



INDORAMA VENTURES PUBLIC COMPANY LIMITED

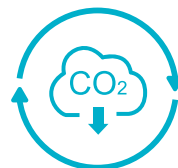
TO BE A WORLD-CLASS SUSTAINABLE CHEMICAL COMPANY
MAKING GREAT PRODUCTS FOR SOCIETY



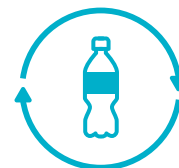
Take a different view

Made to be remade again

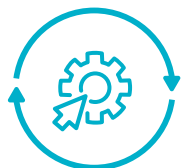
By asking more of PET and less of the planet, we recognize PET as a valuable resource that is helping close the loop in a circular economy



Reduce
Carbon emissions



Reduce
the amount of
waste that goes
to landfill



Achieve
sustainability
targets through
design
collaboration

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APPENDIX





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.



Performance Highlights

US\$million (except where stated otherwise)	USD Million		
	2019	2020	2021
Production Volume (MMT)	12.34	13.72	14.72
Consolidated Revenue ¹	11,361	10,594	14,629
Core EBITDA^{2,3,6}	1,147	1,124	1,743
Combined PET	866	794	1,103
Integrated Oxides and Derivatives ⁶	75	115	377
Fibers	222	195	268
Core EBIT ⁶	598	511	1,108
Core Net Profit after Tax and NCI^{4,6}	387	255	684
Core Net Profit after Tax and NCI (THB m) ⁶	12,002	7,987	21,887
Core EPS after PERP Interest (THB)⁶	1.96	1.29	3.76
Core EBITDA/T (\$)⁶	93	82	118
Operating Cash Flow⁵	1,316	1,388	1,055
Net Operating Debt to Equity^{6,7} (times)	1.30	1.05	0.84

* 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 Operating Cash Flow is after changes in net working capital and cash tax, before maintenance capex.

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

⁷ Net operating debt of 2019 includes capex/acquisition of IVOL and Spindletop as they started/acquired in Jan20 itself.

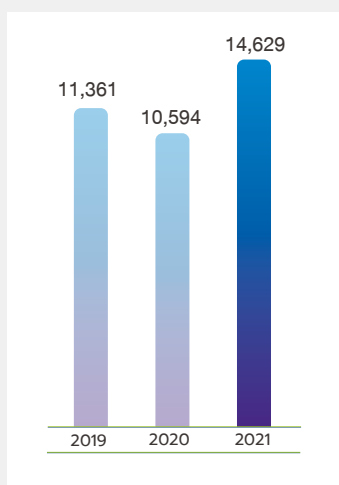
US\$million (except where stated otherwise)	USD Million		
	2019	2020	2021
Net profit after Tax and NCI	169	77	822
Add: Impairment loss of PPE	12	20	9
Less: Gains on bargain purchases	(26)	(58)	-
Less: Gain on disposal of PPE	(6)	(1)	2
Add: Loss on written-off of PPE	1	5	3
Less: Insurance income related to PPE	(1)	(16)	(9)
Add: Acquisition cost and pre-operative expense	26	32	9
Add: Extra expenses related to PO/MTBE turnaround	-	3	-
Add: Extra expenses related to natural calamities (Polar Vortex, Hurricanes and Lightning strikes)	-	8	19
Less: Lakes Charles cracker (IVOL) performance	-	50	73
Less: Other extraordinaries (income)/expense (prior period income in Brazil in 2021)	17	4	(31)
Less: Inventory (gains)/losses	215	173	(274)
Add: Tax on inventory gains/losses	(21)	(42)	62
= Core Net Profit after Tax and NCI	387	255	684



Performance Charts

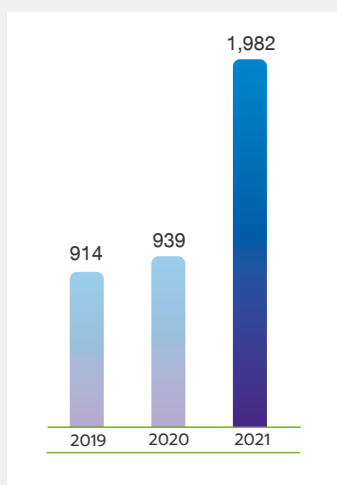
Net Sales

(US\$ Million)



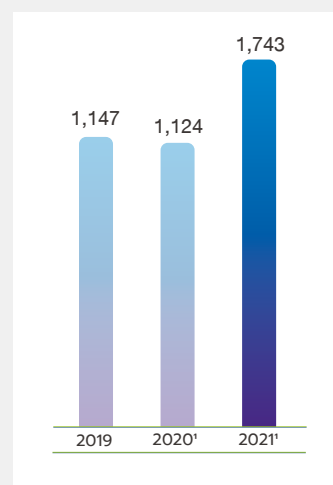
Reported EBITDA

(US\$ Million)



CORE EBITDA

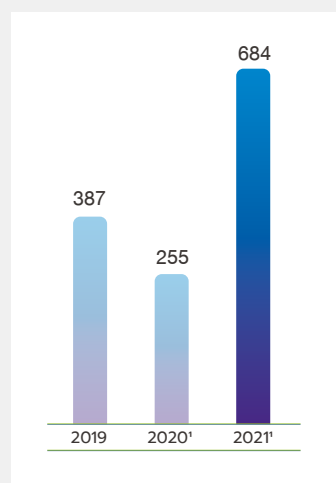
(US\$ Million)



¹ For this purpose, IVOL P&L values are moved below EBITDA to extraordinary items.

