Limited	Thailand	-	99.49	-	-	✓	-
Indorama Petrochem Limited	Thailand	-	99.99	-	-	✓	-
TPT Petrochemicals Public Company Limited	Thailand	-	99.97	-	-	✓	-
IVL Belgium N.V.	Belgium	-	99.99	-	-	✓	-
Petform (Thailand) Limited	Thailand	-	-	59.95	-	✓	-
Asia Pet (Thailand) Limited	Thailand	-	-	99.92	-	✓	-
Guangdong IVL PET Polymer Co., Ltd.	China	-	-	99.92	-	-	-
FiberVisions (China) Textile Products Limited	China	-	-	99.99	-	-	-
Performance Fibers (Kaiping) Company Limited	China	-	-	99.99	-	-	-
Performance Fibers (Kaiping) No.2 Company Limited	China	-	-	99.99	-	-	-
Performance Fibers (Kaiping) No.3 Company Limited	China	-	-	99.99	-	-	-
Performance Fibers (Kaiping) Trading Company Limited	China	-	-	99.99	-	-	-
Glanzstoff Industries (Qingdao) Company Limited	China	-	-	99.99	-	-	-

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Sinterama Trading (Shanghai) Co., Ltd.	China	-	-	99.99	-	-	-
Sinterama Yarns (Dongguan) Co., Ltd.	China	-	-	99.99	-	-	-
Hubei Gold Dragon Nonwoven Fabrics Co., Ltd.	China	-	-	65.31	-	-	-
Glanzstoff Holding (Hong Kong) Limited	Hong Kong - China	-	-	99.99	-	-	-
Performance Fibers (Hong Kong) Limited	Hong Kong - China	-	-	99.99	-	-	-
Sinterama Asia Limited	Hong Kong - China	-	-	99.99	-	-	-
PT. Indorama Ventures Indonesia	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Polyester Industries Indonesia	Indonesia	-	-	99.97	-	✓	-
PT. Indorama Polychem Indonesia	Indonesia	-	-	99.99	-	-	-
PT. Indorama Polypet Indonesia	Indonesia	-	-	99.99	-	-	-
PT. Indorama Petrochemicals	Indonesia	-	-	99.99	-	-	-
Sustainable Solutions Indonesia	Indonesia	-	-	99.99	-	-	-
KP Equity Partners Inc.	Malaysia	-	-	99.99	-	-	-
Indorama Ventures Packaging (Myanmar) Limited	Myanmar	-	-	99.99	-	-	-
Indorama Ventures Packaging (Philippines) Corporation	Philippines	-	-	99.99	-	-	-

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
PETVALUE PHILIPPINES CORPORATION	Philippines	-	-	70.00	-	-	-
Indorama Ventures Investments & Holdings Pte. Ltd.	Singapore	-	-	99.92	-	✓	-
(Formerly IVL Singapore Pte. Ltd.)							
Indorama Ventures Oxides Anklshwar Private Limited	India	-	-	99.99	-	-	-
Indorama Ventures Global Shared Services Private Limited	India	-	-	99.99	-	✓	-
Avgol India Private Limited	India	-	-	65.97	-	-	-
Avgol Nonwovens India Private Limited	India	-	-	65.97	-	-	-
IVL Dhunseri Petrochem Industries Private Limited	India	-	-	50.00	-	✓	-
Indo Rama Synthetics (India) Limited	India	-	-	38.56	-	✓	✓
Indorama Yarns Private Limited	India	-	-	38.56	-	-	-
Indorama Ventures Yarns Private Limited	India	-	-	38.56	-	-	-
FiberVisions (China) A/S	Denmark	-	-	99.99	-	-	-
FiberVisions A/S	Denmark	-	-	99.99	-	-	-
Wellman France Recyclage S.A.S.	France	-	-	99.99	-	-	-
Glanzstoff Longlaville S.A.S.	France	-	-	99.99	-	-	-
Glanzstoff Services S.A.S.	France	-	-	99.99	-	-	-

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Indorama Ventures Recycling Verdun S.A.S.	France	-	-	99.99	-	-	-
Wellman Neufchateau Recyclage S.A.	France	-	-	99.99	-	✓	-
FiberVisions Vermögensverwaltungsgesellschaft mbH	Germany	-	-	99.99	-	-	-
Indorama Germany GmbH	Germany	-	-	99.99	-	-	-
Trevira GmbH	Germany	-	-	99.99	-	-	-
PHP Fibers GmbH	Germany	-	-	80.00	-	-	-
UTT Beteiligungsgesellschaft mbH	Germany	-	-	80.00	-	-	-
UTT Technische Textilien GmbH & Co. KG	Germany	-	-	80.00	-	-	-
UTT Admin GmbH	Germany	-	-	80.00	-	-	-
Indorama Ventures Polymers Germany GmbH	Germany	-	-	99.99	-	-	-
Wellman International Limited	Ireland	-	-	99.99	-	-	-
Glanzstoff Industries S.R.L.	Italy	-	-	99.99	-	-	-
Società Industriale Cremonese	Italy	-	-	99.99	-	-	-
SICREM s.p.a.	Italy	-	-	99.99	-	-	-
Sinterama S.p.A.	Italy	-	-	99.99	-	-	-
Glanzstoff Industries S.A.	Luxembourg	-	-	99.99	-	-	-
Textilcord Steinfort S.A.	Luxembourg	-	-	99.99	-	-	-
Glanzstoff Management GmbH	Austria	-	-	99.99	-	-	-
Schoeller GmbH & Co KG	Austria	-	-	99.99	-	-	-
Indorama Austria GmbH	Austria	-	-	99.99	-	-	-

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AE BG AlphaOmega Holding GmbH	Austria	-	-	99.99	-	-	-
Glanzstoff - Bohemia s.r.o.	Czech Republic	-	-	99.99	-	-	-
KORDÁRNA Plus a.s.	Czech Republic	-	-	99.99	-	-	-
Kordplast s.r.o.	Czech Republic	-	-	99.99	-	-	-
Schoeller Kresice s.r.o.	Czech Republic	-	-	99.99	-	-	-
UAB Orion Global PET	Lithuania	-	-	99.92	-	✓	-
UAB Indorama Polymers Europe	Lithuania	-	-	99.92	-	✓	-
UAB Indorama Holdings Europe	Lithuania	-	-	99.99	-	✓	-
Indorama Netherlands B.V.	The Netherlands	-	-	99.99	-	-	-
Indorama Ventures Europe B.V.	The Netherlands	-	-	99.99	-	✓	-
Indorama Polymers Rotterdam B.V.	The Netherlands	-	-	99.92	-	✓	-
(Completion of dissolution process in 2022)							
Indorama Ventures Recycling Netherlands B.V.	The Netherlands	-	-	99.99	-	-	-
MJR Recycling B.V.	The Netherlands	-	-	99.99	-	-	-
Indorama Holdings Rotterdam B.V.	The Netherlands	-	-	99.99	-	✓	-
(Completion of dissolution process in 2022)							
Indorama Ventures Dutch Investments B.V.	The Netherlands	-	-	50.78	-	-	-
Indorama Ventures Netherlands Oxides B.V.	The Netherlands	-	-	99.99	-	-	-

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Poland Sp. z o.o.	Poland	-	-	99.99	-	✓	-
Indorama Ventures Recycling Poland Sp. z o.o.	Poland	-	-	99.99	-	✓	-
Indorama Ventures Quimica S.L.U.	Spain	-	-	99.99	-	-	-
Indorama Ventures Spain S.L.	Spain	-	-	99.99	-	-	-
Indorama Trading AG	Switzerland	-	-	99.81	-	-	-
Indorama Ventures Adana PET Sanayi Anonim Sirketi	Turkey	-	-	99.99	-	✓	-
Indorama Ventures Corlu PET Sanayi Anonim Sirketi	Turkey	-	-	99.99	-	✓	-
Beverage Plastics (Holdings) Limited	United Kingdom	-	-	99.86	-	-	-
Beverage Plastics Limited	United Kingdom	-	-	99.86	-	-	-
Beacon Trading (UK) Limited	United Kingdom	-	-	99.81	-	-	-
Indorama Trading (UK) Ltd.	United Kingdom	-	-	99.81	-	-	-
Indorama Polymers Workington Limited	United Kingdom	-	-	99.92	-	✓	-
Autofil Holdings Limited (Completion of dissolution process in 2022)	United Kingdom	-	-	99.99	-	-	-
Autofil Worldwide Limited (Completion of dissolution process in 2022)	United Kingdom	-	-	99.99	-	-	-
Autofil Yarns Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Properties Limited (Completion of dissolution process in 2022)	United Kingdom	-	-	99.99	-	-	-

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Portugal PTA - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Indorama Ventures Portugal Utility - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Avgol Cyprus Ltd.	Cyprus	-	-	65.97	-	-	-
“Avgol” Limited Liability Company	Russia	-	-	65.97	-	-	-
Indorama Ventures Holdings Corporation	USA	-	-	99.99	-	-	-
(Formerly Indorama Ventures Holdings LP)							
Indorama Ventures USA Holdings LP	USA	-	-	99.99	-	-	-
Indorama Ventures OGL Holdings LP	USA	-	-	99.99	-	-	-
Indorama Ventures Logistics LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures (Oxide & Glycols) LLC	USA	-	-	99.99	-	✓	-
Performance Fibers Holdings Finance, Inc.	USA	-	-	99.99	-	-	-
Performance Fibers Asia Holdings, LLC	USA	-	-	99.99	-	-	-
Performance Fibers Asia, LLC	USA	-	-	99.99	-	-	-
Indorama Ventures AlphaPet Holdings, Inc.	USA	-	-	99.99	-	✓	-
Indorama Polymers (USA) LLC	USA	-	-	99.99	-	-	-
AlphaPet, Inc.	USA	-	-	99.99	-	✓	-

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Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Polyholding LLC	USA	-	-	99.99	-	-	-
Indorama Ventures USA LLC	USA	-	-	99.99	-	-	-
Auriga Polymers Inc.	USA	-	-	99.99	-	✓	-
StarPet Inc.	USA	-	-	99.99	-	✓	-
Indorama Ventures Xylenes & PTA LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Performance Fibers Holdings USA LLC	USA	-	-	99.99	-	-	-
FiberVisions Manufacturing Company	USA	-	-	99.99	-	-	-
FiberVisions Corporation	USA	-	-	99.99	-	-	-
FiberVisions Products, Inc.	USA	-	-	99.99	-	-	-
FiberVisions L.P.	USA	-	-	99.99	-	-	-
PHP Fibers Inc.	USA	-	-	80.00	-	-	-
Safe Tweave Inc.	USA	-	-	80.00	-	-	-
Indorama Ventures Olefins Holding LLC	USA	-	-	99.99	-	-	-
Indorama Ventures Investments USA LLC	USA	-	-	50.78	-	-	-
Indorama Ventures Olefins LLC	USA	-	-	90.35	-	✓	-
Indorama Ventures Exporter Inc.	USA	-	-	99.99	-	✓	-
Winnsboro Fibres LLC	USA	-	-	99.99	-	-	-
Indorama Ventures Corpus Christi Holding LLC	USA	-	-	99.99	-	✓	-
Avgol America Inc.	USA	-	-	65.97	-	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Avgol Distribution Company Inc.	USA	-	-	65.97	-	-	-
Indorama Ventures Insurance Company USA	USA	-	-	99.99	-	-	-
Indorama Ventures Sustainable Solutions LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Oxides LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Sustainable Solutions Fontana, Inc.	USA	-	-	99.99	-	✓	-
Indorama Ventures Propylene Oxides LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Oxides International LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Sustainable Recycling, LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Northern Investments Inc.	Canada	-	-	99.99	-	✓	-
Indorama Ventures Gestion Inc.	Canada	-	-	99.99	-	✓	-
Indorama Ventures PTA Montréal LP	Canada	-	-	99.99	-	-	-
4200144 Canada Inc.	Canada	-	-	99.99	-	-	-
IVL Holding S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Indorama Ventures EcoMex, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Indorama Ventures Polymers Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Polycom, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Performance Fibers Operations Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	-	-
Glanzstoff Industries Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	-	-
UTT de México Technical Textiles, S.A. de C.V.	Mexico	-	-	80.00	-	-	-
Indorama Ventures Polimeros S.A.	Brazil	-	-	99.99	-	✓	-
Tereftálicos Industria e Participacoes Ltda.	Brazil	-	-	99.99	-	-	-
Tereftálicos Indústrias Químicas Ltda.	Brazil	-	-	99.99	-	-	-
Indorama Ventures Fibras Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Indorama Ventures Soluções Sustentáveis Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Sinterama do Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Sinterama Bulgaria EOOD	Republic of Bulgaria	-	-	99.99	-	-	-
Indorama PET (Nigeria) Limited	Nigeria	-	-	89.92	-	-	-
Bevpak (Nigeria) Limited	Nigeria	-	-	99.99	-	-	-
Indorama Ventures Packaging (Ghana) Limited	Republic of Ghana	-	-	99.99	-	-	-
IVL Dhunseri Polyester Company S.A.E.	Egypt	-	-	50.00	-	✓	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Medco Plast Co. for Packing & Packaging systems (S.A.E.)	Egypt	-	-	99.99	-	✓	-
Avgol Industries 1953 Ltd.	Israel	-	-	65.97	-	✓	-
Indorama Ventures Holdings Pty Ltd.	Australia	-	-	99.99	-	-	-
Indorama Ventures Oxides Australia Pty Limited	Australia	-	-	99.99	-	✓	-
ES FiberVisions (Thailand) Co., Ltd.	Thailand	-	-	-	49.91	-	-
ES FiberVisions (Suzhou) Co., Ltd.	China	-	-	-	50.00	-	-
ES FiberVisions Shanghai Co., Ltd.	China	-	-	-	50.00	-	-
Shenma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.	China	-	-	-	39.20	-	-
PHP-Shenma Air Bag Yarn Marketing (Shanghai) Co., Ltd.	China	-	-	-	40.80	-	-
ES FiberVisions Hong Kong Limited	Hong Kong	-	-	-	50.00	-	-
ES FiberVisions Company Limited	Japan	-	-	-	50.00	-	-
ES FiberVisions Holdings ApS	Denmark	-	-	-	50.00	-	-
ES FiberVisions ApS	Denmark	-	-	-	50.00	-	-
ES FiberVisions LP	USA	-	-	-	50.00	-	-
ES FiberVisions, Inc.	USA	-	-	-	50.00	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Huvis Indorama Advanced Materials, LLC	USA	-	-	-	50.00	✓	-
Indorama Loop Technologies, USA LLC	USA	-	-	-	50.00	✓	-
Thai Plaspac Public Company Limited	Thailand	-	-	-	-	-	✓
Lohia Global Holdings Limited	Hong Kong - China	-	-	-	-	-	✓
Vega Aviation Limited	British Virgin Islands	-	-	-	-	✓	✓
PT. Indo-Rama Synthetics Tbk.	Indonesia	-	-	-	-	✓	-
PT. TIGADAYA MINERGY Indorama Eleme Petrochemicals Limited	Indonesia Nigeria	-	-	-	-	-	✓ ✓
Indorama Industries Limited	India	-	-	-	-	-	✓
Sun Packaging Systems (FZC) Emirates	United Arab Emirates	-	-	-	-	-	✓
Aurus Speciality Limited	Thailand	-	-	-	-	✓	✓
Indorama Ventures Services S.r.l.	Italy	-	-	99.99	-	✓	-
Indorama Ventures Captive Insurance Co., Ltd.	Bermuda	-	-	99.99	-	-	-
UCY Polymers CZ s.r.o.	Czech Republic	-	-	85.00	-	-	-
Indorama Ventures Brazil Oxides Ltda.	Brazil	-	-	99.99	-	-	-
Oxítieno S.A. Indústria e Comércio	Brazil	-	-	99.99	-	✓	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect associate and joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Oleoquímica Indústria e Comércio de Produtos Químicos Ltda.	Brazil	-	-	99.99	-	-	-
Empresa Carioca de Produtos Químicos S.A.	Brazil	-	-	99.99	-	-	-
Oxiteno México, S.A. de C.V.	Mexico	-	-	99.99	-	-	-
Oxiteno USA LLC	USA	-	-	99.99	-	✓	-
Oxiteno Colombia S.A.S.	Colombia	-	-	99.99	-	-	-
Oxiteno Uruguay S.A.	Uruguay	-	-	99.99	-	-	-
Oxiteno Argentina S.R.L.	Argentina	-	-	99.99	-	-	-
Oxiteno (Shanghai) Ltd.	China	-	-	99.99	-	-	-
Oxiteno Europe B.V.	Belgium	-	-	99.99	-	-	-
Oxiteno Netherlands B.V.	The Netherlands	-	-	99.99	-	-	-
Oxicap Indústria de Gases Ltda.	Brazil	-	-	-	15.09	-	-
Ngoc Nghia Industry - Service - Trading Joint Stock Company	Vietnam	-	-	97.81	-	-	-
IDVB Recycling Operations Private Limited	India	-	-	25.00	-	-	-
Filatura Tollegno 1900 S.r.l.	Italy	-	-	99.99	-	-	-
Tollegno 1900 Poland Sp. z o.o.	Poland	-	-	99.99	-	-	-
Tollegno 1900 U.S.A., Inc.	USA	-	-	99.99	-	-	-
Tollegno Far East Co. Limited	Hong Kong - China	-	-	99.99	-	-	-
Tollegno Japan Limited	Japan	-	-	99.99	-	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Name of entities	Country of incorporation/ Nationality	Nature of relationships
IVL Foundation	Thailand	Common Director/Family relationships with board of directors
Key management personnel	Various countries	Persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the Group/Company

On 26 March 2021, IVL, through its indirect subsidiary, Indorama Ventures Polimeros S.A. (“IVBRZ”), completed the acquisition of 100% stake in Tereftalicos Industria e Participacoes Ltda. located in São Paulo, Brazil, who held 49% equity interest of Tereftálicos Indústrias Químicas Ltda., indirect subsidiary of the Company, from Mossi & Ghisolfi International S.a r.l., as per share purchase agreement dated 26 March 2021 for a cash consideration of EUR 25,000 (Baht 0.9 million). The amount of excess of the cost of acquired subsidiary over book value and addition of non-controlling interest from derecognition of non-controlling interest of BRL 17.2 million (Baht 95.1 million) and BRL 13.8 million (Baht 80.0 million), respectively, were recognised in the statement of changes in equity for the year ended 31 December 2021.

On 1 November 2021, IVL, through its indirect subsidiary, Indorama Netherlands B.V. (“INBV”), completed the acquisition of 26% stake in Medco Plast Co. for Packing & Packaging systems (S.A.E.), as per share purchase agreement dated 1 November 2021 for a cash consideration of EUR 16.3 million (Baht 623.3 million). The amount of excess of the cost of acquired subsidiary over book value and decrease of non-controlling interest from derecognition of non-controlling interest of Baht 254.1 million and Baht 369.2 million, respectively, were recognised in the statement of changes in equity for the year ended 31 December 2021.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Significant transactions with related parties Year ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Subsidiaries				
Finance income	-	-	3,862,733	3,284,835
Royalty income	-	-	1,815,555	190,455
Other income	-	-	334,534	362,211
Dividend income	-	-	10,934,704	7,363,503
Administrative expenses	-	-	1,223,113	170,527
Finance costs	-	-	216,037	46,110
Joint ventures				
Revenue from sales of goods	8,295,547	6,417,739	-	-
Purchases of goods and raw materials	22,385	252,810	-	-
Finance income	15,726	2,976	-	-
Rental income	45,968	45,600	-	-
Other income	158,295	23,372	-	-
Finance costs	48	70	-	-
Associate				
Revenue from sales of goods	9,191	-	-	-
Purchases of goods and raw materials	93,615	-	-	-
Joint operation				
Other income	25,164	8,448	-	-
Key management personnel compensation				
Directors' fee and bonus	32,160	19,000	30,880	17,720
Short-term employee benefits	441,777	296,741	-	-
Long-term employee benefits	4,924	5,280	-	-
Other related parties				
Revenue from sales of goods	3,626,388	3,759,825	-	-
Purchases of goods and raw materials	757,987	802,370	-	-
Purchases of property, plant and equipment	106,080	-	-	-
Other raw materials conversion charges and overheads	16,311	9,866	-	-
Distribution costs and administrative expenses	74,650	85,546	-	-
Royalty expense	268,824	242,293	272,503	20,430
Lease-related expense	16,059	7,835	-	-
Other income	6,286	5,883	-	-
Finance costs	4,756	4,689	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

<i>Balances with related parties</i> <i>At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>Trade accounts receivable</i>				
Joint ventures	2,202,980	1,619,910	-	-
Associate	2,931	-	-	-
Other related parties	183,919	171,609	-	-
	2,389,830	1,791,519	-	-
<i>Less allowance for expected credit loss</i>	-	-	-	-
Net	2,389,830	1,791,519	-	-
<i>Other receivables</i>				
Subsidiaries	-	-	719,028	763,186
Joint ventures	134,347	268,669	-	-
Other related parties	76,364	80,888	-	-
	210,711	349,557	719,028	763,186
<i>Less allowance for expected credit loss</i>	-	-	-	-
Net	210,711	349,557	719,028	763,186
<i>Other non-current assets</i>				
Joint ventures	378,646	366,130	-	-
	378,646	366,130	-	-
<i>Less allowance for expected credit loss</i>	-	-	-	-
Net	378,646	366,130	-	-
<i>Short-term loans to</i>				
Subsidiaries	-	-	6,305,014	6,316,748
Joint ventures	22,096	29,003	-	-
	22,096	29,003	6,305,014	6,316,748
<i>Less allowance for expected credit loss</i>	-	-	-	-
Net	22,096	29,003	6,305,014	6,316,748
<i>Long-term loans to</i>				
Subsidiaries	-	-	106,123,587	103,003,840
Joint ventures	-	-	-	-
	-	-	106,123,587	103,003,840
<i>Less allowance for expected credit loss</i>	-	-	-	-
Net	-	-	106,123,587	103,003,840
<i>Reversal of expected credit loss</i> <i>for the year ended 31 December</i>				
Trade accounts receivable	-	1,764	-	-
Short-term and long-term loans to	-	2,181	-	-
<i>Interest receivable</i>				
Subsidiaries	-	-	508,113	281,535
Joint ventures	1,598	1,226	-	-
Total	1,598	1,226	508,113	281,535

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

During 2022 and 2021, the Company has amended the loan agreements with certain subsidiaries to change the interest rate of the short-term loans and long-term loans to subsidiaries.

<i>Balances with related parties At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>Trade accounts payable</i>				
Joint ventures	1,878	2,892	-	-
Associate	9,274	-	-	-
Other related parties	110,280	222,530	-	-
Total	121,432	225,422	-	-
<i>Other current liabilities</i>				
Subsidiary	-	-	285,567	40,655
Joint ventures	1,105	1,137	-	-
Other related parties	59,881	75,795	50,281	5,194
Total	60,986	76,932	335,848	45,849
<i>Lease liabilities</i>				
Joint ventures	2,402	3,926	-	-
Other related parties	42,594	47,347	-	-
Total	44,996	51,273	-	-
<i>Long-term loans from</i>				
Subsidiary	-	-	8,000,000	6,000,000
Total	-	-	8,000,000	6,000,000
<i>Interest payable</i>				
Subsidiary	-	-	22,422	16,816
Total	-	-	22,422	16,816
Reversal of expected credit loss of undrawn loan commitment given to related parties included in other current liabilities for the year ended 31 December	-	637	-	-

Significant agreements with related parties

License Agreements

The Company entered into the license agreements with direct and indirect subsidiaries in respect of the use of the name “Indorama Ventures”. Under the agreement, the Company shall receive the royalty fees on a quarterly basis at the agreed amounts based on rate and conditions stipulated in the agreement.

Guarantee Agreements

The Company entered into Guarantee Agreements with its related parties to provide the corporate guarantee to the third parties for the term loans of agreed amount. Under the term of the agreements, those related parties agree to pay guarantee fees as stipulated in the agreements. The agreements expire when the loans have been fully paid by those related parties to third parties.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Lease Agreement

On 31 January 2019, Auriga Polymers Inc. (“Auriga”), an indirect subsidiary of the Company, entered into the Equipment Lease Agreement with its joint venture, Huvis Indorama Advanced Materials, LLC (“Huvis”) whereby Auriga rent to Huvis the equipment on the terms and conditions stipulated in the agreement on a non-cancellable period of 15 years. The Group treats aforesaid lease as a finance lease.

6 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Cash on hand	42,918	13,801	-	-
Cash at banks	11,737,218	15,389,497	73,523	220,032
Highly liquid short-term investments	9,431,013	811,957	-	-
Total	21,211,149	16,215,255	73,523	220,032

7 Trade accounts receivable

<i>At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Within credit terms	47,465,815	48,481,325	-	-
Overdue:				
Less than 3 months	6,242,781	4,407,972	-	-
3-6 months	1,412,548	250,406	-	-
6-12 months	574,730	29,976	-	-
Over 12 months	745,955	675,445	-	-
Total	56,441,829	53,845,124	-	-
Less allowance for expected credit loss	(861,556)	(673,230)	-	-
Net	55,580,273	53,171,894	-	-

<i>Allowance for expected credit loss</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		<i>(in thousand Baht)</i>			
At 1 January		673,230	623,208	-	-
Assumes from business acquisition	4	222,444	-	-	-
Addition		136,685	85,066	-	-
Reversal		(127,465)	(39,575)	-	-
Write-off		(25,822)	(49,417)	-	-
Effect of movements in exchange rates		(17,516)	53,948	-	-
At 31 December		861,556	673,230	-	-

Information of credit risk is disclosed in note 38(b.1.1).

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

8 Inventories

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Finished goods	56,063,028	39,414,852	-	-
Work in progress	3,978,979	3,451,668	-	-
Raw materials	39,743,999	28,593,354	-	-
Trading materials	849,755	427,468	-	-
Spare parts and supplies	11,411,153	10,460,994	-	-
Goods in transit	7,032,816	7,648,094	-	-
	<u>119,079,730</u>	<u>89,996,430</u>	<u>-</u>	<u>-</u>
Less allowance for decline in value	(3,207,466)	(1,017,462)	-	-
Net	<u>115,872,264</u>	<u>88,978,968</u>	<u>-</u>	<u>-</u>
Inventories recognised in ‘cost of sales of goods’:				
- Cost	542,222,795	382,889,845	-	-
- Provision for losses on inventories devaluation, net	2,098,472	238,108	-	-
Net	<u>544,321,267</u>	<u>383,127,953</u>	<u>-</u>	<u>-</u>

9 Other current assets

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Value added tax receivable	8,517,655	5,509,040	86,641	31,247
Advance tax payments and withholding tax	4,053,177	2,774,774	48,296	45,875
Advance payments	2,586,828	2,450,479	22,471	22,216
Prepaid expenses	1,636,259	1,764,412	-	-
Export incentive receivable	546,371	360,645	-	-
Material price adjustment receivable	105,799	515,408	-	-
Insurance claims receivable	53,086	84,245	-	-
Others	967,494	554,830	-	-
Total	<u>18,466,669</u>	<u>14,013,833</u>	<u>157,408</u>	<u>99,338</u>

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

10 Investments in subsidiaries

	Separate financial statements	
	2022	2021
	<i>(in thousand Baht)</i>	
Cost		
At 1 January and 31 December	66,709,169	66,709,169
Impairment loss		
At 1 January	(121,630)	(121,630)
Impairment loss	<u>(5,182,189)</u>	<u>-</u>
At 31 December	<u>(5,303,819)</u>	<u>(121,630)</u>
Net book value		
At 31 December	<u>61,405,350</u>	<u>66,587,539</u>

During the year 2022, the actual financial performance of one of direct subsidiary was significantly lower than the management's expectations. The management believes that the impairment indications existed. Therefore, the Company assessed the equity value of this certain investment in subsidiary. Based on the result of the assessment, the Company recorded an impairment loss amounting to Baht 5,182.2 million in the separate statement of income for the year ended 31 December 2022.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries For the year ended 31 December 2022

11 Investments in associate and joint ventures

Type of business	Effective ownership interest		Paid-up capital		Cost method		At equity method		Consolidated financial statements				Share of profit (losses) of associate and joint ventures for the year		
	2022	2021	2022	2021	2022	2021	2022	2021	Effect of movements in exchange rates	Carrying value at equity method	Dividend income	2022	2021	2022	2021
	(%)	(%)													
<i>(in thousand Baht)</i>															
Associate															
Oxicap Industria de Gases Ltda.	15.09	-	529,563	-	114,792	-	116,028	-	(7,763)	108,265	-	-	-	1,236	-
Total					114,792		116,028		(7,763)	108,265				1,236	
Joint ventures															
ES FiberVisions	50.00	50.00	613,653	613,653	699,178	699,178	1,450,182	1,260,163	23,330	1,473,512	(19,953)	(6,972)	74,766	125,398	
ES FiberVisions (Suzhou) Co., Ltd	50.00	50.00	786,545	786,545	392,992	392,992	465,583	448,999	(25,510)	440,073	-	-	(48,553)	11,655	
Shenna-PPP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.	39.20	39.20	796,144	796,144	191,864	191,864	247,292	180,804	(16,988)	230,304	-	-	23,843	(35,766)	
PPP-Shenna Air Bag Yarn															
Marketing (Shanghai) Co., Ltd.	40.80	40.80	9,038	9,038	152,611	152,611	211,329	181,527	(7,536)	203,793	-	(20,242)	14,290	5,071	
TTT GmbH															
ES FiberVisions (Thailand) Co., Ltd.	40.00	40.00	1,119	1,119	12,852	12,852	3,240	3,153	(95)	3,145	-	-	-	-	
Research and development service															
Manufacture of polyester fibers and yarns	49.91	49.91	410,000	410,000	205,000	205,000	408,479	377,713	-	408,479	-	-	30,766	96,097	

Indorama Ventures Public Company Limited and its Subsidiaries For the year ended 31 December 2022

Type of business	Effective ownership interest		Paid-up capital		Cost method		At equity method		Effect of movements in exchange rates		Carrying value at equity method		Dividend income		Share of profit (losses) of associate and joint ventures for the year	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
	(in thousand Baht)															
Joint ventures																
Indorama Ventures EcoMex, S. de R.L. de C.V.	-	-	644,100	644,100	-	-	-	-	-	-	-	-	-	-	-	(15,661)
Indorama Ventures EcoMex Services, S. de R.L. de C.V.	-	-	7	7	-	-	-	-	-	-	-	-	-	-	-	30
Huvis Indorama Advanced Materials, LLC	50.00	50.00	1,142,432	962,868	546,480	456,698	386,639	380,983	13,054	45,221	399,693	426,204	-	-	(129,348)	(33,344)
Indorama Loop Technologies, LLC	50.00	50.00	96,066	96,066	48,033	48,033	50,129	45,055	1,714	5,074	51,843	50,129	-	-	-	-
Toyobo Indorama Advanced Fibers Company Limited	49.75	49.75	786,062	589,546	393,031	294,773	409,946	301,450	-	-	409,946	301,450	-	-	10,239	6,755
Total			2,642,041	2,454,001	2,756,833	2,454,001	3,632,819	3,179,847	(12,031)	308,880	3,620,788	3,488,727	(19,953)	(27,214)	(23,997)	160,235
Grand total			2,756,833	2,454,001	2,756,833	2,454,001	3,748,847	3,179,847	(19,794)	308,880	3,729,053	3,488,727	(19,953)	(27,214)	(22,761)	160,235

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Indorama Ventures Public Company Limited and its Subsidiaries
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<i>Material movements for the year ended 31 December</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Associate					
Investment in associate acquired from business acquisition	4(iv)	114,792	-	-	-
Share of net profit of associate		1,236	-	-	-
Effect of movements in exchange rates		(7,763)	-	-	-
Total		108,265	-	-	-
Joint ventures					
Additional investments		188,042	216,605	-	-
Share of net (loss) profit of joint ventures		(23,997)	160,235	-	-
Dividend income		(19,953)	(27,214)	-	-
Effect of movements in exchange rates		(12,031)	308,880	-	-
Total		132,061	658,506	-	-
Acquisition of additional interests with a change in control	4(i)	-	(124,668)	-	-
Net total		132,061	533,838	-	-
Total		240,326	533,838	-	-

ES FiberVisions group consists of ES FiberVisions LP, ES FiberVisions, Inc., ES FiberVisions Holdings ApS, ES FiberVisions ApS, ES FiberVisions Hong Kong Limited, ES FiberVisions Shanghai Co., Ltd. and ES FiberVisions Company Limited.

During 2022, Huvis Indorama Advanced Materials, LLC (“HIAM”) increased its share capital from USD 31.0 million (Baht 962.9 million) to USD 36.0 million (Baht 1,142.4 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2022, Toyobo Indorama Advanced Fibers Company Limited (“TIAF”) increased its share capital from Baht 589.5 million to Baht 786.1 million for which the Group entirely subscribed to the portion of its shareholdings.

During 2021, the Group purchased additional shares of EcoMex for a cash consideration of USD 7.6 million (Baht 237.4 million) from Mario Martinez bringing the Group’s shareholding in EcoMex to 100%. With the additional purchase of shares, IVL has control over EcoMex resulting in the change in accounting treatment of investment in EcoMex, effective from 19 April 2021 onwards. (see note 4(i))

During 2021, Huvis Indorama Advanced Materials, LLC (“HIAM”) increased its share capital from USD 29.6 million (Baht 922.7 million) to USD 31.0 million (Baht 962.9 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2021, Toyobo Indorama Advanced Fibers Company Limited (“TIAF”) increased its share capital from Baht 196.5 million to Baht 589.5 million for which the Group entirely subscribed to the portion of its shareholdings.

None of the Group’s associate and joint ventures are publicly listed and consequently do not have published price quotations.

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Material joint ventures

The following table summarises the financial information of the material joint ventures as included in their own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarised financial information to the carrying amount of the Group's interest in these companies.