Core Net Profit after Tax and NCI

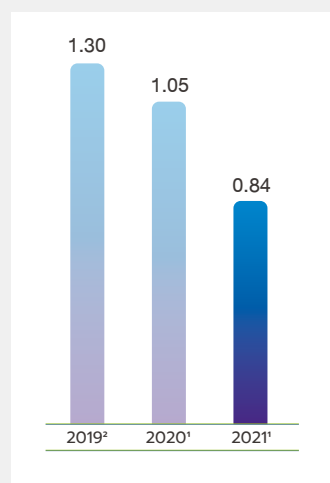
(US\$ Million)



¹ For this purpose, IVOL P&L values are moved below EBITDA to extraordinary items.

Net Operating Debt to Equity

(times)

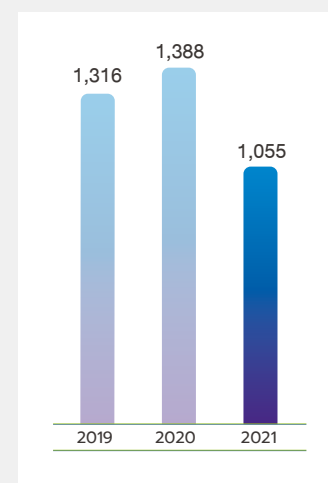


¹ For this purpose, consider IVOL capital employed as Non-operating Debt.

² Net operating debt of 2019 includes capex/acquisition of IVOL and Spindletop as they started/acquired in Jan20 itself.

Operating Cash Flow

(US\$ Million)





Financial Status and Performance

Financial Information

The consolidated and separate financial statements for the year ended December 31, 2019, 2020 and 2021 were audited by Mr. Sumate Jangsamsee, Certified Public Accountant (registration No. 9362) at KPMG Phoomchai Audit Ltd.

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

Financial statements for the year ended 31 December 2021

The auditor's opinion on the consolidated and separate financial statements is that they present fairly, and in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2021 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Key audit matter is as at 31 December 2021, the Group had goodwill of Baht 17,411 million. The cash generating units ("CGU") to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (discounted cash flow ("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 recognized 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 CGU to which goodwill belongs, 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 2019 to 2021.

Statement of Financial Position (Consolidated Financial Statements)

Unit: baht million	As of December 31					
	2019	%	2020	%	2021	%
Assets						
Current assets						
Cash and cash equivalents	10,446.7	2.7	18,948.5	4.2	16,215.3	3.0
Current investments	263.4	0.1	441.9	0.1	240.5	0.0
Trade accounts receivable	34,304.9	9.0	33,421.6	7.4	53,171.9	9.8
Other receivables	1,286.0	0.3	1,969.1	0.4	3,294.6	0.6
Short-term loans to related parties and interest receivable from related parties	174.3	0.0	126.7	0.0	30.2	0.0
Inventories	62,164.9	16.3	53,938.5	11.9	88,979.0	16.4
Other current financial assets	417.9	0.1	1,079.2	0.2	913.8	0.2
Other current assets	9,698.8	2.5	9,909.1	2.2	14,013.8	2.6
Total current assets	118,757.0	31.2	119,834.7	26.4	176,859.1	32.6
Non-current assets						
Other non-current financial assets	3,555.3	0.9	2,193.0	0.5	983.3	0.2
Investments in joint ventures	2,492.2	0.7	2,954.9	0.7	3,488.7	0.6
Other long-term investments	27.4	0.0	108.5	0.0	114.3	0.0
Long-term loans to related parties	28.3	0.0	165.9	0.0	0.0	0.0
Property, plant and equipment	212,422.9	55.8	264,290.9	58.3	291,676.9	53.8
Right-of-use assets	-	-	11,865.3	2.6	11,450.2	2.1

Unit: baht million	As of December 31					
	2019	%	2020	%	2021	%
Goodwill	15,249.9	4.0	15,385.8	3.4	17,410.6	3.2
Intangible assets other than goodwill	24,165.1	6.3	31,230.6	6.9	33,869.3	6.3
Deferred tax assets	2,321.9	0.6	2,611.7	0.6	2,657.0	0.5
Other non-current assets	1,548.0	0.4	2,530.1	0.6	3,318.6	0.6
Total non-current assets	261,810.9	68.8	333,336.8	73.6	364,969.1	67.4
Total assets	380,567.9	100.0	453,171.5	100.0	541,828.2	100.0
Liabilities and equity						
Current liabilities						
Bank overdrafts and short-term loans from financial institutions	30,379.5	8.0	20,725.6	4.6	26,618.8	4.9
Trade accounts payable	57,172.9	15.0	57,782.6	12.8	90,264.9	16.7
Current portion of long-term loans from financial institutions	6,033.5	1.6	8,919.8	2.0	9,587.6	1.8
Current portion of debentures	4,107.8	1.1	7,583.6	1.7	7,783.8	1.4
Current portion of lease liabilities (2019: Current portion of finance lease liabilities)	130.0	0.0	1,713.6	0.4	1,831.3	0.3
Income tax payable	1,049.5	0.3	1,448.9	0.3	3,029.7	0.6
Other current financial liabilities	108.2	0.0	356.5	0.1	237.5	0.0
Other current liabilities	14,009.2	3.7	18,630.9	4.1	21,767.2	4.0
Total current liabilities	112,990.6	29.7	117,161.4	25.9	161,120.7	29.7
Non-current liabilities						
Long-term loans from financial institutions	42,551.2	11.2	99,448.0	21.9	101,076.2	18.7
Lease liabilities (2019: Finance lease liabilities)	689.2	0.2	8,944.5	2.0	8,512.0	1.6
Debentures	63,060.0	16.6	64,625.4	14.3	68,816.7	12.7
Deferred tax liabilities	17,010.0	4.5	16,685.9	3.7	19,902.5	3.7
Non-current provisions for employee benefits	4,696.2	1.2	7,658.5	1.7	7,499.7	1.4
Other non-current financial liabilities	145.0	0.0	1,485.7	0.3	2,331.9	0.4
Other non-current liabilities	1,258.4	0.3	1,554.4	0.3	1,565.1	0.3
Total non-current liabilities	129,410.0	34.0	200,402.3	44.2	209,704.1	38.7
Total liabilities	242,400.6	63.7	317,563.7	70.1	370,824.8	68.4
Equity						
Share capital:						
Authorized share capital	5,666.0	1.5	5,666.0	1.3	5,666.0	1.0
Issued and paid-up share capital	5,614.6	1.5	5,614.6	1.2	5,614.6	1.0
Share premium:						
Share premium on ordinary shares	60,331.4	15.9	60,331.4	13.3	60,331.4	11.1
Hedging reserve (2019, 2020: Net gain (loss) on cash flow hedges)	731.5	0.2	(400.8)	(0.1)	812.6	0.1
Translation reserve (2019, 2020: Exchange differences on translating financial statements)	(16,674.5)	(4.4)	(16,361.9)	(3.6)	(6,036.1)	(1.1)
Excess of cost over book value of acquired subsidiaries	(3,778.1)	(1.0)	(3,758.3)	(0.8)	(4,115.2)	(0.8)

Unit: baht million	As of December 31					
	2019	%	2020	%	2021	%
Differences arising from common control transactions	(1,235.6)	(0.3)	(1,235.6)	(0.3)	(1,235.6)	(0.2)
Retained earnings						
Appropriated						
Legal reserve	4,146.6	1.1	5,303.5	1.2	6,508.0	1.2
Unappropriated	66,350.0	17.4	62,257.3	13.7	81,984.3	15.1
Equity attributable to owners of the parent	115,486.0	30.3	111,750.2	24.7	143,864.0	26.6
Subordinated perpetual debentures	14,905.6	3.9	14,904.8	3.3	14,904.8	2.8
Subordinated perpetual debentures acquired by the subsidiary	(679.6)	(0.2)	-	-	-	-
Equity attributable to owners of the parent	129,711.9	34.1	126,655.0	27.9	158,768.7	29.3
Non-controlling interests	8,455.4	2.2	8,952.8	2.0	12,234.8	2.3
Total equity	138,167.3	36.3	135,607.8	29.9	171,003.4	31.6
Total liabilities and equity	380,567.9	100.0	453,171.5	100.0	541,828.2	100.0

Statement of Income (Consolidated Financial Statements)

Unit: baht million	For the year ended December 31					
	2019 ¹	%	2020 ¹	%	2021	%
Revenue						
Revenue from the sale of goods	352,692.4	100.0	331,512.9	100.0	468,108.3	100.0
Net foreign exchange gain	-	-	119.4	0.0	0.0	-
Gains on bargain purchases	805.5	0.2	1,806.4	0.5	0.0	0.0
Other income	2,183.7	0.6	3,031.5	0.9	4,748.9	1.0
Total revenue	355,681.6	100.8	336,470.2	101.5	472,857.2	101.0
Expenses						
Cost of the sales of goods	309,495.5	87.8	287,881.9	86.8	383,128	81.8
Distribution costs	19,331.5	5.5	21,161.7	6.4	27,849.6	5.9
Administrative expenses	14,460.5	4.1	17,542.3	5.3	19,172.7	4.1
Management benefit expenses	307.1	0.1	309.3	0.1	321.0	0.1
Net foreign exchange loss	296.1	0.1	-	-	297.20	0.06
Total expenses	343,890.8	97.5	326,895.2	98.6	430,768.4	92.0
Profit from operating activities	11,790.9	3.3	9,575.0	2.9	42,088.8	9.0
Finance income	183.2	0.1	192.0	0.1	215.7	0.0
Finance costs	(5,615.1)	(1.6)	(7,673.9)	(2.3)	(7,120.7)	(1.5)
Impairment loss of property, plant and equipment and right-of-use assets	(374.9)	(0.1)	(624.9)	(0.2)	(290.0)	(0.1)
Impairment loss determined in accordance with TFRS 9, net (2019: Provision for bad and doubtful debts expense, net)	(91.6)	(0.0)	(54.1)	(0.0)	(97.1)	(0.0)
Share of net profit of joint ventures accounted for using the equity method	5.3	0.0	142.8	0.0	160.2	0.0