	ES FiberVisions (Suzhou) Co., Ltd.	ES FiberVisions 2022
	<i>(in thousand Baht)</i>	
Revenue	1,096,313	11,073,787
Profit (loss) from operations (a)	(97,107)	149,532
Other comprehensive income	-	-
Total comprehensive income (100%)	<u>(97,107)</u>	<u>149,532</u>
Group's share of total comprehensive income	<u>(48,553)</u>	<u>74,766</u>
Dividend income from joint ventures for the year	-	19,953
Current assets (b)	357,267	2,844,645
Non-current assets	1,130,571	1,472,254
Current liabilities (c)	343,223	1,250,688
Non-current liabilities (d)	273,523	117,098
Net assets (100%)	<u>871,092</u>	<u>2,949,113</u>
Carrying amount of interest in joint ventures	<u>440,073</u>	<u>1,473,512</u>
Remark:		
a. Includes:		
- depreciation and amortisation	73,783	-
- finance costs	51,553	1,371
- tax expense (income)	(16,825)	35,784
b. Includes cash and cash equivalents	67,338	560,757
c. Includes current financial liabilities (excluding trade and other payables)	-	-
d. Includes non-current financial liabilities (excluding trade and other payables)	273,523	-

	ES FiberVisions (Suzhou) Co., Ltd.	ES FiberVisions 2021
	<i>(in thousand Baht)</i>	
Revenue	1,260,000	10,854,529
Profit from operations (a)	23,309	250,797
Other comprehensive income	-	-
Total comprehensive income (100%)	<u>23,309</u>	<u>250,797</u>
Group's share of total comprehensive income	<u>11,655</u>	<u>125,398</u>
Dividend income from joint ventures for the year	-	6,972

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	ES FiberVisions (Suzhou) Co., Ltd.	ES FiberVisions 2021
	<i>(in thousand Baht)</i>	
Current assets (b)	499,303	3,324,732
Non-current assets	1,237,084	1,321,997
Current liabilities (c)	289,641	1,835,287
Non-current liabilities (d)	429,169	16,651
Net assets (100%)	<u>1,017,577</u>	<u>2,794,791</u>
Carrying amount of interest in joint ventures	<u>514,137</u>	<u>1,395,368</u>
Remark:		
a. Includes:		
- depreciation and amortisation	67,977	-
- finance costs	56,161	1,425
- tax expense (income)	(1,958)	22,544
b. Includes cash and cash equivalents	65,428	445,815
c. Includes current financial liabilities (excluding trade and other payables)	-	-
d. Includes non-current financial liabilities (excluding trade and other payables)	429,169	-

Immaterial associate and joint ventures

The following table is summarised financial information for the Group's interest in immaterial associate and joint ventures based on the amounts reported in the Group's consolidated financial statements:

	Immaterial associate and joint ventures	
	2022	2021
	<i>(in thousand Baht)</i>	
Carrying amount of interests in immaterial associate and joint ventures	1,815,468	1,579,222
Group's share of:		
- Profit (loss) from operations, net	(48,974)	23,182
- Other comprehensive income	-	-
- Total comprehensive income (expense)	<u>(48,974)</u>	<u>23,182</u>

12 Investment in joint operation

IVL, through its indirect subsidiary, Indorama Ventures Holdings LP, formed an equal joint operation, namely Corpus Christi Polymers LLC ("CC Polymers"), with Alpek, S.A.B. de C.V. ("Alpek"), and Far Eastern Investment (Holding) Ltd. ("Far Eastern") and has entered into an asset purchase agreement with M&G USA Corp. and its affiliated debtors ("M&G") on 28 March 2018 to acquire the integrated PTA-PET plant currently under construction in Corpus Christi, Texas (the "Corpus Christi Project"), along with certain M&G intellectual property, and utility assets. The acquisition has been completed on 28 December 2018. The consideration for investment in CC Polymers by IVL amounted to USD 382.5 million (Baht 12,043.8 million) out of which USD 6.1 million (Baht 209.3 million) and USD 15.0 million (Baht 501.3 million) are payable as of 31 December 2022 and 2021, respectively. The payment of consideration payable is subject to the conditions shall have been satisfied according to the Asset Purchase Agreement.

Notes to the financial statements

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Although CC Polymers is legally separated from IVL, Alpek and Far Eastern (collectively referred as “the Members”), the Group has classified it as a joint operation. This is on the basis that the Members will each receive one-third of the capacity of PTA and PET produced. Each of the Members will procure raw materials independently, while also independently selling and distributing their corresponding PTA and PET. The funding to settle the liabilities is provided by the Members.

On 19 March 2020, the Board of Managers of Corpus Christi Polymers LLC, a joint operation, comprising of representatives of all the three Members, decided to extend the approval of projected capital expenditure to optimise project construction efficiency in order to build a competitive PTA-PET asset at the site. The construction of this plant resumed in August 2022.

13 Non-controlling interests

The following table summaries the information relating to each of the Group’s subsidiaries that has a material non-controlling interest, before any intra-group eliminations:

	31 December 2022						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
	<i>(in thousand Baht)</i>						
Non-controlling interest percentage	20.00	40.05	61.44	34.03	50.00	50.00	
Current assets	4,948,958	1,259,823	4,289,930	4,991,294	5,617,818	9,673,124	
Non-current assets	10,415,678	1,592,732	5,283,717	15,594,337	5,584,350	4,848,423	
Current liabilities	5,659,404	254,398	5,734,334	4,206,396	3,688,164	6,022,845	
Non-current liabilities	4,540,074	79,180	1,620,774	5,602,048	721,731	-	
Net assets	5,165,158	2,518,977	2,218,539	10,777,187	6,792,273	8,498,702	
Carrying amount of non-controlling interest	360,007	1,007,643	1,927,435	3,773,075	3,259,584	4,297,144	14,624,888
Other individually immaterial non-controlling interest of the Group’s subsidiaries							270,827
Total							14,895,715
Revenue	14,068,614	4,530,725	19,185,380	14,967,239	32,295,418	27,692,186	
Profit (loss)	(1,083,027)	453,304	235,459	678,948	1,918,128	4,366,567	
Other comprehensive income (expense)	274,448	1,786	(24,145)	(24,056)	(428)	-	
Total comprehensive income (expense)	(808,579)	455,090	211,314	654,892	1,917,700	4,366,567	
Profit (loss) allocated to non-controlling interest	(216,605)	181,322	144,666	231,856	959,064	2,183,283	3,483,586
Other individually immaterial non-controlling interest of the Group’s subsidiaries							(159,473)
Total							3,324,113

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Indorama Ventures Public Company Limited and its Subsidiaries
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31 December 2022							
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
<i>(in thousand Baht)</i>							
Dividends to non-controlling interest	-	(69,000)	-	-	(468,264)	-	
Other comprehensive income (expense) allocated to non-controlling interest	68,480	714	(209,080)	209,905	(318,230)	59,206	(189,005)
Other individually immaterial non-controlling interest of the Group's subsidiaries							936
Total							<u><u>(188,069)</u></u>
Cash flows from operating activities	405,106	409,102	1,276,949	982,311	2,932,087	1,548,932	
Cash flows used in investing activities	(485,014)	(131,738)	(1,132,068)	(919,947)	(128,710)	(227,079)	
Cash flows from (used in) financing activities	224,395	(188,710)	(229,267)	(74,323)	(1,778,838)	(1,307,938)	
Net increase (decrease) in cash and cash equivalents	<u>144,487</u>	<u>88,654</u>	<u>(84,386)</u>	<u>(11,959)</u>	<u>1,024,539</u>	<u>13,915</u>	
31 December 2021							
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
<i>(in thousand Baht)</i>							
Non-controlling interest percentage	20.00	40.05	61.44	34.03	50.00	50.00	
Current assets	3,932,225	869,619	4,943,790	5,796,849	6,805,182	8,888,642	
Non-current assets	11,952,475	1,712,272	5,898,783	15,360,317	6,098,642	4,812,753	
Current liabilities	5,106,497	256,584	6,180,727	4,041,803	5,631,480	8,948,828	
Non-current liabilities	5,138,577	88,919	1,371,092	7,281,268	1,074,941	696,304	
Net assets	<u>5,639,626</u>	<u>2,236,388</u>	<u>3,290,754</u>	<u>9,834,095</u>	<u>6,197,403</u>	<u>4,056,263</u>	
Carrying amount of non-controlling interest	508,132	894,607	1,991,850	3,331,220	3,087,014	2,054,654	11,867,477
Other individually immaterial non-controlling interest of the Group's subsidiaries							367,279
Total							<u><u>12,234,756</u></u>

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Indorama Ventures Public Company Limited and its Subsidiaries
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	31 December 2021						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
	<i>(in thousand Baht)</i>						
Revenue	11,484,876	3,163,433	15,211,248	15,084,739	22,118,135	15,410,194	
Profit (loss)	(405,265)	386,295	1,088,820	(62)	1,211,919	1,560,476	
Other comprehensive income (expense)	(32,655)	(1,867)	(2,390)	192	28,512	(9,694)	
Total comprehensive income (expense)	(437,920)	384,428	1,086,430	130	1,240,431	1,550,782	
Profit (loss) allocated to non-controlling interest	(81,053)	154,518	668,971	802	605,960	780,236	2,129,434
Other individually immaterial non- controlling interest of the Group's subsidiaries							(163,719)
Total							1,965,715
Dividends to non- controlling interest	-	(93,000)	-	-	(304,070)	-	
Other comprehensive income (expense) allocated to non- controlling interest	92,275	(747)	220,918	715,137	396,703	215,763	1,640,049
Other individually immaterial non- controlling interest of the Group's subsidiaries							97,231
Total							1,737,280
Cash flows from (used in) operating activities	503,524	629,076	55,888	(13,000)	968,262	(311,983)	
Cash flows from (used in) investing activities	(356,595)	(226,906)	(252,444)	(1,477,327)	111,621	(42,775)	
Cash flows from (used in) financing activities	(534,578)	(259,172)	247,439	1,084,208	(1,100,477)	333,401	
Net increase (decrease) in cash and cash equivalents	(387,649)	142,998	50,883	(406,119)	(20,594)	(21,357)	

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14 Property, plant and equipment

Cost	Note	Consolidated financial statements (in thousand Baht)						Total	
		Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares		Construction in progress
At 1 January 2021		12,996,131	32,227,186	287,476,977	2,792,878	949,455	1,449,751	23,091,627	360,984,005
Additions		185,297	132,932	2,418,663	93,785	8,204	148,388	17,309,038	20,296,307
Acquisitions through business combinations	4	227,906	232,604	1,806,137	5,293	3,384	-	59,987	2,335,311
Transfers		141,257	389,118	9,835,955	256,137	24,886	(3,031)	(10,644,322)	-
Reclassifications		(30,890)	(932)	(471,650)	791	23,241	(8,784)	274,851	(213,373)
Disposals		(23,795)	(160,185)	(1,844,828)	(49,685)	(41,540)	(64,306)	(95,639)	(2,279,978)
Effect of movements in exchange rates		1,021,719	2,411,203	22,552,609	113,354	91,475	64,003	2,530,205	28,784,568
At 31 December 2021		14,517,625	35,231,926	321,773,863	3,212,553	1,059,105	1,586,021	32,525,747	409,906,840
Additions		82,625	440,950	2,047,397	135,665	35,557	471,703	22,370,195	25,584,092
Acquisitions through business combinations	4	1,675,043	3,944,919	22,192,846	176,065	34,766	56,022	1,095,492	29,175,153
Transfers		35,999	1,326,958	19,727,417	217,852	31,545	(10,692)	(21,329,079)	-
Reclassifications		-	21,036	2,389,701	(702,271)	(36,244)	(310,154)	57,840	1,419,908
Disposals		(8,885)	(86,123)	(646,546)	(36,968)	(44,225)	(50,661)	(117,749)	(991,157)
Effect of movements in exchange rates		20,898	(451,088)	2,553,650	(66,902)	10,218	(20,230)	732,070	2,778,616
At 31 December 2022		16,323,305	40,428,578	370,038,328	2,935,994	1,090,722	1,722,009	35,334,516	467,873,452

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	Consolidated financial statements (in thousand Baht)						Total
	Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares	
Depreciation and impairment loss							
At 1 January 2021	(641,861)	(8,687,862)	(85,111,533)	(1,609,601)	(328,910)	(271,436)	(96,693,061)
Depreciation charge for the year	(146,701)	(1,245,144)	(14,665,963)	(378,281)	(98,299)	(41,432)	(16,575,820)
Impairment losses	-	(1,067)	(287,932)	-	-	(1,032)	(290,031)
Reclassifications	2,473	(78,623)	(333,097)	(712)	(1,033)	-	(410,992)
Disposals	-	81,386	1,635,602	44,621	34,111	5,920	1,801,640
Effect of movements in exchange rates	(59,690)	(548,765)	(5,346,193)	(68,936)	(24,675)	(8,666)	(6,061,639)
At 31 December 2021	(845,779)	(10,480,075)	(104,109,116)	(2,012,909)	(418,806)	(316,646)	(118,229,903)
Depreciation charge for the year	(121,304)	(1,580,298)	(18,224,419)	(411,068)	(53,371)	(67,616)	(20,458,076)
Impairment losses	(180,609)	(493,474)	(6,377,737)	(97,692)	(5,354)	(287,542)	(7,723,836)
Reclassifications	(157)	(29,400)	(2,023,641)	626,201	10,568	-	(1,416,429)
Disposals	71	62,696	324,861	34,422	34,846	863	457,759
Effect of movements in exchange rates	(15,573)	61,860	32,306	22,731	(401)	24,641	127,157
At 31 December 2022	(1,163,351)	(12,458,691)	(130,377,746)	(1,838,315)	(432,518)	(646,300)	(147,243,328)
Net book value							
At 31 December 2021	13,671,846	24,751,851	217,664,747	1,199,644	640,299	1,269,375	291,676,937
Owned assets							
At 31 December 2022	15,159,954	27,969,887	239,660,582	1,097,679	658,204	1,075,709	320,630,124
Owned assets							

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During the year 2022, the actual financial performances of some subsidiaries were significantly lower than management's expectations. The management believes that the impairment indications existed in an Asian cash generating unit and some of European cash generating units. Therefore, the Group assessed the recoverable amounts of these cash generating units. For the Asian cash generating unit, the Group assessed the recoverable amount by preparing discounted cash flow to determine the value in use and assessed the fair value less costs of disposal, based on the result of the assessment, the Group recorded an impairment loss on property, plant and equipment and intangible assets on the Asian cash-generating unit which is in the Combined PET segment amounting to Baht 4,285.1 million in the consolidated statement of income for the year ended 31 December 2022 based on the recoverable amount derived from the fair value less costs of disposal as it is higher than the value in use. For the certain European cash generating units which are in the Fibers segment, the Group assessed the recoverable amounts by preparing discounted cash flow to determine the value in use by applying the pre-tax discount rate of 8.5-12.0% and growth rate of 2.0%, based on the result of the assessment, the Group recorded an impairment loss on property, plant and equipment, intangible assets and goodwill on the European cash generating units in the Fibers segment amounting to Baht 4,019.6 million in the consolidated statement of income for the year ended 31 December 2022 (see note 17 and 18).

During 2021, Indorama Polyester Industries Public Company Limited's site in Nakhon Pathom ("IPI-NPK"), a subsidiary, ceased the production line FDY and DTY. The management is of the view that production line FDY and DTY will not be operated in near future and believes that the values of machinery and equipment are impaired. Management has determined the fair value less cost of disposal based on the residual value of related machinery and equipment. Based on the result of this assessment, the Group recorded impairment loss of Baht 74.2 million in the consolidated statement of income for the year ended 31 December 2021.

On 1 August 2020, there was a lightning strike and subsequent flaring at Indorama Ventures Olefins LLC ("IVOL") facility. Consequently, IVOL recorded an impairment loss due to damage of certain machineries of USD 15.2 million (Baht 474.1 million) and insurance income of USD 11.3 million (Baht 352.4 million) in the consolidated statement of income for the year ended 31 December 2020. During 2021, IVOL recorded an additional impairment loss due to damage of machineries from the lightning strike of USD 6.7 million (Baht 215.8 million) and insurance income of USD 19.4 million (Baht 622.1 million) in the consolidated statement of income for the year ended 31 December 2021. The plant was partial operational in November to December 2021, and fully operational from January 2022. During the year ended 31 December 2022, IVOL finalised the insurance claim income for this incident and recorded an additional impairment loss and insurance claim income amounting to USD 8.7 million (Baht 305.0 million) and USD 64.0 million (Baht 2,243.2 million), respectively.

Capitalised borrowing costs relating to the construction of the new plant amounted to Baht 533.7 million (2021: Baht 312.7 million), with a capitalisation rate of 1.25-4.34% (2021: 1.25-8.00%) (see note 34).

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15 Right-of-use assets

	Consolidated financial statements						
	Note	Leasehold land	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Total
<i>(in thousand Baht)</i>							
Cost							
At 1 January 2021		4,756,859	3,296,623	3,204,681	40,070	2,980,883	14,279,116
Additions		44,087	167,128	231,387	22,301	498,284	963,187
Acquisitions through business combinations	4	-	181,643	81,841	-	660	264,144
Remeasurement		(54,401)	(13,762)	(94,249)	-	(8,063)	(170,475)
Reclassifications		26,815	(33,636)	109,453	-	(94,272)	8,360
Disposals		-	(148,714)	(39,985)	(10,789)	(73,074)	(272,562)
Effect of movements in exchange rates		182,352	235,793	250,030	2,836	298,546	969,557
At 31 December 2021		4,955,712	3,685,075	3,743,158	54,418	3,602,964	16,041,327
Additions		293,779	413,900	136,659	300,403	1,747,039	2,891,780
Acquisitions through business combinations	4	540,619	524,055	164,818	-	38,662	1,268,154
Remeasurement		(703,763)	(5,996)	115,184	-	(5,214)	(599,789)
Reclassifications		-	(7,888)	(105,235)	568,767	(457,934)	(2,290)
Disposals		(371)	(214,948)	(9,528)	(29,078)	(86,024)	(339,949)
Effect of movements in exchange rates		(122,732)	(41,076)	94,145	(11,708)	82,293	922
At 31 December 2022		4,963,244	4,353,122	4,139,201	882,802	4,921,786	19,260,155
Depreciation							
At 1 January 2021		(203,237)	(609,825)	(667,393)	(10,913)	(922,143)	(2,413,511)
Depreciation charge for the year		(142,109)	(360,564)	(732,335)	(20,824)	(808,411)	(2,064,243)
Remeasurement		-	-	28,905	-	(2,528)	26,377
Disposals		-	28,275	39,944	9,092	54,692	132,003
Effect of movements in exchange rates		(13,599)	(51,801)	(85,662)	(1,162)	(119,161)	(271,385)
At 31 December 2021		(358,945)	(993,915)	(1,416,541)	(23,807)	(1,797,551)	(4,590,759)
Depreciation charge for the year		(135,923)	(495,967)	(679,206)	(63,906)	(1,064,017)	(2,439,019)
Remeasurement		-	9,461	-	-	-	9,461
Reclassifications		-	(3,399)	41,883	(373,009)	335,080	555
Disposals		371	125,411	9,290	29,078	53,116	217,266
Effect of movements in exchange rates		8,951	7,509	(42,046)	5,437	(43,776)	(63,925)
At 31 December 2022		(485,546)	(1,350,900)	(2,086,620)	(426,207)	(2,517,148)	(6,866,421)
Impairment losses							
At 1 January 2021		-	(294)	-	-	-	(294)
Effect of movements in exchange rates		-	(33)	-	-	-	(33)
At 31 December 2021		-	(327)	-	-	-	(327)
Effect of movements in exchange rates		-	(11)	-	-	-	(11)
At 31 December 2022		-	(338)	-	-	-	(338)
Net book value							
At 31 December 2021		4,596,767	2,690,833	2,326,617	30,611	1,805,413	11,450,241
At 31 December 2022		4,477,698	3,001,884	2,052,581	456,595	2,404,638	12,393,396

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During 2022, depreciation of right-of-use assets of Baht 3.8 million was capitalised in property, plant and equipment (2021: Baht 6.2 million).