Unit: baht million	For the year ended December 31					
	2019 ¹	%	2020 ¹	%	2021	%
Profit before tax expense (income)	5,897.7	1.7	1,556.9	0.5	34,957.0	7.5
Tax expense (income)	1,534.0	0.4	(1,243.1)	(0.4)	6,703.3	1.4
Profit for the year	4,363.7	1.2	2,800.1	0.8	28,253.7	6.0
Profit attributable to:						
Owners of the parent	5,252.1	1.5	2,414.3	0.7	26,288.0	5.6
Non-controlling interests	(888.4)	(0.3)	385.8	0.1	1,965.7	0.4
Profit for the year	4,363.7	1.2	2,800.1	0.8	28,253.7	6.0
Earnings per share						
Basic earnings per share (in baht)	0.76		0.30		4.55	
Core earnings per share (in baht)²	1.96		1.29		3.76	

* 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 accounts in the 2019 and 2020 financial statements have been reclassified to conform to the disclosure in the 2021 financial statements.

² Core earnings per share of 2020 have been revised to move IVOL P&L values to extraordinary items below EBITDA.

Statement of Cash Flows (Consolidated Financial Statements)

Unit: baht million	For the year ended December 31		
	2019 ¹	2020 ¹	2021
Cash flows from operating activities			
Profit for the year	4,363.7	2,800.1	28,253.7
Adjustments to reconcile profit to cash receipts (payments)			
Tax expense (income)	1,534.0	(1,243.1)	6,703.3
Finance costs	5,615.1	7,673.9	7,120.7
Depreciation	14,343.8	17,757.2	18,633.8
Amortization of intangible assets and other assets	2,696.6	2,730.0	3,102.9
Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net (2019: Provision for bad and doubtful debts expense, net, 2020: Impairment loss recognized in profit or loss determined in accordance with TFRS 9, net)	91.6	54.1	97.1
Employee benefits expense related to defined benefit plans	510.5	623.5	926.4
Unrealized foreign exchange (gain) loss, net	237.7	219.4	(798.0)
Unrealized (gain) loss on the fair value adjustment of derivatives, net (2019, 2020: Unrealized loss on the fair value adjustment of commodity derivatives not qualified for hedge accounting, net)	-	8.6	(24.9)
Share of net profit of joint ventures accounted for using the equity method, net of tax	(5.3)	(142.8)	(160.2)
Impairment loss on property, plant and equipment and right-of-use assets (2019, 2020: Provision for impairment on property, plant and equipment and right-of-use assets)	374.9	624.9	290.0
Provision for losses on inventories devaluation, net	396.6	118.7	238.1
Gain on bargain purchases	(805.5)	(1,806.4)	-
Loss (gain) on disposal of property, plant and equipment, net	(181.1)	(32.9)	51.2
Loss on written-off of property, plant and equipment, net	29.3	161.3	91.3
Finance income	(183.2)	(192.0)	(215.7)
	29,018.8	29,354.5	64,309.5

Unit: baht million	For the year ended December 31		
	2019 ¹	2020 ¹	2021
Changes in operating assets and liabilities			
Trade accounts receivable	9,825.4	4,631.4	(19,559.4)
Inventories	14,857.4	10,732.2	(35,706.2)
Other current assets	613.4	(155.1)	(5,464.8)
Other non-current assets	(3,162.5)	892.1	(853.7)
Trade accounts payable	(6,477.1)	(3,049.2)	31,260.4
Repayment of employee benefit related to defined benefit plans	(378.8)	(432.5)	(753.0)
Other current liabilities	447.5	2,390.2	3,006.5
Other non-current liabilities	(651.0)	386.1	53.7
Net cash generated from operating activities	44,093.1	44,749.6	36,293.0
Taxes paid	(3,248.1)	(1,313.6)	(2,521.2)
Net cash from operating activities	40,845.0	43,436.1	33,771.9
Cash flows from investing activities			
Net cash outflow on acquisitions of businesses	6,604.7	(59,942.1)	(2,363.1)
Cash outflow on payment of payable for acquiring joint operations	413.90	-	(151.5)
Cash outflow on additional investment in joint ventures (2019, 2020: Net cash outflow on additional investment in joint ventures)	272.3	(252.1)	(216.6)
Cash outflow on acquisition of non-controlling interest	1,948.7	(23.0)	(624.3)
Proceeds from the sale (purchase) of other investments	116.3	(501.9)	193.2
Proceeds from the sale of property, plant and equipment	441.1	49.2	330.5
Acquisition of property, plant and equipment	(16,673.9)	(16,788.8)	(19,959.1)
Proceeds from the sale of intangible assets	6.4	7.8	15.6
Acquisition of intangible assets	(126.1)	(1,340.2)	(3,239.2)
Dividend received from joint ventures	-	-	27.2
Finance income received	177.4	189.0	220.1
Net cash used in investing activities	(25,298.2)	(78,602.1)	(25,767.1)
Cash flows from financing activities			
Proceeds from short and long-term loans from financial institutions (2019, 2020: Proceeds from short and long-term loans)	23,691.8	86,557.6	29,038.1
Repayment of short and long-term loans from financial institutions (2019, 2020: Repayment of short and long-term loans)	(22,373.5)	(32,815.2)	(26,654.3)
Proceeds from debentures, net of debenture issuance costs	9,039.0	8,983.6	9,980.8
Proceeds from sale of subordinated perpetual debentures acquired by the subsidiary	-	679.6	-
Payment of the issuance expense of subordinated perpetual debentures	-	(0.8)	-
Repayment of debentures	(4,018.5)	(4,157.6)	(7,705.8)
Payment of lease liabilities (2019: Payment by a lessee for the reduction of the outstanding liability relating to a finance lease)	(197.5)	(2,265.1)	(2,304.9)
Loans to joint ventures, net	(51.4)	(93.0)	(61.3)
Dividends paid to owners of the Company	(7,860.2)	(3,930.1)	(5,193.3)
Dividends paid to non-controlling interests	(199.7)	(186.0)	(410.9)
Finance costs paid	(6,641.9)	(7,549.4)	(6,787.3)
Deferred financing costs paid	(360.1)	(742.7)	(45.3)

Unit: baht million	For the year ended December 31		
	2019 ¹	2020 ¹	2021
Repayment of subordinated perpetual debentures	(15,000.0)	-	-
Issuance of subordinated perpetual debentures, net of issuance cost of 94 million baht	14,905.6	-	-
Subordinated perpetual debentures of the Company acquired by the subsidiary	(679.6)	-	-
Coupon payment on subordinated perpetual debentures	(1,050.0)	(743.8)	(750.0)
Net cash from (used in) financing activities	(10,796.1)	43,737.1	(10,894.3)
Net (decrease) increase in cash and cash equivalents, before the effect of exchange rates	4,750.6	8,571.1	(2,889.5)
Effect of exchange rate changes on cash and cash equivalents	117.6	(69.2)	156.2
Net (decrease) increase in cash and cash equivalents	4,868.2	8,501.8	(2,733.3)
Cash and cash equivalents at 1 January	5,578.4	10,446.7	18,948.5
Cash and cash equivalents at 31 December	10,446.7	18,948.5	16,215.3

¹ Certain accounts in the 2019 and 2020 financial statements have been reclassified to conform to the disclosure in the 2021 financial statements.

Key Financial Ratio

		For the year ended December 31		
		2019	2020	2021
Liquidity Ratio				
Current ratio	times	1.1	1.0	1.1
Quick ratio	times	0.4	0.5	0.4
Cash from operating ratio	times	0.4	0.4	0.2
Receivables turnover ratio	times	9.7	9.6	10.7
Collection days	days	37.2	37.5	33.8
Inventory turnover ratio	times	4.6	4.9	5.3
Average number of days sales	days	78.3	74.1	68.1
Account payable turnover ratio	times	5.5	5.0	5.2
Payment days	days	65.0	71.9	69.6
Cash cycle	days	50.5	39.6	32.3
Profitability Ratio				
Gross profit margin	%	12.2	13.2	18.2
Operating profit margin	%	2.6	1.4	8.0
Non-operating profit margin	%	0.8	1.5	0.9
Net profit margin	%	1.5	0.7	5.6
Return on equity (ROE)	%	3.8	1.9	18.4
Efficiency Ratio				
Return on assets (ROA)	%	1.1	0.7	5.7
Return on fixed assets	%	9.0	8.6	16.9
Asset turnover	times	0.9	0.8	1.0
Financial Policy Ratio				
Interest bearing debt-to-equity	times	1.1	1.6	1.3
Net interest bearing debt-to-equity	times	1.0	1.4	1.2
Interest coverage ratio (on net cash provided by operating activities)	times	7.3	5.7	4.7
Interest coverage ratio (on EBITDA)	times	5.1	3.8	8.9



Mr. Sri Prakash Lohia



Message from the Chairman

Dear Stakeholders,

Over the past decade, it is fair to say that Indorama Ventures has achieved its stated vision to become a truly global chemical company. In the last two years, as the global pandemic caused unprecedented disruption all over the world, we proved the company's resilience under the most testing conditions in our history, culminating in a record financial performance in 2021. This achievement has given us greater confidence in the value-creating potential of our integrated global model, our people, and our processes.

I am proud that throughout this period we were able to look after our people as a responsible organization that values our employees. On behalf of the Board, I express our deep condolences to the families and colleagues of those who were taken from us. Our experience of the pandemic has underscored the value of investing in our employees' wellbeing. Our extended IVL family and their near ones battled extraordinary circumstances. Our 2021 performance is a testament to their unstinting response to the challenge. All through this difficult era, it was clear to me – as I am sure is the case for all our leaders – that it is truly our people who make the difference. I sincerely thank them all for their tireless efforts.

IVL's strength today is a consequence of a strategy that we articulated when we listed in 2020. Already a major PET manufacturer at the time, we set out to leverage our platform to become a global chemical company. Spearheaded by the Group CEO, his senior management team and generous support of the members of the Board of Directors, our teams have employed their time well. Through a series of calculated acquisitions, including the purchase of the 'Spindletop' assets in 2020, IVL grew its leadership in key premium markets and formed the three distinct segments that make up our integrated petrochemical-based model today.