16 Leases

As a lessee

The Group leases a number of properties for 1-99 years. The rental is payable as specified in the contract.

Extension options

The Group has extension options on property leases exercisable up to one year before the end of the contract period. The Group assesses at lease commencement date whether it is reasonably certain to exercise the extension options and will regularly reassess so.

<i>Year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Amounts recognised in profit or loss				
Depreciation of right-of-use assets:				
- Leasehold land	135,923	142,109	-	-
- Buildings and building improvements	492,195	354,354	-	-
- Machinery and equipment	679,206	732,335	-	-
- Office furniture, fixtures and equipment	63,906	20,824	-	-
- Transportation equipment	1,064,017	808,411	-	-
Interest on lease liabilities	574,834	445,680	-	-
Expenses relating to short-term leases	138,435	154,054	-	-
Expenses relating to leases of low-value assets	26,007	25,404	-	-

In 2022, total cash outflow for leases of the Group was Baht 3,063.6 million (2021: Baht 2,485.0 million).

17 Goodwill

	<i>Note</i>	Consolidated financial statements	
		2022	2021
		<i>(in thousand Baht)</i>	
Cost			
At 1 January		17,410,642	15,385,817
Acquired through business combinations	4	626,101	274,524
Effect of movements in exchange rates		(69,452)	1,750,301
At 31 December		<u>17,967,291</u>	<u>17,410,642</u>
Impairment loss			
At 1 January		-	-
Impairment loss	14	(79,102)	-
At 31 December		<u>(79,102)</u>	<u>-</u>
Net book value			
At 31 December		<u>17,888,189</u>	<u>17,410,642</u>

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Impairment testing for the cash generating unit containing goodwill

For the purpose of impairment testing, goodwill has been allocated to the cash generating unit or group of cash generating units (“CGU”) identified according to the lowest level within the entity for which information about goodwill is available and monitored for internal management purpose as follows:

	Consolidated financial statements	
	2022	2021
	<i>(in million Baht)</i>	
CGU 1 - Indorama Ventures OGL Holdings LP and its subsidiaries	7,222	6,983
CGU 2 - Avgol Industries 1953 Ltd. and its subsidiaries	4,812	4,653
Others	5,933	5,775
Total	<u>17,967</u>	<u>17,411</u>

The recoverable amounts of the CGU containing goodwill were based on discounted cash flows estimated by managements covering a five-year period. Cash flows beyond the five-year period are extrapolated using the growth rate not exceeding the long-term average growth rate for the business in which CGU operates, consistent with the assumptions that a market participant would make. The discount rate was a pre-tax measure estimated based on the historical industry average weighted-average cost of capital.

2022	CGU1	CGU2
Growth rate (%)	1.0	2.0
Discount rate (%)	9.2	9.6
2021	CGU1	CGU2
Growth rate (%)	1.0	0.0
Discount rate (%)	9.6	8.5

The carrying amount of a European cash generating unit to which goodwill belongs was higher than its recoverable amount, hence, an impairment loss of Baht 79.1 million was recognised and included in the Group’s consolidated statements of income for the years ended 31 December 2022 (2021: nil).

The increase of the discount rate to 10.7% and 16.0% (2021: 17.1% and 14.9%, respectively) in CGU 1 and CGU 2, respectively would remove the remaining headroom for goodwill impairment.

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18 Other intangible assets

Cost	Note	Consolidated financial statements (in thousand Baht)										
		Rights acquired	Supplier contract and relationships	Software licenses	Technology licenses and knowhow	Customer contracts and relationships	Trade name and trademarks	Chemicals exchange contract	Capitalised development expenditure	Environment rights	Intangible assets under development	Total
At 1 January 2021		231,982	7,157,912	645,909	11,274,127	18,300,183	3,206,708	300,370	1,137,634	15,087	1,981,495	44,251,407
Additions		137	-	64,852	-	7,160	-	-	86,773	616,842	2,358,964	3,134,728
Acquisitions through business combinations		-	-	-	133,178	-	25,980	-	-	-	-	159,158
• Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex Services, S. de R.L. de C.V.	4(i)	-	-	-	-	-	-	-	-	-	-	-
• Recycled Polyethylene Terephthalate assets of CarbonLIFE Holdings LLC and its subsidiaries	4(ii)	-	-	-	-	43,537	-	-	-	-	-	43,537
Transfer		-	-	816	-	-	-	-	1,826	-	(2,642)	-
Reclassifications		124	-	13,593	-	-	-	-	-	-	-	13,717
Write-off		-	-	(300)	-	-	-	-	-	(351,973)	(4,293)	(356,566)
Effect of movements in exchange rates		18,563	554,306	45,031	815,990	1,620,978	308,203	33,827	66,869	2,431	453	3,466,651
At 31 December 2021 and 1 January 2022		250,806	7,712,218	769,901	12,223,295	19,971,858	3,540,891	334,197	1,293,102	282,387	4,333,977	50,712,632
Additions		12,901	-	369,728	2,006	3,653	1,244	-	81,805	828,959	2,525,846	3,826,142
Acquisitions through business combinations		-	-	-	-	-	-	-	-	-	-	-
• Ngoc Nghia Industry - Service - Trading Joint Stock Company	4(v)	-	44,156	632	-	542,311	-	-	-	-	-	587,099
• Filatura Tollegno 1900 S.r.l.	4(vi)	-	-	-	-	-	4,950	-	-	-	-	4,950
Transfer		-	-	1,577,102	-	-	-	-	-	-	(1,577,102)	-
Reclassifications		184	-	9,192	(23,027)	(1,550)	-	-	-	(244)	-	(15,445)
Write-off		(184)	-	(10,452)	-	-	-	-	(5)	(401,996)	(1,029)	(413,666)
Effect of movements in exchange rates		3,538	117,187	(14,879)	196,932	291,709	(15,504)	11,424	(24,068)	(9,890)	(234)	556,215
At 31 December 2022		267,245	7,873,561	2,701,224	12,399,206	20,807,981	3,531,581	345,621	1,350,834	699,216	5,281,458	55,257,927

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	Note	Consolidated financial statements (in thousand Baht)										
		Rights acquired	Supplier contract and relationships	Software licenses	Technology licenses and knowhow	Customer contracts and relationships	Trade name and trademarks	Chemicals exchange contract	Capitalised development expenditure	Environment rights	Intangible assets under development	Total
Amortisation												
At 1 January 2021		(80,868)	(2,732,132)	(457,940)	(3,592,849)	(4,684,465)	(867,907)	(138,382)	(430,289)	(60)	-	(12,984,892)
Amortisation charge for the year		(18,409)	(443,270)	(71,820)	(659,557)	(1,443,571)	(298,393)	(16,842)	(116,460)	-	-	(3,068,322)
Write-off		-	-	261	-	-	-	-	-	-	-	261
Reclassifications		-	-	-	-	355,474	-	-	-	-	-	355,474
Effect of movements in exchange rates		(5,702)	(210,237)	(33,394)	(321,340)	(411,609)	(99,026)	(16,332)	(26,233)	(1)	-	(1,123,874)
At 31 December 2021 and 1 January 2022		(104,979)	(3,385,639)	(562,899)	(4,573,746)	(6,184,171)	(1,265,326)	(171,556)	(572,982)	(61)	-	(16,821,353)
Amortisation charge for the year		(19,171)	(396,978)	(212,015)	(694,721)	(1,042,997)	(307,099)	(18,367)	(122,416)	-	-	(2,813,764)
Write-off		-	-	3,241	-	-	-	-	1	-	-	3,242
Reclassifications		-	-	-	(19,040)	-	-	-	-	60	-	(18,980)
Effect of movements in exchange rates		187	(22,713)	(73)	(85,960)	(5,706)	41,699	(5,601)	13,126	1	-	(65,040)
At 31 December 2022		(123,963)	(3,805,330)	(771,740)	(5,373,467)	(7,232,874)	(1,530,726)	(195,524)	(682,271)	-	-	(19,715,895)
Impairment losses												
At 1 January 2021		(532)	-	(887)	-	(34,450)	-	-	-	-	-	(35,869)
Effect of movements in exchange rates		206	-	343	-	13,341	-	-	-	-	-	13,890
At 31 December 2021 and 1 January 2022		(326)	-	(544)	-	(21,109)	-	-	-	-	-	(21,979)
Impairment losses	14	(25,985)	-	(46,505)	(229,323)	(192,240)	(174,603)	-	(161,308)	-	(12,216)	(842,180)
Effect of movements in exchange rates		112	-	191	236	5,746	180	-	166	-	13	6,644
At 31 December 2022		(26,199)	-	(46,858)	(229,087)	(207,603)	(174,423)	-	(161,142)	-	(12,203)	(857,515)
Net book value												
At 31 December 2021		145,501	4,326,579	206,464	7,649,549	13,766,578	2,275,565	162,641	720,120	282,326	4,333,977	33,869,300
At 31 December 2022		117,083	4,068,231	1,882,626	6,796,652	13,367,504	1,826,432	150,097	507,421	699,216	5,269,255	34,684,517

The amortisation of other intangible assets is allocated to the cost inventory and is recognised as cost of sales of goods amounting to Baht 1,238.6 million (2021: Baht 1,440.3 million) and administrative expenses amounting to Baht 1,575.2 million (2021: Baht 1,628.0 million).

Capitalised borrowing costs related to the intangible assets under development are amounted to Baht 94.8 million (2021: Baht 66.3 million) (see note 34).

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19 Other non-current assets

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
			<i>(in thousand Baht)</i>		
Advance tax credit	28	3,864,308	572,367	-	-
Advance payment on purchase of property, plant and equipment		1,684,173	1,012,389	771,920	-
Refundable deposits		601,388	387,688	-	-
Finance lease receivable from related party	5	378,646	366,130	-	-
Others		754,774	980,066	262,169	-
Total		7,283,289	3,318,640	1,034,089	-

20 Interest-bearing liabilities

Certain interest-bearing liabilities require specific covenants such as maintenance of financial ratios, the declaration and payment of dividends, acquisition of major fixed assets, additional indebtedness, and share transfers.

Interest-bearing liabilities comprise the following classifications.

	Consolidated financial statements						
		2022		Total	2021		
		Secured	Unsecured		Secured	Unsecured	Total
			<i>(in thousand Baht)</i>				
Bank overdrafts		691,673	3,060,138	3,751,811	196,635	2,046,820	2,243,455
Short-term loans from financial institutions		9,138,348	18,357,666	27,496,014	8,689,229	15,686,076	24,375,305
Long-term loans from financial institutions		10,990,929	119,975,162	130,966,091	14,078,104	96,585,696	110,663,800
Lease liabilities		10,900,286	-	10,900,286	10,343,260	-	10,343,260
Debentures		-	81,199,128	81,199,128	-	76,600,483	76,600,483
Total interest-bearing liabilities		31,721,236	222,592,094	254,313,330	33,307,228	190,919,075	224,226,303

	Separate financial statements						
	Note	Secured	2022		Total	2021	
			Unsecured	Total		Secured	Unsecured
			<i>(in thousand Baht)</i>				
Long-term loans from - financial institutions		-	2,536,088	2,536,088	-	9,210,963	9,210,963
- related party	5	-	8,000,000	8,000,000	-	6,000,000	6,000,000
Debentures		-	63,355,283	63,355,283	-	57,905,633	57,905,633
Total interest-bearing liabilities		-	73,891,371	73,891,371	-	73,116,596	73,116,596

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<i>Assets pledged as security for liabilities At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Trade accounts receivable	20,678,578	23,571,475	-	-
Inventories	33,382,246	28,232,001	-	-
Property, plant and equipment	23,097,049	27,640,863	-	-
Right-of-use assets	12,393,396	11,450,241	-	-
Total	<u>89,551,269</u>	<u>90,894,580</u>	<u>-</u>	<u>-</u>

Changes in liabilities arising from financing activities

	<i>Note</i>	Consolidated financial statements	Separate financial statements
		<i>(in thousand Baht)</i>	
Bank overdrafts and short-term loans from financial institutions and former shareholder of UCY			
2022			
At 1 January		26,618,760	-
Changes from financing cash flows			
- Proceeds from bank overdrafts and short-term loans from financial institutions		363,172,925	-
- Repayments of bank overdrafts and short-term loans from financial institutions and former shareholder of UCY		(359,560,386)	-
Acquisitions through business combinations	4	1,309,921	-
Unrealised gain on exchange rate		(293,395)	-
At 31 December		<u>31,247,825</u>	<u>-</u>
2021			
At 1 January		20,725,611	-
Changes from financing cash flows			
- Proceeds from bank overdrafts and short-term loans from financial institutions		306,211,181	4,341,910
- Repayments of bank overdrafts and short-term loans from financial institutions		(300,972,312)	(4,341,910)
Acquisitions through business combinations	4	75,750	-
Reclassification		(376,877)	-
Unrealised loss on exchange rate		955,407	-
At 31 December		<u>26,618,760</u>	<u>-</u>

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	<i>Note</i>	Consolidated financial statements <i>(in thousand Baht)</i>	Separate financial statements
Long-term loans from financial institutions and related party			
2022			
At 1 January		110,663,800	15,210,963
Changes from financing cash flows			
- Proceeds from long-term loans from financial institutions		45,897,119	-
- Proceeds from long-term loans from related party		-	2,000,000
- Repayments of long-term loans from financial institutions		(29,771,794)	(6,775,996)
- Additional deferred financing fee of long-term loans from financial institutions		(379,487)	-
Acquisitions through business combinations	4	399,246	-
Amortisation of deferred financing fee of long-term loans from financial institutions		315,965	17,800
Unrealised loss on exchange rate		3,841,242	83,321
At 31 December		130,966,091	10,536,088
Less current portion of long-term loans from financial institutions and related party		(28,501,962)	(2,536,088)
Net long-term loans from financial institutions and related party		102,464,129	8,000,000
2021			
At 1 January		108,367,785	8,988,664
Changes from financing cash flows			
- Proceeds from long-term loans from financial institutions		18,946,718	-
- Proceeds from long-term loans from related party		-	6,000,000
- Repayments of long-term loans from financial institutions		(26,654,261)	(116,296)
- Additional deferred financing fee of long-term loans from financial institutions		(45,319)	-
Acquisitions through business combinations	4	162,446	-
Reclassification		232,335	-
Amortisation of deferred financing fee of long-term loans from financial institutions		210,414	13,022
Unrealised loss on exchange rate		9,443,682	325,573
At 31 December		110,663,800	15,210,963
Less current portion of long-term loans from financial institutions and related party		(9,587,605)	(771,511)
Net long-term loans from financial institutions and related party		101,076,195	14,439,452

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On 1 April 2022, the Group, through an indirect subsidiary, utilised a syndicated unsecured loan agreement with several financial institutions for a loan facility of USD 750.0 million, which the outstanding balance as of 31 December 2022 is USD 747.2 million (Baht 25,826.9 million). Such loan will be repaid on quarterly basis until March 2028, with interest rate as stipulated in the agreement.

As at 31 December 2022, the Group and the Company had unutilised credit facilities totaling Baht 61,706.9 million and Baht 8,752.2 million, respectively (2021: Baht 41,485.5 million and Baht 8,563.5 million, respectively).

	Consolidated financial statements	Separate financial statements
	<i>(in thousand Baht)</i>	
Debentures		
2022		
At 1 January	76,600,483	57,905,633
Changes from financing cash flows		
- Proceeds from issuance of debentures	12,000,000	12,000,000
- Repayment of debentures	(7,756,431)	(6,545,000)
- Increase in deferred financing fee of debentures	(19,570)	(19,570)
Amortisation of deferred financing fee of debentures	40,146	14,220
Unrealised loss on exchange rate	334,500	-
At 31 December	81,199,128	63,355,283
Less current portion of debentures	(5,274,945)	(4,086,621)
Net debentures	75,924,183	59,268,662
2021		
At 1 January	72,208,998	54,412,231
Changes from financing cash flows		
- Proceeds from issuance of debentures	10,000,000	10,000,000
- Repayment of debentures	(7,705,824)	(6,500,000)
- Increase in deferred financing fee of debentures	(19,234)	(19,234)
Amortisation of deferred financing fee of debentures	39,708	12,636
Unrealised loss on exchange rate	2,076,835	-
At 31 December	76,600,483	57,905,633
Less current portion of debentures	(7,783,798)	(6,532,924)
Net debentures	68,816,685	51,372,709

On 1 April 2022, the Company issued Baht 12 billion of triple-tranche bonds no. 1/2022 (“the Bonds”) at par value and offering price of Baht 1,000 per unit. The Bonds were offered to institutional and/or high-net-worth investors. The Bonds are unsubordinated and unsecured debentures with a debenture holders’ representative in the name-registered certificate with details below:

- The 1st tranche of the Bonds due in 2027 with a tenor of 5 years for a principal amount of Baht 4.3 billion and a coupon rate of 2.66% per annum,
- The 2nd tranche of the Bonds due in 2029 with a tenor of 7 years for a principal amount of Baht 2.7 billion and a coupon rate of 3.24% per annum, and
- The 3rd tranche of the Bonds due in 2032 with a tenor of 10 years for a principal amount of Baht 5.0 billion and a coupon rate of 3.65% per annum.