When the pandemic struck, we were not swayed from our task. Throughout the period, our teams were transforming IVL's processes towards becoming a future-ready organization, including implementing a new ERP, creating six corporate Enabling Functions, and launching the Global Business Services (GBS) center in India. In

2021, we announced our acquisition of Brazil-based Oxiteno, which will further enhance our IOD segment. We also strengthened the Indorama Management Council (IMC) – our highest operational management committee – by rotating leaders and adding the segment Executive Presidents to empower more agile decision making.

Today IVL employs more than 24,000 people at 125 sites in 33 countries¹. We enjoy financial strength, growing profitability, leadership in our chosen sector, a highly resilient integrated portfolio of innovative and sustainable products, and an emerging generation of international leaders with a growth mindset.

Vision 2030

As we emerge from this remarkable period of change, it is worth reflecting on the key enablers of our success and ensure that these fundamentals continue to drive our ambition. Our innate agility, for example, is central to IVL's storied past. As we reset our business for the next major step in our journey, we must retain what has worked so well for us for more than 30 years and, once again, rely on our agility to adapt to the new environment.

In this same spirit of agility, I am pleased to see that our management team, having so successfully guided our company to this point, is once again recalibrating our business for the post-pandemic era under a new *Vision 2030* ambition. Building on our track record of profitable growth, we will leverage our financial strength, global market leadership, and the ongoing transformation of our processes to become an industry leader in sustainability.

Investing In a More Sustainable World

Guiding *Vision 2030*, is our new Purpose statement: *Reimagining chemistry together to create a better world*. As demand continues apace for plastic products that are more useful and cheaper, and which transform everyday living for billions of people, our publicly stated purpose becomes even more central to our Vision of making great and more sustainable products for society.

¹ excludes Oxiteno acquisition

Our sustainability journey is not new. In 2021, IVL celebrated its tenth year of sustainability reporting through the 3Ps – People, Planet and Prosperity. During this period, we became the world’s largest producer of recycled PET for beverage bottles, increasing recycling capacity almost 100 times to 330,000 tons per year. Today, we have an ambition to recycle 50 billion PET bottles every year by 2025.

The financial sector is awarding us high marks for our achievements in lowering our impact on the environment, improving human rights, ethics and sustainable procurement, and rightly positions us as a responsible player in the global business community. In 2021, we were included among top global chemical companies in the Dow Jones Sustainability Indices (DJSI) - World, for the third consecutive year, and maintained inclusion in the DJSI - Emerging Markets in the chemicals industry for the fifth year. We also received the Stock Exchange of Thailand’s Best Sustainability award, a Platinum recognition for sustainability from EcoVadis, and achieved ChemScore top ranking among the world’s top 50 global chemical companies.

These recognitions have powerful spin-offs for our financing strategy. During the year we issued a 10 billion baht Sustainability-Linked Bond (SLB), the largest in Thailand. The instrument is linked to our targets in reducing greenhouse gas emissions, increasing PET recycling and increasing our use of renewable energy sources.

Corporate Governance

Over the past decade, we have strengthened our corporate governance processes by introducing policies and procedures and including more independent directors who guide us towards excellence in boardroom ethics and governance. In November, I was pleased to welcome the appointment of Dr. Harald Link to the Board as an independent director. We welcome his deep experience as a director and his business acumen in the field of renewable energy.

Our Corporate Governance manual, combined with extensive training, provides a strong platform for good governance practices. During the year, our Corporate Governance Report was awarded an “Excellent 5 Star” score by the Thai Institute of Directors (IOD) in conjunction with the Stock Exchange and Security Exchange Commission of Thailand. We also renewed our Private Sector Collective Action Coalition Against Corruption (CAC) certification in Thailand. We will continue to develop our standards to ensure that our anti-corruption practices are implemented in the spirit in which they were created.

Extending Our Appreciation

I would like to thank my fellow Directors for their ongoing support in helping position IVL for its continued success. I would like to also thank the management team for their leadership, as well as each member of the IVL family and our stakeholders, who share our dreams and achievements. Finally, I would like to thank all our employees, and to wish them every success in driving our company towards achieving *Vision 2030*.



Sri Prakash Lohia
Chairman

Launching our new website for

INDORAMA VENTURES INTEGRATED OXIDES AND DERIVATIVES BUSINESS

Find out more about IVL's
diverse range of Integrated
Oxides and Derivatives
(IOD) products

<https://iod.indoramaventures.com>

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@IVLteam



Indorama Ventures PCL



Mr. Alope Lohia



Message from the Group Chief Executive Officer

Dear Stakeholders,

As I reviewed my last two annual addresses – which together represent the peak of the pandemic era – it struck me how far we have come during a historic period in which we faced unprecedented disruption. That our model’s inherent resilience and our innate agility passed every test during this time – the toughest in our history – invariably must be a key theme of this year’s letter.

We should celebrate our success, review what worked well, and congratulate our employees and their loved ones who valiantly bore the weight of the pandemic and ensured that we were more than equal to the challenge. I thank them all for a truly monumental effort. We should also pay tribute to those among us who paid the ultimate price of the pandemic, and my thoughts and prayers go out to their families and our colleagues who worked closely with them.