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On 3 November 2021, the Company issued and offered a Baht 10 billion triple-tranche Sustainability-Linked Bonds (“SLBs”) No.1/2021 at par value and offering price of Baht 1,000 per unit. SLBs were offered both to institutions and high-net-worth investors. SLBs are unsubordinated and unsecured debentures with a debenture holders’ representative in the name-registered certificate.

21 Trade accounts payable

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
		<i>(in thousand Baht)</i>			
Related parties	5	121,432	225,422	-	-
Other parties		106,599,309	90,650,451	-	-
Total		106,720,741	90,875,873	-	-

22 Other current liabilities

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
		<i>(in thousand Baht)</i>			
Accrued operating expenses		10,393,506	9,738,230	78,235	71,113
Other payables		3,937,096	4,938,305	335,848	45,850
Materials price adjustments payable		2,478,018	1,847,055	-	-
Contract liabilities	27	1,715,062	1,216,295	-	-
Interest payable		1,086,170	693,496	388,445	332,613
Value added tax payable		860,073	449,371	-	-
Withholding tax payable		600,858	609,046	-	-
Payable for acquiring joint operation	12	209,344	501,298	-	-
Others		1,878,423	1,163,139	2,837	2,665
Total		23,158,550	21,156,235	805,365	452,241

23 Non-current provisions for employee benefits

		Consolidated financial statements		Separate financial statements	
<i>At 31 December</i>		2022	2021	2022	2021
		<i>(in thousand Baht)</i>			
Statement of financial position					
Non-current provisions for:					
Post-employment benefits:					
Thailand legal severance plan		921,381	795,758	-	-
Defined benefit plans established in Europe		2,673,013	3,512,890	-	-
Defined benefit plans established in Americas		1,923,064	2,582,175	-	-
Defined benefit plans established in rest of the world		571,915	588,871	-	-
Thailand other long-term employee benefits		83,451	19,996	-	-
Total		6,172,824	7,499,690	-	-

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Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

<i>For the year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Statement of income:				
Recognised in profit or loss:				
Post-employment benefits:				
Thailand legal severance plan	63,154	56,242	-	-
Defined benefit plans established in Europe	296,722	313,832	-	-
Defined benefit plans established in Americas	458,154	450,065	-	-
Defined benefit plans established in rest of the world	58,108	96,400	-	-
Thailand other long-term employee benefits	74,417	9,835	-	-
Total	950,555	926,374	-	-
Recognised in other comprehensive income:				
Remeasurement gains:				
Actuarial gains	(3,385,320)	(942,365)	-	-
Losses on plan assets excluding amounts included in interest income	1,649,017	186,720	-	-
Others	-	4	-	-
Total	(1,736,303)	(755,641)	-	-

Thailand legal severance plan and other long-term employee benefits

The subsidiaries registered in Thailand operate a defined benefit plan based on the requirement of Thai Labour Protection Act B.E. 2541 (1998) to provide retirement benefits to employees based on pensionable remuneration and length of service. The subsidiaries registered in Thailand also operate long service award plans as part of other long-term employee benefits to certain employees based on remuneration and length of service.

These defined benefit plans expose the Group to actuarial risks, such as interest rate risk and longevity risk.

The Group expects to pay Baht 308.3 million in contributions to its defined benefit plans in 2023.

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<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
At 1 January	815,754	714,199	-	-
Recognised in profit or loss:				
Current service costs	92,488	50,228	-	-
Past service costs	25,656	-	-	-
Interest on obligation	12,794	8,388	-	-
Actuarial losses for other long-term employee benefits	6,633	7,461	-	-
	<u>137,571</u>	<u>66,077</u>	<u>-</u>	<u>-</u>
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Demographic assumptions	10,689	-	-	-
- Financial assumptions	(42,497)	(27,354)	-	-
- Experience adjustment	133,511	102,165	-	-
	<u>101,703</u>	<u>74,811</u>	<u>-</u>	<u>-</u>
Others				
Benefits paid by the plan	(50,196)	(39,333)	-	-
	<u>(50,196)</u>	<u>(39,333)</u>	<u>-</u>	<u>-</u>
At 31 December	<u>1,004,832</u>	<u>815,754</u>	<u>-</u>	<u>-</u>

Defined benefit plans established in Europe

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 228.8 million (EUR 6.0 million, GHC 2.0 million) in contributions to its defined benefit plans in 2023.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	2,774,093	3,412,552	-	-
Effect of movement in exchange rates	(101,080)	100,338	-	-
Statement of financial position obligation	<u>2,673,013</u>	<u>3,512,890</u>	<u>-</u>	<u>-</u>

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Equity securities	42,520	53,130	-	-
Insurance contract	1,923,435	2,695,665	-	-
Interest bearing securities	71,976	71,245	-	-
Total	<u>2,037,931</u>	<u>2,820,040</u>	<u>-</u>	<u>-</u>

Defined benefit plans established in Americas

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 33.4 million (USD 0.4 million, BRL 3.2 million) in contributions to its defined benefit plans in 2023.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	1,793,042	2,310,866	-	-
Effect of movement in exchange rates	130,022	271,309	-	-
Statement of financial position obligation	<u>1,923,064</u>	<u>2,582,175</u>	<u>-</u>	<u>-</u>

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
At 1 January	6,249,069	5,813,594	-	-
Recognised in profit or loss:				
Current service costs	331,822	332,675	-	-
Past service costs	-	5,388	-	-
Interest on obligation	209,800	174,884	-	-
Actuarial losses (gains)	(2,564)	982	-	-
	<u>539,058</u>	<u>513,929</u>	<u>-</u>	<u>-</u>
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Demographic assumptions	(5,229)	(6,232)	-	-
- Financial assumptions	(1,837,744)	(400,549)	-	-
- Experience adjustment	74,574	91,732	-	-
- Others	111	-	-	-
	<u>(1,768,288)</u>	<u>(315,049)</u>	<u>-</u>	<u>-</u>

Notes to the financial statements

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<i>Present value of the defined benefit obligations</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Others					
Defined benefit obligations assumed through business combinations	4(iv)	67,498	1,950	-	-
Benefits paid by the plan		(467,314)	(410,651)	-	-
Expected employees contribution		8,468	7,164	-	-
Effect of movements in exchange rates		258,742	638,132	-	-
		<u>(132,606)</u>	<u>236,595</u>	-	-
At 31 December		<u>4,887,233</u>	<u>6,249,069</u>	-	-
Fair value of plan assets					
		Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
At 1 January		3,666,894	3,121,142	-	-
Recognised in profit or loss:					
Interest income		113,173	89,016	-	-
Others		(32,269)	(25,152)	-	-
		<u>80,904</u>	<u>63,864</u>	-	-
Recognised in other comprehensive income:					
Return on plan assets excluding amounts included in interest income		<u>(656,387)</u>	<u>247,244</u>	-	-
Others					
Benefits paid by the plan		(426,347)	(367,579)	-	-
Contribution paid into the plan		170,384	235,400	-	-
Effect of movements in exchange rates		128,721	366,823	-	-
		<u>(127,242)</u>	<u>234,644</u>	-	-
At 31 December		<u>2,964,169</u>	<u>3,666,894</u>	-	-
Statement of financial position obligation at 31 December		<u>1,923,064</u>	<u>2,582,175</u>	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<i>(in thousand Baht)</i>				
Equity securities	1,725,337	2,174,819	-	-
Government bonds	4,210	4,026	-	-
Interest bearing securities	1,209,403	1,457,731	-	-
Others	25,219	30,318	-	-
Total	<u>2,964,169</u>	<u>3,666,894</u>	-	-

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Indorama Ventures Public Company Limited and its Subsidiaries
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Defined benefit plans established in rest of the world

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 13.0 million in contributions to its defined benefit plans in 2023.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	609,116	538,991	-	-
Effect of movements in exchange rates	(37,201)	49,880	-	-
Statement of financial position obligation	571,915	588,871	-	-
	<i>(in thousand Baht)</i>			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Present value of the defined benefit obligations	<i>(in thousand Baht)</i>			
At 1 January	624,519	529,057	-	-
Recognised in profit or loss:				
Current service costs	31,293	67,433	-	-
Past service costs	(14,738)	-	-	-
Interest on obligation	39,952	36,498	-	-
Actuarial (gains) losses	4,046	(5,296)	-	-
	60,553	98,635	-	-
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Financial assumptions	1,730	(20,791)	-	-
- Experience adjustment	3,579	(237)	-	-
- Others	-	(576)	-	-
	5,309	(21,604)	-	-
Others				
Benefits paid by the plan	(42,012)	(34,494)	-	-
Effect of movements in exchange rates	(39,622)	52,925	-	-
	(81,634)	18,431	-	-
At 31 December	608,747	624,519	-	-
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Fair value of plan assets	<i>(in thousand Baht)</i>			
At 1 January	35,648	32,212	-	-
Recognised in profit or loss:				
Interest income	2,445	2,236	-	-
	2,445	2,236	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Recognised in other comprehensive income:				
Return on plan assets excluding amounts included in interest income	(638)	(130)	-	-
Others				
Contributions paid into the plan	8,412	2,312	-	-
Benefits paid by the plan	(6,615)	(4,027)	-	-
Effect of movements in exchange rates	(2,420)	3,045	-	-
	(623)	1,330	-	-
At 31 December	36,832	35,648	-	-
Statement of financial position obligation at 31 December	571,915	588,871	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Insurance contract	21,725	22,157	-	-
Others	15,107	13,491	-	-
Total	36,832	35,648	-	-

<i>Principal actuarial assumptions</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	(%)		(%)	

Thailand legal severance plan

Discount rate	2.50	1.75	-	-
Future salary increases	4.00-5.50	4.00-5.50	-	-
Employee turnover	0.00-40.00	0.00-40.00	-	-

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2022, the weighted-average duration of the defined benefit obligation was 7.00 years (2021: 8.00 years).

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	(%)		(%)	
<i>Defined benefit plans established in Europe</i>				
Discount rate	0.03-8.75	(0.02)-23.10	-	-
Expected return on plan assets	0.00-3.95	1.00-1.50	-	-
Future salary increases	0.02-15.00	0.80-18.00	-	-
Employee turnover	0.00-18.90	0.00-14.87	-	-

At 31 December 2022, the weighted-average duration of the defined benefit obligation were 7.80 to 25.00 years (2021: 8.50 to 26.90 years).

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	(%)		(%)	
<i>Defined benefit plans established in Americas</i>				
Discount rate	2.20-9.60	2.30-7.85	-	-
Expected return on plan assets	5.25-9.60	2.50-5.75	-	-
Future salary increases	2.50-4.58	2.50-4.75	-	-
Employee turnover	4.41-32.70	3.66-25.00	-	-

At 31 December 2022, the weighted-average duration of the defined benefit obligation were 1.01 to 13.60 years (2021: 1.46 to 11.55 years).

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	(%)		(%)	
<i>Defined benefit plans established in rest of the world</i>				
Discount rate	6.20-7.50	6.18-7.50	-	-
Expected return on plan assets	7.50	6.55	-	-
Future salary increases	4.50-8.00	3.00-8.00	-	-
Employee turnover	0.00-15.00	0.00-15.00	-	-

At 31 December 2022, the weighted-average duration of the defined benefit obligation were 7.00 to 15.01 years (2021: 7.00 to 15.21 years).

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

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At 31 December	Consolidated financial statements			
	0.5% increase in assumption		0.5% decrease in assumption	
	2022	2021	2022	2021
	(in million Baht)			
Thailand legal severance plan				
Discount rate	(28)	(29)	29	31
Future salary increases	28	30	(27)	(29)
Employee turnover	(29)	(31)	31	33
Defined benefit plans established in Europe				
Discount rate	(372)	(604)	428	707
Expected return on plan assets	(14)	(23)	16	27
Future salary increases	44	66	(42)	(64)
Employee turnover	(10)	(14)	11	15
Defined benefit plans established in Americas				
Discount rate	(289)	(218)	317	232
Expected return on plan assets	(1)	(26)	1	26
Future salary increases	21	87	(24)	(85)
Employee turnover	(1)	(1)	1	1
Defined benefit plans established in rest of the world				
Discount rate	(21)	(20)	22	20
Future salary increases	23	22	(22)	(22)
Employee turnover	(1)	(5)	1	6

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

24 Share capital

Movements of share capital for the year ended 31 December 2022 and 2021 were as follows:

	Consolidated and Separate financial statements								
	Par value per share (in Baht)	2022		2021		2022		2021	
		Authorised share capital		Issued and paid-up share capital		Authorised share capital		Issued and paid-up share capital	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	
	(thousand shares / in thousand Baht)								
At 1 January									
- ordinary shares	1	5,666,010	5,666,010	5,614,552	5,614,552	5,666,010	5,666,010	5,614,552	5,614,552
Reduction of the authorised share capital	1	(51,458)	(51,458)	-	-	-	-	-	-
Increase of the authorised share capital	1	56,150	56,150	-	-	-	-	-	-
At 31 December - ordinary shares	1	5,670,702	5,670,702	5,614,552	5,614,552	5,666,010	5,666,010	5,614,552	5,614,552

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At the annual general meeting of the shareholders of the Company held on 26 April 2022, the shareholders approved the following resolutions:

- (a) The reduction of the authorised but unissued share capital from Baht 5,666,010,449 to Baht 5,614,551,908 by cancelling registered but unissued share capital in the amount of Baht 51,458,541 (divided into 51,458,541 shares at par value Baht 1 per share).
- (b) The increase in the authorised share capital from Baht 5,614,551,908 to Baht 5,670,701,908 by register 56,150,000 unissued ordinary shares with a par value of Baht 1 per share to accommodate the exercise of the the Company's warrants as mentioned in note 24(c).

The registrations of the reduction and the increase of authorised share capital was approved by the Department of Business Development, Ministry of Commerce on 6 May 2022 and 9 May 2022 respectively.

- (c) The issuance of 2 tranches of up to 56,150,000 warrants to purchase the newly issued ordinary shares of the Company were as follows:
 1. The no.1 warrants (the "IVL ESOP-W1 warrants") of up to 19,950,000 units, to be allocated to directors and employees of the Company and the Subsidiaries who have worked with the Company and the Subsidiaries at least 15 years, at no cost, at the allocation ratio of every 1 unit of IVL ESOP-W1 warrants for 1 ordinary share. The term of IVL ESOP-W1 warrants will be 5 years from the issuance date and the exercise price will be at Baht 37.74 per share.
 2. The no.2 warrants (the "IVL ESOP-W2 warrants") of up to 36,200,000 units, to be allocated to directors and employees of the Company and the Subsidiaries who have worked with the Company and the Subsidiaries for less than 15 years, at no cost, at the allocation ratio of every 1 unit of IVL ESOP-W2 warrants for 1 ordinary share. The term of IVL ESOP-W2 warrants will be 5 years from the issuance date and the exercise price will be at Baht 44.39 per share.

At the reporting date of the financial statements, the Company has not yet issued and granted any IVL ESOP-W1 warrants or IVL ESOP-W2 warrants.

25 Legal reserve

Section 116 of the Public Limited Companies Act B.E. 2535 (1992) requires that a public company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward, to a reserve account ("legal reserve"), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

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26 Subordinated perpetual debentures

On 8 November 2019, the Company has issued and offered Subordinated Perpetual Debentures of the Company No. 1/2019 (the “Debentures”) in the amount of Baht 15,000 million at par value with bullet payment upon dissolution of the Company or upon the exercise of the Company’s early redemption right per conditions as stipulated in the terms and conditions of the Debentures. The Debentures are unsecured and unconvertible. The Debentures bear interest at 5% per annum for the first to the fifth years; and thereafter, the interest rate for the Debentures shall be in accordance with the details stated under the terms and conditions in relation to the Debentures. The interest is paid on a quarterly basis. However, the Company has the sole right to unconditionally defer interest and cumulative interest payments to the Debentures holders without time and deferral amount limitation. If the Company defers the interest payment, the Company shall not redeem, reduce, cancel, acquire or buy-back for any consideration on any instrument or security issued by the Company which rank *pari passu* or junior to the Debentures and shall not declare and make any dividend payment.

27 Segment information and disaggregation of revenue

(a) Segment information

The Group’s reportable segments, as described below, represent the Group’s strategic divisions. The strategic divisions offer different products, and are managed separately because they require different technology and marketing strategies. For each of the strategic divisions, the chief operating decision maker (“CODM”) reviews internal management reports on at least a quarterly basis.

Segment 1	Manufacture and distribution of PET value chain comprising PX, PTA, PET, and Recycling (Integrated PET), specialty PET-related chemicals comprising PIA and NDC (Specialty Chemicals) and PET preforms and packaging (Packaging) (“Combined PET”)
Segment 2	Manufacture and distribution of integrated EG, integrated purified EO, PO/MTBE and integrated surfactants comprising EOA, LAB and others (“Integrated Oxides and Derivatives”)
Segment 3	Manufacture and distribution of polyester, rayon, nylon, polypropylene, composites and worsted wool fibers, for three end-use segments: mobility, lifestyle and hygiene (“Fibers”)

There are varying levels of integration between reportable segments. This integration includes sales of goods.

Information regarding the results of each reportable segment is included below. Performance is measured based on segment profit being profit/(loss) before depreciation and amortisation, finance income, finance costs and tax expense and others, as included in the internal management reports that are reviewed by the Group’s CODM. Segment profit is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments.

In presenting information on the basis of information about geographical areas, segment revenue is based on the geographical location of customers. Segment assets are based on the geographical location of the assets.

The Group’s main revenue is derived from contracts with customers and recognised at a point in time.

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Year ended 31 December 2022	Consolidated financial statements					Total
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	
<i>Information about reportable segments</i>						
External revenue	382,881,785	143,587,829	129,794,419	-	2,415	656,266,448
Inter-segment revenue	22,074,948	4,107,826	1,410,643	(27,593,417)	-	-
Total segment revenue	404,956,733	147,695,655	131,205,062	(27,593,417)	2,415	656,266,448
<i>Disaggregation of revenue from sales of goods</i>						
Primary geographical markets						
Thailand	16,239,081	119,572	4,854,723	-	2,415	21,215,791
Americas	161,117,441	133,669,607	34,347,290	-	-	329,134,338
Europe	100,022,718	1,453,219	44,602,277	-	-	146,078,214
Rest of the world	105,502,545	8,345,431	45,990,129	-	-	159,838,105
Total segment revenue	382,881,785	143,587,829	129,794,419	-	2,415	656,266,448
Net foreign exchange gain (loss)	383,441	46,823	270,042	(1,889,546)	-	(1,189,240)
Unallocated revenue	-	-	-	-	10,189,438	10,189,438
Total revenue	405,340,174	147,742,478	131,475,104	(29,482,963)	10,191,853	665,266,646
Cost of sales of goods	325,371,205	108,432,550	114,308,022	(27,676,550)	-	520,435,227
Distribution costs and administrative expenses	31,785,917	15,968,370	11,160,054	(5,827,702)	-	53,086,639
Unallocated expenses	-	-	-	-	7,972,862	7,972,862
Total expenses	357,157,122	124,400,920	125,468,076	(33,504,252)	7,972,862	581,494,728

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Year ended 31 December 2022	Consolidated financial statements					Total
	Combined PET	Integrated Oxides and Derivatives	Fibers	Eliminations	Unallocated	
	<i>(in thousand Baht)</i>					
Segment profit before depreciation and amortisation, finance costs, tax expense, and others	48,183,052	23,341,558	6,007,028	4,021,289	2,218,991	83,771,918
Depreciation and amortisation						(25,721,404)
Impairment loss determined in accordance with TFRS 9, net						(41,594)
Impairment loss of property, plant and equipment, goodwill and other intangible assets						(8,645,118)
Gain on disposal of assets						311,281
Share of net profit (loss) of associate and joint ventures, net of tax						(22,761)
Finance income						946,764
Finance costs						(10,495,196)
Profit before tax expense						40,103,890
Tax expense						(5,773,693)
Profit for the year						34,330,197

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<i>At / for the year ended 31 December 2022</i>	Consolidated financial statements					Total
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	
Trade accounts receivable	34,340,548	13,117,789	10,649,558	(7,875,394)	-	50,232,501
Inventories	68,451,856	22,490,757	25,122,531	-	-	116,065,144
Property, plant and equipment	139,554,736	120,888,380	58,354,400	-	-	318,797,516
Unallocated assets	-	-	-	-	138,783,230	138,783,230
Total assets	242,347,140	156,496,926	94,126,489	(7,875,394)	138,783,230	623,878,391
Trade accounts payable	72,846,886	17,926,573	21,245,900	(5,473,152)	-	106,546,207
Unallocated liabilities	-	-	-	-	316,446,802	316,446,802
Total liabilities	72,846,886	17,926,573	21,245,900	(5,473,152)	316,446,802	422,993,009
Capital expenditure and investments	15,487,802	50,656,067	5,932,503	-	3,416,373	75,492,745

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Year ended 31 December 2021	Consolidated financial statements					Total
	Combined PET	Integrated Oxides and Derivatives	Fibers	Eliminations	Unallocated	
	<i>(in thousand Baht)</i>					
Information about reportable segments						
External revenue	275,931,100	75,866,252	116,310,339	-	627	468,108,318
Inter-segment revenue	17,539,240	4,574,212	794,229	(22,907,681)	-	-
Total segment revenue	293,470,340	80,440,464	117,104,568	(22,907,681)	627	468,108,318
Disaggregation of revenue from sales of goods						
Primary geographical markets						
Thailand	14,082,954	20,092	4,047,516	-	627	18,151,189
Americas	110,122,689	65,034,263	30,641,541	-	-	205,798,493
Europe	83,886,282	1,827,567	37,689,816	-	-	123,403,665
Rest of the world	67,839,175	8,984,330	43,931,466	-	-	120,754,971
Total segment revenue	275,931,100	75,866,252	116,310,339	-	627	468,108,318
Unallocated revenue	-	-	-	-	4,748,889	4,748,889
Total revenue	293,470,340	80,440,464	117,104,568	(22,907,681)	4,749,516	472,857,207
Cost of sales of goods	227,140,525	59,739,876	98,728,433	(22,795,207)	-	362,813,627
Distribution costs and administrative expenses	24,719,701	9,486,521	10,070,665	(2,858,720)	-	41,418,167
Net foreign exchange (gain) loss	634,214	12,699	(83,000)	2,704,701	-	3,268,614
Unallocated expenses	-	-	-	-	1,480,138	1,480,138
Total expenses	252,494,440	69,239,096	108,716,098	(22,949,226)	1,480,138	408,980,546

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

Year ended 31 December 2021	Consolidated financial statements					Total
	Combined PET	Integrated Oxides and Derivatives	Fibers	Eliminations	Unallocated	
	<i>(in thousand Baht)</i>					
Segment profit before depreciation and amortisation, finance costs, tax expense, and others	40,975,900	11,201,368	8,388,470	41,545	3,269,378	63,876,661
Depreciation and amortisation						(21,736,689)
Impairment loss determined in accordance with TFRS 9, net						(97,072)
Impairment loss of property, plant and equipment						(290,031)
Loss on disposal of assets						(51,190)
Share of profit of joint ventures, net of tax						160,235
Finance income						215,744
Finance costs						(7,120,662)
Profit before tax expense						34,956,996
Tax expense						(6,703,254)
Profit for the year						28,253,742

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

<i>At / for the year ended 31 December 2021</i>	Consolidated financial statements					
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
Trade accounts receivable	33,673,271	12,397,423	11,685,864	(7,189,707)	-	50,566,851
Inventories	56,825,100	9,592,049	22,649,060	-	-	89,066,209
Property, plant and equipment	137,270,829	92,348,474	60,530,674	-	-	290,149,977
Unallocated assets	-	-	-	-	112,045,203	112,045,203
Total assets	227,769,200	114,337,946	94,865,598	(7,189,707)	112,045,203	541,828,240
Trade accounts payable	67,335,959	5,761,808	23,048,590	(5,971,708)	-	90,174,649
Unallocated liabilities	-	-	-	-	280,650,163	280,650,163
Total liabilities	67,335,959	5,761,808	23,048,590	(5,971,708)	280,650,163	370,824,812
Capital expenditure and investments	12,077,652	6,683,120	4,326,820	-	3,126,472	26,214,064

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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(b) Information about geographical areas

	Consolidated financial statements			
	Segment assets		Capital expenditure and investments	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Thailand	38,676,443	36,960,783	4,229,930	4,013,085
Americas	303,719,645	254,639,363	57,170,059	16,661,130
Europe	162,322,590	137,668,046	6,709,819	3,608,359
Rest of the world	119,159,713	112,560,048	7,382,937	1,931,490
Total	<u>623,878,391</u>	<u>541,828,240</u>	<u>75,492,745</u>	<u>26,214,064</u>

(c) Contract Balances

The contract liabilities primarily relate to the advance consideration received from customers for sale of goods. The Group recognises such contract liabilities as revenue when the goods are delivered to customers.

Material movement in the contract liabilities balances during the years are as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
At 1 January	1,216,295	1,391,536	-	-
Recognised as revenue from sale of goods during the year	(47,467,181)	(17,236,112)	-	-
Advance received during the year	47,951,029	16,936,284	-	-
Acquisitions through business combinations	82,258	-	-	-
Effect of movements in exchange rates	(67,339)	124,587	-	-
At 31 December	<u>1,715,062</u>	<u>1,216,295</u>	<u>-</u>	<u>-</u>

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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28 Other income

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Insurance claim	14	4,223,664	1,150,788	-	-
License income		1,271,730	-	-	-
Government incentive income		848,193	933,507	-	-
Income from tax credits		-	1,151,680	-	-
Others		1,991,766	1,512,914	2,150,089	552,665
Total		8,335,353	4,748,889	2,150,089	552,665

During the year ended 31 December 2022, the Group recorded insurance claims amounting to USD 64.0 million (Baht 2,243.2 million) for a lightning strike and subsequent flaring in 2020 and EUR 28.2 million (Baht 1,040.8 million) for a fire incident in 2021 for certain indirect subsidiaries in USA and Germany, respectively.

During the year ended 31 December 2022, a certain indirect subsidiary recognised license income to provide a license produce certain products to its client, amounting to USD 31.6 million (Baht 1,107.5 million).

During the year ended 31 December 2021, certain indirect subsidiaries in Brazil, recognised income from tax credits amounting to BRL 194.2 million (Baht 1,151.7 million) which resulted pursuant to the final judgment of the Brazilian Supreme Federal Court, applicable to all Brazilian taxpayers, that the Brazilian State-level VAT (ICMS) should be excluded from the tax base calculation basis for the purpose of computation of the Federal Social Contributions i.e. PIS and COFINS.

29 Cost of sales of goods

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<i>(in thousand Baht)</i>				
Changes in inventories of finished goods and work in progress	(7,649,821)	(14,834,023)	-	-
Raw materials and consumables used	386,098,791	285,783,256	-	-
Depreciation and amortisation	23,252,890	19,384,261	-	-
Personnel expense	35,574,618	30,318,263	-	-
Provision for losses on inventories devaluation, net	2,098,472	238,108	-	-
Others	104,946,317	62,238,088	-	-
Total	544,321,267	383,127,953	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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30 Distribution costs

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Distribution	30,589,099	24,157,721	-	-
Insurance expense	625,385	1,125,632	-	-
Travelling expense	671,284	229,307	-	-
Royalty expense	621,705	529,527	-	-
Others	4,194,262	1,807,410	-	-
Total	<u>36,701,735</u>	<u>27,849,597</u>	<u>-</u>	<u>-</u>

31 Administrative expenses

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Personnel expense	9,012,628	6,530,521	-	-
Depreciation and amortisation	2,468,514	2,352,427	-	-
Professional fees	4,234,082	2,198,973	305,619	272,543
Others	9,999,045	8,090,750	1,721,290	225,222
Total	<u>25,714,269</u>	<u>19,172,671</u>	<u>2,026,909</u>	<u>497,765</u>

32 Employee benefit expenses

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Management				
Wages and salaries	264,312	194,533	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	4,924	5,280	-	-
Others	209,625	121,208	30,880	17,720
	<u>478,861</u>	<u>321,021</u>	<u>30,880</u>	<u>17,720</u>
Other employees				
Wages and salaries	33,044,837	27,069,894	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	3,732,723	3,417,586	-	-
Bonus	2,198,483	1,839,688	-	-
Staff welfare	5,523,467	4,483,659	-	-
Others	87,736	37,957	-	-
	<u>44,587,246</u>	<u>36,848,784</u>	<u>-</u>	<u>-</u>
Total employee benefit expenses	<u>45,066,107</u>	<u>37,169,805</u>	<u>30,880</u>	<u>17,720</u>

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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Defined contribution plans

The defined contribution plans comprise provident funds established by subsidiaries registered in Thailand for its Thai employees. Membership to the funds is on a voluntary basis. Total expense recognised by the Thai subsidiaries for this defined contribution plans for the year ended 31 December 2022 amounted to Baht 36.6 million (2021: Baht 35.1 million), which is included in employee benefit expenses.

Employee retirement schemes

Subsidiaries in United States established a 401(k) plan that allows eligible employees to contribute their compensation, with the contributions by the US subsidiaries. The plan also allows discretionary profit sharing contributions to be made by management. Total expense recognised for the plan for the year ended 31 December 2022 amounted to approximately USD 10.5 million (Baht 368.6 million) (2021: USD 8.5 million (Baht 272.6 million)), which is included in employee benefit expenses.

Subsidiaries in Europe established defined contribution plans that provide benefits for their employees upon retirement. Total annual contribution by the European subsidiaries to the plans is defined by the annual and risk premiums charged by the insurance company. Total expense recognised for the plans for the year ended 31 December 2022 was GBP 0.1 million and EUR 3.8 million (Baht 146.0 million) (2021: GBP 0.1 million and EUR 3.8 million (Baht 150.0 million)), which is included in employee benefit expenses.

33 Expenses by nature

The statements of income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Changes in inventories of finished goods and work in progress	29	(7,649,821)	(14,834,022)	-	-
Raw materials and consumables used	29	386,098,791	285,783,256	-	-
Provision for losses on inventories devaluation, net	29	2,098,472	238,108	-	-
Employee benefit expenses	32	44,587,246	36,848,784	-	-
Depreciation and amortisation	29, 31	25,721,404	21,736,688	-	-
Impairment loss on property, plant and equipment, goodwill and other intangible assets		8,645,118	290,031	-	-
Distribution expense	30	30,589,099	24,157,721	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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34 Finance costs

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
<i>(in thousand Baht)</i>					
Interest expense:					
Related parties	5	4,804	4,759	216,037	46,110
Financial institutions		11,118,888	7,494,911	2,620,854	2,435,472
Total interest expense		11,123,692	7,499,670	2,836,891	2,481,582
Less: amount included in the cost of assets under construction and intangible assets under development	14, 18	(628,496)	(379,008)	-	-
Net		10,495,196	7,120,662	2,836,891	2,481,582

35 Tax expense

<i>Income tax recognised in profit or loss</i>	Consolidated financial statements		Separate financial statements		
	2022	2021	2022	2021	
<i>(in million Baht)</i>					
Current tax expense					
Current year		6,746	4,767	86	20
Adjustment for under provided in prior years		390	197	-	-
		7,136	4,964	86	20
Deferred tax expense					
Movements in temporary differences		1,129	3,032	(1)	9
Recognition of previously unrecognised tax losses		(2,491)	(1,293)	-	-
		(1,362)	1,739	(1)	9
Total tax expense		5,774	6,703	85	29

	Consolidated financial statements					
		2022 Tax (expense) benefit	Net of tax	2021 Tax (expense) benefit	Net of tax	
Income tax	Before Tax			Before tax		
<i>(in million Baht)</i>						
Recognised in other comprehensive income						
Net investment hedge	(2,107)	(30)	(2,137)	(2,845)	87	(2,758)
Cash flow hedges reserve	4,338	(171)	4,167	1,420	(197)	1,223
Defined benefit plan actuarial gains (losses)	1,736	(307)	1,429	755	(157)	598
Total	3,967	(508)	3,459	(670)	(267)	(937)

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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<i>Income tax</i>	Separate financial statements					
	Before Tax	2022 Tax (expense) benefit	Net of tax	Before tax	2021 Tax (expense) benefit	Net of tax
	<i>(in million Baht)</i>					
Recognised in other comprehensive income						
Net investment hedge	-	-	-	(14)	3	(11)
Cash flow hedges reserve	80	(16)	64	74	(15)	59
Total	80	(16)	64	60	(12)	48

<i>Reconciliation of effective tax rate</i>	Consolidated financial statements			
	2022 Rate (%)	(in million Baht)	2021 Rate (%)	(in million Baht)
Profit before tax expense		40,104		34,957
Income tax using the Thai corporation tax rate	20.00	8,021	20.00	6,991
Income tax reduction - deferred - other countries		(363)		(118)
Effect of different tax rates in foreign jurisdictions		(711)		(537)
Income not subject to tax and tax privileges		(2,857)		(1,523)
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(150)
Expenses not deductible for tax purposes		3,161		1,220
Utilisation of previously unrecognised tax losses		(188)		(355)
Recognition of deferred tax assets from previously unrecognised tax losses		(2,491)		(1,293)
Current year losses for which no deferred tax asset was recognised		692		328
Under provided in prior years		390		197
Written-off unrecoverable deferred tax assets from loss carry forward		166		1
Share of profit of associate and joint ventures accounted for using equity method		(77)		(138)
Foreign exchange differences arising from transaction of intercompany loans considered as part of net investment in foreign operations		(89)		854
Change in recognition of temporary difference		(171)		1,440
Others		441		(214)
Total	14.40	5,774	19.17	6,703

<i>Reconciliation of effective tax rate</i>	Separate financial statements			
	2022 Rate (%)	(in million Baht)	2021 Rate (%)	(in million Baht)
Profit before tax expense		6,927		8,229
Income tax using the Thai corporation tax rate	20.00	1,385	20.00	1,646
Income not subject to tax		(2,187)		(1,472)
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(150)
Expenses not deductible for tax purposes		1,037		10
Change in recognition of temporary difference		-		(5)
Total	1.23	85	0.35	29

Notes to the financial statements

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<i>Deferred tax</i> <i>At 31 December</i>	Consolidated financial statements					
	Assets		Liabilities		Net	
	2022	2021	2022	2021	2022	2021
	<i>(in million Baht)</i>					
Property, plant and equipment	(1,666)	(1,915)	31,799	28,859	30,133	26,944
Right-of-use assets	(140)	(101)	-	-	(140)	(101)
Intangible assets	(2,534)	(2,564)	4,442	5,408	1,908	2,844
Trade accounts receivable	(32)	(16)	4	4	(28)	(12)
Derivatives	(1,204)	(256)	637	479	(567)	223
Inventories	(1,243)	(382)	22	12	(1,221)	(370)
Provisions	(2,285)	(1,014)	386	321	(1,899)	(693)
Loss carry forward	(11,841)	(9,272)	-	-	(11,841)	(9,272)
Others	(2,797)	(2,910)	1,440	592	(1,357)	(2,318)
Total	<u>(23,742)</u>	<u>(18,430)</u>	<u>38,730</u>	<u>35,675</u>	<u>14,988</u>	<u>17,245</u>
Set off of tax	19,201	15,773	(19,201)	(15,773)	-	-
Net deferred tax (assets) liabilities	<u>(4,541)</u>	<u>(2,657)</u>	<u>19,529</u>	<u>19,902</u>	<u>14,988</u>	<u>17,245</u>