Our record 2021 performance heralds a new (dare I say ‘post-pandemic’) era of equally profound change. Our world will not be the same, whether it be how we work, how we relate to our stakeholders, or the kinds of products we make. For us at IVL, change has always been another word for opportunity, and so another theme of my letter this year is how we are taking advantage of the disruption.

We have already begun to reset our business for the new era, at levels of demand which are already approaching or exceeding pre-pandemic peaks. At our annual business planning event in Phuket in January 2022, I outlined our *Vision 2030* to build our industry leadership in sustainability, guided by our new purpose statement: *Reimagining chemistry together to create a better world*.

Our aim to be a more purposeful organization is not just a slogan on our stationery. *Vision 2030* is a bold but realistic ambition that will, once again, require all our focus and our full arsenal of inherent IVL strengths. It is entirely achievable. In fact, I have never been more confident in our global leadership position, our integrated model, and the ongoing transformation of our people, platforms, and processes. Our teams’ performance during the pandemic showed that we must never underestimate our ability to overcome difficult challenges, and we should go forward with growing confidence.

Two words have come to mind frequently over the past year – resilience and agility. At IVL, they go hand-in-glove as powerful drivers of our ambition for over 30 years. We must ensure that we continue to prize these vital IVL attributes as we build our future in a more sustainable world.

2021 In Review and Outlook

The year ended with a record Core EBITDA of US\$1,743 million, up 55% year-on-year. Much of this was due to resurgent consumer confidence as lockdowns eased and vaccinations were rolled out in many of our key markets. The rise in global demand sparked a wave of supply disruptions and inflationary pressures, including a steep rise in crude oil prices.

The disruptions played to our strengths as our teams responded with IVL’s traditional agility to ensure a steady supply of products as our customers’ preferred provider across our regional footprint. We also benefited from local market import parity pricing and currency hedging strategies, as well as the return of our shale gas advantage which boosted margins in our key western markets. At the same time, the Group-wide transformation programs that we started three years ago are generating higher-than-expected efficiencies while also modernizing our processes and future-proofing our business.

All three of our segments performed admirably as they took further steps towards becoming self-sufficient businesses under our integrated model. I wrote earlier about the need to retain our agility as a core IVL attribute. A key part of this is empowering our segment leaders to shape their businesses according to their distinct growth profiles. During the year, we added the segment Executive Presidents to the Indorama Management Council (IMC), our highest operational decision-making body. Developing our segments as self-sustaining, independent, and differentiated businesses is an important focus under *Vision 2030*.

As our segments reset their business plans for the next three years, there are early indicators of even better margins, incremental volume increases, and further efficiencies going into 2022. Still, even as we have learned to manage the pandemic, new challenges are certain to arise, such as the emerging situation in Ukraine as I write.

Our growing confidence is an attribute. We remain committed to our goal of doubling our EBITDA every five years, investing in customer-led innovation, being a strategic partner to our customers, and providing opportunities for our people.

Employee Health and Safety

As a responsible organization, I was extremely proud of how we responded to the plight of our employees and their families as we faced the pandemic together. The measures that we implemented when the virus first took hold in 2020, continued into 2021. Sadly, our fatalities grew from 7 employees in 2020 to 16 in the past year (and a further 2 fatalities as I write in 2022). They will always be a part of our IVL family.

In 2021, we expanded the supporting text of our “We are responsible” core value statement to include “Health and safety are non-negotiable.” I am deeply humbled that IVL, as a strong family-based organization, was able to offer a range of support services to our employees, including promoting vaccination programs wherever we could. We were able to do this because we invested in new Enabling Functions such as our Business Continuity Management (BCM) and Environmental, Health and Safety (EHS) teams who prepared us with global best-practice processes that allow us to manage risk.

How can we forget the many kind words, the messages of consolation – the stream of online meetings – as we supported each other through this historic period. Even as we adapted to the new ways of working, the longevity of the pandemic inevitably took a toll on our employees’ physical and psychological health. Our HR teams learned much about the benefits and challenges of work-from-home settings and are implementing new hybrid workplace policies that will allow us to look after our employees’ wellbeing as well as attract, train, and retain talent.

Transforming Our People, Processes, and Platforms

It is a further testament to our resilience that our transformation programs continued apace throughout the period. I can understand how it would be tempting for companies to “batten down the hatches” and wait for the storm to pass, but that isn’t an option at IVL, which has a clear mandate for growth and a roadmap for continuous improvement.

During the year, we implemented our plan for a single ERP, our most ambitious transformation project, in three North American entities, and our SAP S4/HANA implementation team is gearing up for further rollouts in 2022. We also opened our first Global Business Solutions (GBS) center in India to drive efficiencies by adopting practices and technology under one roof. Talented leads of our six new Enabling Functions are now in place and they are progressing with their development plans.

Our decision to push on with these major projects was a sound one. The initial successes have given our teams more confidence. The transformation of our Processes, Platforms, and People is a springboard for the new chapter in IVL’s storied journey.

Creating an Unparalleled Global Footprint in Surfactants

Our announcement to acquire Brazil-based Oxiteno – a key highlight of the year – heralds new growth potential for our Integrated Oxides and Derivatives (IOD) segment. As a result of this highly complementary transaction, IVL will become a leading player in the high-value integrated surfactants market, particularly in the Americas, with additional potential to expand in Asia and Europe.