<i>Deferred tax</i> <i>At 31 December</i>	Separate financial statements					
	Assets		Liabilities		Net	
	2022	2021	2022	2021	2022	2021
	<i>(in million Baht)</i>					
Derivatives	-	(12)	171	167	171	155
Provisions	<u>(3)</u>	<u>(2)</u>	<u>-</u>	<u>-</u>	<u>(3)</u>	<u>(2)</u>
Total	<u>(3)</u>	<u>(14)</u>	<u>171</u>	<u>167</u>	<u>168</u>	<u>153</u>
Set off of tax	<u>3</u>	<u>14</u>	<u>(3)</u>	<u>(14)</u>	<u>-</u>	<u>-</u>
Net deferred tax liabilities	<u>-</u>	<u>-</u>	<u>168</u>	<u>153</u>	<u>168</u>	<u>153</u>

<i>Net deferred tax (assets) liabilities</i>	Consolidated financial statements					
	At 1 January 2022	Charged / (Credited to) :				At 31 December 2022
		Profit or loss	Other comprehensive income	Acquired through business combinations	Exchange differences	
	<i>(in million Baht)</i>					
Property, plant and equipment	26,944	1,533	-	1,261	395	30,133
Right-of-use assets	(101)	(36)	-	(2)	(1)	(140)
Intangible assets	2,844	(997)	-	117	(56)	1,908
Trade accounts receivable	(12)	(16)	-	-	-	(28)
Derivatives	223	539	201	(1,622)	92	(567)
Inventories	(370)	(859)	-	(2)	10	(1,221)
Provisions	(693)	(812)	-	(438)	44	(1,899)
Loss carry forward	(9,272)	(1,457)	-	(1,107)	(5)	(11,841)
Others	(2,318)	743	307	(67)	(22)	(1,357)
Total	<u>17,245</u>	<u>(1,362)</u>	<u>508</u>	<u>(1,860)</u>	<u>457</u>	<u>14,988</u>

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36 Basic and diluted earnings per share

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht/thousand shares)</i>			
Profit attributable to ordinary shareholders				
Profit for the year attributable to owner of the Company	31,006,084	26,288,027	6,841,873	8,200,735
Less: coupon payment on subordinated perpetual debentures	<u>(750,000)</u>	<u>(750,000)</u>	<u>(750,000)</u>	<u>(750,000)</u>
Profit attributable to ordinary shareholders of the Company	<u>30,256,084</u>	<u>25,538,027</u>	<u>6,091,873</u>	<u>7,450,735</u>
Weighted average number of ordinary shares outstanding at 31 December	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>
Basic and diluted earnings per share (in Baht)	<u>5.39</u>	<u>4.55</u>	<u>1.09</u>	<u>1.33</u>

37 Dividends

	Approval date	Payment schedule	Dividend rate per share (Baht)	Amount (in million Baht)
2022				
2021 Annual dividend	26 April 2022	May 2022	<u>0.250</u>	<u>1,403.6</u>
2022 Interim dividend	18 May 2022	June 2022	<u>0.400</u>	<u>2,245.8</u>
2022 Interim dividend	17 August 2022	September 2022	<u>0.400</u>	<u>2,245.8</u>
2022 Interim dividend	16 November 2022	December 2022	<u>0.400</u>	<u>2,245.8</u>
2021				
2020 Annual dividend	27 April 2021	May 2021	<u>0.175</u>	<u>982.5</u>
2021 Interim dividend	14 May 2021	June 2021	<u>0.250</u>	<u>1,403.6</u>
2021 Interim dividend	16 August 2021	September 2021	<u>0.250</u>	<u>1,403.6</u>
2021 Interim dividend	12 November 2021	December 2021	<u>0.250</u>	<u>1,403.6</u>

38 Financial instruments

(a) Carrying amounts and fair values

The following tables show the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy, but does not include fair value information for financial assets and financial liabilities measured at amortised cost if the carrying amount is a reasonable approximation of fair value.

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At 31 December	Carrying amount				Consolidated financial statements			Fair value	
	Hedging instruments	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3	Total
<i>(in million Baht)</i>									
2022									
Financial assets									
Other financial assets :									
Interest rate swaps	3,522	-	-	-	3,522	-	3,522	-	3,522
Forward exchange contracts	650	281	-	-	931	-	931	-	931
Cross currency swaps	3,296	-	-	-	3,296	-	3,296	-	3,296
Commodity derivatives	207	42	-	-	249	-	249	-	249
Total other financial assets	7,675	323	-	-	7,998	-	-	-	-
Financial liabilities									
Other financial liabilities:									
Forward exchange contracts	1,514	250	-	-	1,764	-	1,764	-	1,764
Commodity derivatives	975	29	-	-	1,004	-	1,004	-	1,004
Total other financial liabilities	2,489	279	-	-	2,768	-	-	-	-

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At 31 December	Carrying amount				Consolidated financial statements				Fair value			
	Hedging instruments	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3	Total			
<i>(in million Baht)</i>												
2021												
Financial assets												
Other financial assets:												
Interest rate swaps	419	-	-	-	419	-	419	-	419	-	-	419
Forward exchange contracts	34	142	-	-	176	-	176	-	176	-	-	176
Cross currency swaps	631	-	-	-	631	-	631	-	631	-	-	631
Commodity derivatives	556	115	-	-	671	-	671	-	671	-	-	671
Total other financial assets	1,640	257	-	-	1,897	-	1,897	-	1,897	-	-	1,897
Financial liabilities												
Other financial liabilities:												
Interest rate swaps	150	5	-	-	155	-	155	-	155	-	-	155
Forward exchange contracts	1,879	106	-	-	1,985	-	1,985	-	1,985	-	-	1,985
Cross currency swaps	299	-	-	-	299	-	299	-	299	-	-	299
Commodity derivatives	72	58	-	-	130	-	130	-	130	-	-	130
Total other financial liabilities	2,400	169	-	-	2,569	-	2,569	-	2,569	-	-	2,569

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Indorama Ventures Public Company Limited and its Subsidiaries
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At 31 December	Carrying amount				Separate financial statements			Fair value		
	Hedging instruments	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3	Total	
<i>2022</i>										
Financial assets										
Other financial asset:										
Interest rate swaps	19	-	-	-	19	-	19	-	19	
Forward exchange contracts	-	25	-	-	25	-	25	-	25	
Total other financial assets	19	25	-	-	44	-	44	-	44	
<i>2021</i>										
Financial assets										
Other financial asset:										
Forward exchange contracts	-	1	-	-	1	-	1	-	1	1
Total other financial assets	-	1	-	-	1	-	1	-	1	
Financial liabilities										
Other financial liability:										
Interest rate swaps	62	-	-	-	62	-	62	-	62	62
Total other financial liabilities	62	-	-	-	62	-	62	-	62	

Notes to the financial statements

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The following tables present valuation technique of financial instruments measured at fair value in the statements of financial position:

Type	Valuation technique
Forward exchange contracts	<i>Forward pricing:</i> The fair value is determined using quoted forward exchange rates at the reporting date and present value calculations based on high credit quality yield curves in the respective currencies.
Interest rate swaps	<i>Swap models:</i> The present value of estimated future cash flows, using an observable yield curve.
Commodity swaps/ Cross currency swap and other derivatives	<i>In cases where there is an active market,</i> the Group/Company uses the market value as the fair value of derivatives. <i>In cases where there is no active market,</i> simple over-the-counter derivative is derived by using a valuation technique incorporating observable market data.

(b) Financial risk management policies

Risk management framework

The Group's/Company's board of directors has overall responsibility for the establishment and oversight of the Group's/Company's risk management framework. The board of directors has established the risk management committee, which is responsible for developing and monitoring the Group's/Company's risk management policies. The committee reports regularly to the board of directors on its activities.

The Group's/Company's risk management policies are established to identify and analyse the risks faced by the Group/Company, to set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's/Company's activities. The Group/Company, through its training and management standards and procedures, aims to maintain a disciplined and constructive control environment in which all employees understand their roles and obligations.

(b.1) Credit risk

Credit risk is the risk of financial loss to the Group/Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Group's receivables from customers.

(b.1.1) Trade accounts receivables

The risk management committee has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's commercial terms and conditions are offered. The Group's review includes external ratings, if they are available, financial statements, credit agency information, industry information and in some cases bank references. Sale limits are established for each customer and reviewed periodically. Any sales exceeding those limits require approval from the risk management committee.

The Group limits its exposure to credit risk from trade accounts receivables by establishing a maximum payment period of 12 months. Outstanding trade receivables are regularly monitored by the Group. An impairment analysis is performed by the Group at each reporting date. The provision rates of expected credit loss are based on days past due for individual trade receivables to reflect differences between economic conditions in the past, current conditions and the Group's view of economic conditions over the expected lives of the receivables.

Information relevant to trade accounts receivable is disclosed in note 7.

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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(b.1.2) Cash and cash equivalent and derivatives

The Group's/Company's exposure to credit risk arising from cash and cash equivalents and derivative assets is limited because the counterparties are banks and financial institutions which the Group/Company considers to have low credit risk.

(b.1.3) Guarantees

The Group's/Company's policy is to provide financial guarantees for subsidiaries' liabilities. At 31 December 2022, the Group/Company has issued a guarantee to certain banks in respect of credit facilities granted to subsidiaries (see note 5).

(b.2) Liquidity risk

The Group/Company monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's/Company's operations and to mitigate the effects of fluctuations in cash flows.

The following table shows the remaining contractual maturities of financial liabilities at the reporting date. The amounts are gross and undiscounted and include contractual interest payments and exclude the impact of netting agreements.

<i>At 31 December</i>	Consolidated financial statements				
	Contractual cash flows				
	Carrying amount	1 year or less	More than 1 year but less than 5 years	More than 5 years	Total
	<i>(in thousand Baht)</i>				
2022					
Non-derivative financial liabilities					
Bank overdrafts	3,751,811	3,751,811	-	-	3,751,811
Trade accounts payable	106,720,741	106,720,741	-	-	106,720,741
Short-term loans from financial institutions	27,496,014	27,496,014	-	-	27,496,014
Long-term loans from financial institutions	130,966,091	28,501,962	92,948,583	9,515,546	130,966,091
Lease liabilities	10,900,286	2,254,915	4,300,981	4,344,390	10,900,286
Debentures	81,199,128	5,274,945	40,730,451	35,193,732	81,199,128
Interest payable	1,102,320	8,759,916	15,054,528	4,549,181	28,363,625
	<u>362,136,391</u>	<u>182,760,304</u>	<u>153,034,543</u>	<u>53,602,849</u>	<u>389,397,696</u>
Derivative financial liabilities					
Forward exchange contracts:	1,764,263				
- Cash outflow		12,814,139	35,471,759	-	48,285,898
- Cash inflow		(12,647,651)	(32,838,250)	-	(45,485,901)
Commodity derivatives	1,003,403	1,003,403	-	-	1,003,403
	<u>2,767,666</u>	<u>1,169,891</u>	<u>2,633,509</u>	<u>-</u>	<u>3,803,400</u>

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At 31 December	Carrying amount	Separate financial statements			Total
		1 year or less	Contractual cash flows More than 1 year but less than 5 years	More than 5 years	
(in thousand Baht)					
2021					
Non-derivative financial liabilities					
Long-term loans from financial institutions	9,210,963	771,511	8,439,452	-	9,210,963
Long-term loans from related party	6,000,000	-	6,000,000	-	6,000,000
Debentures	57,905,633	6,532,924	19,189,894	32,182,815	57,905,633
Interest payable	315,796	2,470,183	6,839,779	4,495,593	13,805,555
	<u>73,432,392</u>	<u>9,774,618</u>	<u>40,469,125</u>	<u>36,678,408</u>	<u>86,922,151</u>
Derivative financial liabilities					
Interest rate swaps	61,999	63,013	16,511	-	79,524
	<u>61,999</u>	<u>63,013</u>	<u>16,511</u>	<u>-</u>	<u>79,524</u>

The cash inflows/cash outflows disclosed in the above table represent the contractual undiscounted cash flows relating to derivative financial liabilities held for risk management purposes and which are not usually closed out before contractual maturity. The disclosure shows net cash flow amounts for derivatives that are net cash-settled and gross cash inflow and outflow amounts for derivatives that have simultaneous gross cash settlement.

(b.3) Market risk

The Group/Company is exposed to the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk is as follows:

Interest rate benchmark reform (IBOR reform)

The Group's/Company's main IBOR exposure at 31 December 2022 was mainly indexed to LIBOR. The Group/Company estimated that the interest rate benchmark reform will have no material impact on the Group's/Company's financial statements. All financial transactions affected by interest rate reform are expected to be completely processed by 30 June 2023.

The following table shows the total amounts of financial instruments that have yet to transition to alternative benchmark rates. The amounts of financial liabilities are shown at their carrying amounts and derivatives are shown at their notional amounts.

Key reference rate under the existing contracts	Consolidated financial statements	Separate financial statements
	LIBOR	
(in million Baht)		
At 31 December 2022		
Derivative assets	70,247	1,460
Borrowings from financial institutions	77,924	2,537

(b.3.1) Foreign currency risk

The Group/Company is exposed to foreign currency risk relating to purchases, sales, lendings and borrowings which are denominated in foreign currencies. The Group/Company primarily utilises forward exchange contracts with maturities of less than one year to hedge such financial assets and liabilities denominated in foreign currencies. The forward exchange contracts entered into at the reporting date also relate to anticipated purchases and sales denominated in foreign currencies, for the subsequent period.

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<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>Thai Baht</i>				
Cash and cash equivalents	10	1	-	-
Trade accounts receivable	21,080	-	-	-
Net statement of financial position exposure	21,090	1	-	-
<i>United States Dollars</i>				
Cash and cash equivalents	1,349,816	4,510,918	1,174	1,134
Trade accounts receivable	7,816,018	6,710,114	-	-
Short-term loans to related parties	-	-	3,080,159	3,267,325
Interest-bearing liabilities	(81,611,774)	(64,785,217)	(2,536,088)	(3,224,278)
Trade accounts payable	(24,054,482)	(16,707,395)	-	-
Net statement of financial position exposure	(96,500,422)	(70,271,580)	545,245	44,181
Forward exchange purchase contracts	2,633,035	3,429,132	-	-
Forward exchange selling contracts	(3,295,170)	(3,600,707)	-	-
Net exposure	(97,162,557)	(70,443,155)	545,245	44,181
<i>Euro</i>				
Cash and cash equivalents	226,702	350,761	15	15
Trade accounts receivable	2,792,844	1,840,866	-	-
Interest-bearing liabilities	(9,147,189)	(10,696,931)	-	-
Trade accounts payable	(1,234,259)	(962,641)	-	-
Net statement of financial position exposure	(7,361,902)	(9,467,945)	15	15
Forward exchange purchase contracts	67,364	41,981	-	-
Forward exchange selling contracts	(1,430,194)	(651,348)	-	-
Net exposure	(8,724,732)	(10,077,312)	15	15
<i>Pounds Sterling</i>				
Cash and cash equivalents	42,453	39,512	-	-
Trade accounts receivable	33,553	61,954	-	-
Trade accounts payable	(9,096)	(17,802)	-	-
Net statement of financial position exposure	66,910	83,664	-	-
Forward exchange selling contracts	(13,390)	(847)	-	-
Net exposure	53,520	82,817	-	-

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<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Japanese Yen				
Cash and cash equivalents	146	46	-	-
Trade accounts receivable	1,799	-	-	-
Trade accounts payable	(50,696)	(187,359)	-	-
Net statement of financial position exposure	(48,751)	(187,313)	-	-
Chinese Yuan				
Cash and cash equivalents	513,419	332,471	-	-
Trade accounts receivable	431,074	481,073	-	-
Interest-bearing liabilities	(39,710)	(53,114)	-	-
Trade accounts payable	(259,713)	(339,171)	-	-
Net statement of financial position exposure	645,070	421,259	-	-
Mexican Peso				
Cash and cash equivalents	104,052	161,091	-	-
Trade accounts receivable	1,027,481	918,791	-	-
Interest-bearing liabilities	(226,509)	(102,407)	-	-
Trade accounts payable	(334,284)	(903,794)	-	-
Net statement of financial position exposure	570,740	73,681	-	-
Forward exchange purchase contracts	93,318	83,550	-	-
Net exposure	664,058	157,231	-	-
Indonesian Rupiah				
Cash and cash equivalents	60,776	147,031	-	-
Trade accounts receivable	847,422	1,018,920	-	-
Interest-bearing liabilities	(6,924)	-	-	-
Trade accounts payable	(4,780,159)	(2,333,058)	-	-
Net statement of financial position exposure	(3,878,885)	(1,167,107)	-	-
Forward exchange purchase contracts	3,739,652	1,570,735	-	-
Forward exchange selling contracts	(747,736)	(724,088)	-	-
Net exposure	(886,969)	(320,460)	-	-
Singapore Dollars				
Cash and cash equivalents	8,204	6,133	-	-
Interest-bearing liabilities	(4,764,846)	(4,605,672)	-	-
Trade accounts payable	(25)	(176)	-	-
Net statement of financial position exposure	(4,756,667)	(4,599,715)	-	-
Currency swaps contracts	407,831	299,139	-	-
Net exposure	(4,348,836)	(4,300,576)	-	-

Notes to the financial statements

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<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>Danish Krone</i>				
Cash and cash equivalents	135,164	140,101	-	-
Trade accounts receivable	120,772	226,705	-	-
Interest-bearing liabilities	-	(324)	-	-
Trade accounts payable	(206,011)	(488,664)	-	-
Net statement of financial position exposure	49,925	(122,182)	-	-
<i>Indian Rupee</i>				
Cash and cash equivalents	44,551	10,595	-	-
Trade accounts receivable	49,804	61,960	-	-
Trade accounts payable	(6,573)	(8,595)	-	-
Net statement of financial position exposure	87,782	63,960	-	-
<i>Czech Koruna</i>				
Cash and cash equivalents	1,662	461	-	-
Trade accounts receivable	8,523	979	-	-
Interest-bearing liabilities	-	(59,935)	-	-
Trade accounts payable	(123,248)	(9,383)	-	-
Net statement of financial position exposure	(113,063)	(67,878)	-	-
Forward exchange purchase contracts	121,810	9,383	-	-
Forward exchange selling contracts	-	(1,440)	-	-
Net exposure	8,747	(59,935)	-	-
<i>Egyptian Pound</i>				
Cash and cash equivalents	1,718	4,590	-	-
Other investment	247,921	79,090	-	-
Interest-bearing liabilities	(229)	-	-	-
Trade accounts payable	(16,342)	(39,238)	-	-
Net statement of financial position exposure	233,068	44,442	-	-
<i>Brazilian Real</i>				
Cash and cash equivalents	149,428	78,306	-	-
Trade accounts receivable	63,152	55,787	-	-
Trade accounts payable	(173,057)	(20,347)	-	-
Net statement of financial position exposure	39,523	113,746	-	-

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<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>Israeli New Shekels</i>				
Cash and cash equivalents	165,796	63,966	-	-
Trade accounts receivable	94,044	192,833	-	-
Interest-bearing liabilities	(1,992,759)	(2,690,196)	-	-
Trade accounts payable	(29,240)	(17,545)	-	-
Net statement of financial position exposure	(1,762,159)	(2,450,942)	-	-
Currency swaps contracts	818,471	1,353,882	-	-
Net exposure	(943,688)	(1,097,060)	-	-
<i>Russian Ruble</i>				
Cash and cash equivalents	119,067	119,911	-	-
Trade accounts receivable	595,268	259,171	-	-
Trade accounts payable	(6,048)	(6,818)	-	-
Net statement of financial position exposure	708,287	372,264	-	-
<i>Arab Emirates Dirham</i>				
Cash and cash equivalents	14,709	5,939	-	-
Trade accounts receivable	45,323	149,758	-	-
Interest-bearing liabilities	(1)	-	-	-
Net statement of financial position exposure	60,031	155,697	-	-
<i>Bulgarian Lev</i>				
Trade accounts receivable	6,320	4,609	-	-
Interest-bearing liabilities	(13,310)	-	-	-
Trade accounts payable	(49,925)	(44,121)	-	-
Net statement of financial position exposure	(56,915)	(39,512)	-	-
<i>Canadian Dollar</i>				
Trade accounts receivable	154	109	-	-
Interest-bearing liabilities	(105,133)	(55,583)	-	-
Trade accounts payable	(125,079)	(66,854)	-	-
Net statement of financial position exposure	(230,058)	(122,328)	-	-

Sensitivity analysis

A reasonably possible strengthening (weakening) of the respective functional currencies of each entity in the Group against US dollar and Euro at the reporting date would have affected the measurement of financial instruments denominated in a US dollar and Euro and affected equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular interest rates, remain constant.

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Consolidated financial statements					
	Movement (%)	Profit or loss		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
		<i>(in thousand Baht)</i>			
2022					
USD	1	971,626	(971,626)	205,700	(166,269)
EUR	1	87,247	(87,247)	276,335	(292,771)
2021					
USD	1	702,663	(702,663)	62,683	(49,117)
EUR	1	100,773	(100,773)	118,274	39,334

Separate financial statements					
	Movement (%)	Profit or loss		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
		<i>(in thousand Baht)</i>			
2022					
USD	1	(5,452)	5,452	-	-
2021					
USD	1	(442)	442	-	-

(b.3.2) Interest rate risk

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's/Company's operations and its cash flows because loan interest rates are mainly variable. So the Group/Company is primarily exposed to interest rate risk. The Group/Company mitigates this risk by ensuring that at least 50% of its interest rate risk exposure is at a fixed rate. This is achieved partly by entering fixed-rate instruments and partly by borrowing at a floating rate and using interest rate swaps as hedges of the variability in cash flows attributable to movements in interest rates. The Group/Company applies a hedge ratio of 1:1.

Exposure to interest rate risk At 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<i>(in thousand Baht)</i>				
Financial instruments with variable interest rates				
Financial assets	23,694	30,229	-	-
Financial liabilities	(148,001,687)	(124,165,948)	(2,537,282)	(9,229,957)
Net statement of financial position exposure	(147,977,993)	(124,135,719)	(2,537,282)	(9,229,957)
Interest rate swaps	70,792,389	71,165,205	1,460,261	2,955,990
Net exposure	(77,185,604)	(52,970,514)	(1,077,021)	(6,273,967)

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Interest rate swap contract

The Group/Company has entered into an interest rate swap agreement for a long-term loan swapping a floating interest rate ranging from 2.13 to 4.77 percent per annum to a fixed interest rate ranging from (0.30) to 3.33 percent per annum, with monthly and quarterly settlement starting on January 2019 until March 2028.

Cash flow sensitivity analysis for variable-rate instruments

A reasonable possible change of 1% in interest rates at the reporting date would have increased (decreased) equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency exchange rates, remain constant.

Consolidated financial statements				
	Profit or loss		Equity, net of tax	
	1% increase in interest rate	1% decrease in interest rate	1% increase in interest rate	1% decrease in interest rate
	<i>(in thousand Baht)</i>			
2022				
Financial instruments with variable interest rate	(1,479,780)	1,479,780	-	-
Interest rate swaps	-	-	912,281	(916,499)
Cash flow sensitivity (net)	<u>(1,479,780)</u>	<u>1,479,780</u>	<u>912,281</u>	<u>(916,499)</u>
2021				
Financial instruments with variable interest rate	(1,241,357)	1,241,357	-	-
Interest rate swaps	-	-	1,319,586	(930,302)
Cash flow sensitivity (net)	<u>(1,241,357)</u>	<u>1,241,357</u>	<u>1,319,586</u>	<u>(930,302)</u>
Separate financial statements				
	Profit or loss		Equity, net of tax	
	1% increase in interest rate	1% decrease in interest rate	1% increase in interest rate	1% decrease in interest rate
	<i>(in thousand Baht)</i>			
2022				
Financial instruments with variable interest rate	(25,373)	25,373	-	-
Interest rate swaps	-	-	2,848	(2,877)
Cash flow sensitivity (net)	<u>(25,373)</u>	<u>25,373</u>	<u>2,848</u>	<u>(2,877)</u>
2021				
Financial instruments with variable interest rate	(92,300)	92,300	-	-
Interest rate swaps	-	-	(27,367)	(69,216)
Cash flow sensitivity (net)	<u>(92,300)</u>	<u>92,300</u>	<u>(27,367)</u>	<u>(69,216)</u>

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(c) *Hedge accounting*

(c.1) *Cash flow hedges*

The amounts at the reporting date relating to items designated as hedged items were as follows.

<i>At 31 December</i>	Consolidated financial statements	
	Cash flow hedge reserve	Balance remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied <i>(in thousand Baht)</i>
2022		
Foreign currency risk		
Receivables, loan assets, payables, and borrowings	2,774,030	-
Interest rate risk		
Variable-rate instrument	3,498,129	-
Commodity price risk		
Raw material purchases forecast	(938,445)	-
2021		
Foreign currency risk		
Receivables, loan assets, payables, and borrowings	204,415	-
Interest rate risk		
Variable-rate instrument	234,060	-
Commodity price risk		
Raw material purchases forecast	491,860	-
Separate financial statements		
<i>At 31 December</i>	Cash flow hedge reserve	Balance remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied <i>(in thousand Baht)</i>
2022		
Interest rate risk		
Variable-rate instrument	18,470	-
2021		
Interest rate risk		
Variable-rate instrument	(61,999)	-

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The amounts relating to items designated as hedging instruments and hedge ineffectiveness were as follows.

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Foreign currency risk				
At 31 December				
Cross-currency swaps - nominal amount	28,508,109	27,276,448	-	-
Foreign currency forwards - nominal amount	824,379	1,856,268	-	-
Carrying amount included in:				
- other current financial assets	156,546	128,624	-	-
- other non-current financial assets	3,139,701	529,122	-	-
- other current financial liabilities	9,739	1,095	-	-
- other non-current financial liabilities	-	299,062	-	-
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	2,515,719	119,388	-	-
Interest rate risk				
At 31 December				
Interest rate swap contracts - nominal amount	70,792,389	71,165,205	1,460,261	2,955,990
Carrying amount included in:				
- other current financial assets	625,681	69,692	18,470	-
- other non-current financial assets	2,896,013	349,091	-	-
- other non-current financial liabilities	-	150,265	-	61,999
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	3,264,069	1,302,078	80,468	74,323
<i>Recognised in profit or loss</i>				
- hedge ineffectiveness included in finance costs	-	(35,352)	-	-
Commodity price risk				
At 31 December				
Commodity swap contracts - nominal amount (thousand metric tons)	13	109	-	-
Commodity swap contracts - nominal amount (thousand cubic meter)	25,185	-	-	-
Commodity swap contracts - nominal amount (billion BTU)	17,431	-	-	-
Commodity swap contracts - nominal amount (thousand megawatt hours)	468	-	-	-
Commodity swap contracts - nominal amount (thousand barrel)	1,290	-	-	-
Carrying amount included in:				
- other current financial assets	206,914	457,985	-	-
- other non-current financial assets	-	97,817	-	-
- other current financial liabilities	975,180	71,837	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	(1,471,514)	(35,809)	-	-
- hedging reserve transferred to cost of sales of goods	41,283	17,813	-	-
<i>Recognised in profit or loss</i>				
- hedge ineffectiveness included in cost of sales of goods	(235,738)	(10,876)	-	-

The following table provides a reconciliation by risk category of components of equity and analysis of OCI items, net of tax, resulting from cash flow hedge accounting.

Cash flow hedges	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Hedging reserve				
Balance at 1 January	812,566	(400,807)	(49,599)	(109,057)
Changes in fair value:				
Foreign currency risk	2,515,719	119,388	-	-
Interest rate risk	3,264,069	1,302,078	80,468	74,323
Commodity price risk	(1,471,514)	(35,809)	-	-
Amount reclassified to profit or loss:				
Commodity price risk	41,283	17,813	-	-
Tax on movements on reserves during the year	(174,097)	(190,097)	(16,094)	(14,865)
Balance at 31 December	<u>4,988,026</u>	<u>812,566</u>	<u>14,775</u>	<u>(49,599)</u>

(c.2) Net investment hedges

A foreign currency exposure arises from the Group's/Company's net investment in its overseas subsidiaries such as EUR, USD, and AUD functional currency. The risk arises from the fluctuation in spot exchange rates between the EUR, USD, AUD and THB, which causes the amount of the net investment to vary.

The hedged risk in the net investment hedge is the risk of a weakening EUR, USD, AUD against THB that will result in a reduction in the carrying amount of the Group's/Company's net investment in the subsidiaries.

Part of the Group's/Company's net investment in its overseas subsidiaries is hedged by an EUR, USD, and AUD long term foreign forward contracts and unsecured USD bank loans which mitigates the foreign currency risk arising from the subsidiary's net assets. The long term forward contract and unsecured bank loans are designated as a hedging instrument for the changes in the value of the net investment that is attributable to changes in the spot rate of THB/EUR, THB/USD and THB/AUD respectively.

To assess hedge effectiveness, the Group/Company determines the economic relationship between the hedging instrument and the hedged item by comparing changes in the fair value of forward contracts and unsecured bank loans that are attributable to a change in the spot rate with changes

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
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in the investment in the foreign operation due to movements in the spot rate (the offset method). The Group's/Company's policy is to hedge the net investment only to the extent of the cost of the investment.

The amounts related to items designated as hedged items were as follows.

Consolidated financial statements		
	Foreign currency translation reserve	Balance remaining in the foreign currency translation reserve from hedging relationships for which hedge accounting is no longer applied
	<i>(in thousand Baht)</i>	
2022		
EUR net investment	1,315,447	790,018
USD net investment	(4,528,731)	(1,106,166)
AUD net investment	26,203	-
2021		
EUR net investment	265,994	790,018
USD net investment	(1,345,106)	-
AUD net investment	(1,081)	-

Separate financial statements		
	Foreign currency translation reserve	Balance remaining in the foreign currency translation reserve from hedging relationships for which hedge accounting is no longer applied
	<i>(in thousand Baht)</i>	
2022		
EUR net investment	836,711	836,711
2021		
EUR net investment	836,711	836,711

The amounts related to items designated as hedging instruments were as follows.

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
Net investment risk				
At 31 December				
Foreign exchange - nominal amount				
- forward contracts (USD)	42,684,564	41,273,577	-	-
- forward contracts (EUR)	11,048,220	11,368,440	-	-
- forward contracts (AUD)	467,582	485,254	-	-
- long-term loans (USD)	16,666,859	-	-	-
- non-current liabilities (USD)	4,876,875	-	-	-
Carrying amount included in:				
- other non-current financial assets	649,773	7,247	-	-
- other current financial liabilities	878,926	-	-	-
- other non-current financial liabilities	625,544	1,877,457	-	-

Notes to the financial statements

Indorama Ventures Public Company Limited and its Subsidiaries
For the year ended 31 December 2022

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in thousand Baht)</i>			
<i>For the year ended 31 December</i>				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	(2,106,888)	(2,845,836)	-	(13,856)

39 Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor, and market confidence and to sustain future development of the business. The Board of Directors regularly monitors the return on capital by evaluating results from operating activities divided by total shareholders' equity, excluding non-controlling interests and also monitors the level of dividends to ordinary shareholders.

40 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	<i>(in million Baht)</i>			
Capital commitments				
<i>Contracted but not provided for:</i>				
Land and land improvements	266	275	-	-
Buildings and other construction	4,177	179	-	-
Machinery and equipment	4,733	3,582	-	-
Total	9,176	4,036	-	-
Other commitments				
Short-term lease and lease of low-value asset commitments	690	697	-	-
Purchase orders and unused letters of credit for goods and supplies	15,105	14,013	-	-
Bank guarantees	5,531	6,711	2,292	2,183
Others	376	415	-	-
Total	21,702	21,836	2,292	2,183

Certain subsidiaries have executed long-term purchase agreements, committing them to purchase agreed quantities of raw materials, for periods up to eight years, at prices referred to the market prices of underlying commodities.

41 Events after the reporting period

On 24 February 2023, the board of directors proposed for the dividend payment of Baht 0.40 per share, amounting to Baht 2,245.8 million. This dividend payment is subject to the approval by the shareholders of the Company.

Report of the Board of Directors' Responsibilities for the Financial Statements

The Board of Directors of Indorama Ventures Public Company Limited places great importance on its duties and responsibilities in supervising the Company's operations in compliance with good corporate governance principles and is accountable for the financial statements, including the financial data shown in the Annual Registration Statement / Annual Report 2022 (Form 56-1 One Report). The financial statements for the accounting year ended December 31, 2022 were prepared under generally accepted accounting standards. In preparing the said financial statements, the Company has adopted accounting practices and standards that are appropriate to its nature of business. All material information has been sufficiently disclosed in the notes to financial statements. The financial statements have been audited by qualified and independent auditors who have confirmed that the said statements accurately reflect the actual financial standing, results and operating results over the past year, as well as being transparent.

The Board of Directors has maintained internal control, internal audit, risk management and corporate governance in order to ensure the completeness, adequacy, accuracy and fairness of the financial statements. The Board of Directors has assigned the Audit Committee to review the quality of the financial reports, the internal control system as well as the appropriate disclosure of connected transactions.

The Board of Directors expresses its satisfaction on the adequacy, credibility and reliability on the internal control system and the financial statements of Indorama Ventures Public Company Limited and its subsidiary companies for the year ended December 31, 2022.



Mr. Sri Prakash Lohia
Chairman



Mr. Alope Lohia
Group CEO

Appendix

Appendix 1	Details of Company's Directors, Executives, the person assigned to take direct responsibility for accounting supervision and Company Secretary
Appendix 2	Details of Directorship Information in Major Subsidiaries and/or Associated Companies
Appendix 3	Details of Head of Internal Audit, and Company Secretary and Head of Corporate Compliance
Appendix 4	Business Assets and Information on Appraisal Report
Appendix 5	The Audit Committee Report, the Sustainability and Risk Management Committee Report and the Nomination Compensation and Corporate Governance (NCCG) Committee Report
Appendix 6	Board of Directors Charter, Audit Committee Charter, Nomination, Compensation and Corporate Governance Committee Charter, Sustainability and Risk Management Committee Charter, and Qualifications of Independent Directors
Appendix 7	Roles and Responsibilities of: (a) the Chairman of the Board, (b) the Lead Independent Director; (c) the Board of Directors; (d) the Group Chief Executive Officer (Group CEO); and (f) the Company Secretary
Appendix 8	Corporate Governance Manual
Appendix 9	Investment in Subsidiaries



Please find more details of the Company's information from the appendices as shown on the Company's website www.indoramaventures.com*

* In case this Form 56-1 One Report references the information which has been disclosed on the Company's website, the disclosed information on the website shall be deemed as part of this Form 56-1 One Report. The Board of Directors certifies the accuracy and completeness of the referenced and disclosed information as same as information disclosed in this Form 56-1 One Report.

Indorama Ventures PCL (IVL), a global sustainable chemical company, is honored to be listed on

THE DOW JONES SUSTAINABILITY WORLD INDEX

for the fourth consecutive year and

THE DOW JONES SUSTAINABILITY EMERGING MARKETS INDEX

for the sixth consecutive year in
the 2022 S&P Global
Corporate Sustainability Assessment
in the Chemical Industry.

The Dow Jones Sustainability Indices (DJSI) are global benchmarks, looking at sustainability-driven companies. Companies are only listed if they are best-in-class within their industry for sustainability.



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TOGETHER
TO **CREATE**
A BETTER
WORLD

IVL THANKS

our staff, customers, and partners
for continuously contributing to
our sustainability performance
and UN SDGs.

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Integrated Oxides and Derivatives | Combined PET | Fibers



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This annual report is printed on paper that requires 50% fewer trees to produce than normal paper. All the text is printed using natural soy ink.