With the experience of completing some 50 acquisitions in 20 years, we hold great store in assessing existing management teams as an important part of our M&A strategy. During the process, I was very pleased to appreciate Oxiteno’s highly experienced team, as well as their family-based origins and shared values. Oxiteno brings strong customer relationships in attractive LATAM end-markets, world-class expertise in sustainability innovation, and an environmental governance record including in lowering greenhouse gas emissions.

This transaction sets a new high bar in how we plan our new acquisitions as we execute a 100-day integration plan under a new M&A playbook involving best-in-class specialist expertise and processes.

Vision 2030 and Purpose

Throughout this report I have referred to *Vision 2030*, guided by our new purpose statement: *Reimagining chemistry together to create a better world*. Let me now explain it more fully.

As a modest start-up some 30 years ago, our purpose was simply to cater for the enormous demand for plastic goods. After some initial success, we felt confident enough to set a vision to become a leading PET producer, which we achieved by the time we listed in 2010. We then upgraded our Vision to become a global chemical company. Having proved our mettle during this testing time, culminating in a stellar 2021 performance, we are now ready to reset our ambition once again.

In the years since we were founded, there has been a profound shift in attitudes to the health of our environment and our communities and planet that no company can afford to ignore. This is not new; IVL has been responding to this trend for some time, and in 2021 we were pleased to celebrate our tenth year of sustainability reporting. We also added the word “sustainable” to our Vision statement: *To be a world-class sustainable chemical company making great products for society*.

A clearly started purpose – *why* we do what we do – is important because we have seen how stakeholders, including consumers and the broader community, care as much about a company’s purpose as they do about its products and services. Our purpose is aligned with our stakeholders’ desire for a better, more sustainable world. The pace of disruption is now so much faster than it has ever been. Having reset our business for the ‘new normal’ era, we are ready to build our industry leadership in sustainability.

This is a big leap in our journey towards ‘net zero’, centered around three familiar pillars: Decarbonization of Operations, Innovative and Sustainable Products, and a Future-Ready Organization. IVL, which is already the world’s largest producer of recycled PET for beverage bottles, will invest in infrastructure to deliver the circular economy and reduce Scope 3 greenhouse gas emissions, and build PET recycling capacity. New technologies will help us capture carbon from our operations, increase our use of renewable energy, and phase out coal to lower Scope 1 and Scope 2 greenhouse gas emissions.

IVL will also introduce more bio-based feedstock across our value chain. More than 80% of our feedstock is polyester related, which is possible to be bio-renewable or circular. By 2030, we aim to source a third of our feedstock mix from sustainable sources, assisted further by the Oxiteno acquisition which brings significant credentials in green energy innovation including in bio-based raw material.

Additional measures to future-proof the company will underpin *Vision 2030*, including developing leaders with a growth mindset and empowering them with the tools to lead. Our Combined PET segment is focused on strengthening our leading position in recycling; IOD segment will unlock benefits of the Oxiteno acquisition, leverage bio-feedstock, and grow adjacent opportunities, while Fibers segment will expand its diverse portfolio and R&D partnerships to promote more sustainable products.

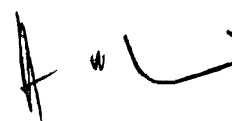
Our ambition must be people led. Employees, customers and end-consumers, and our shareholders, all have a role.

My Priorities

When we look back over the last year, I hope we agree that we used our time well. Our teams took advantage of the disruption to streamline our business, improve our processes, and build platforms for growth. We never took a step back. In fact, we continued to deliver an exceptionally high standard of service to our customers while carrying on with our program of transformation and continuous improvement. The result of our work is that we now have an unprecedented platform for further growth.

When I outlined *Vision 2030* to our leaders early in 2022, I also named my personal priorities. The first one I mentioned is our people. Succession planning is key to sustainability, and we need to recruit, develop, and promote talented leaders with a growth mindset. Second is to introduce more bio-based feedstock to our products. Third is developing our segment strategy to empower our three segments to fulfill their potential. Finally, I will focus on digitalization as a critical part of our transformation.

All these priorities are my personal pledge in fulfilling IVL’s purpose. I hope you are as excited as I am!



Alope Lohia
Group Chief Executive Officer



Message from the Chief Executive Officer



Mr. Dilip Kumar Agarwal

Dear Stakeholders,

The last two years have been a defining period for IVL as the world continues to fight the global pandemic, testing the resilience of people, companies, and countries. As was the case for all organizations, we faced challenges in many forms. Business disruptions apart, many members of our extended family – our employees and their near ones, our value chain partners, our communities – faced health emergencies. Not only did many suffer physical pain or worse but the pandemic also caused psychological hardship as people adjusted to new ways of living and working.

I am immensely proud how our employees displayed enormous character in coping with personal concerns while staying focused on our customers and our business. Our record 2021 performance conveys only a small part of our employees' courage, compassion, community spirit and strength.

As a responsible organization, the health and safety of our employees is non-negotiable, and I am pleased how we adapted to changing circumstances by implementing new ways of working to protect our employees, our partners, and our surrounding communities. Preventive actions included continuous education, supporting primary measures such as vaccination, promoting additional layers of protection through health checkpoints, using protective gear at all our sites, and respecting physical distancing. Where possible, we embraced work-from-home policies, eliminated non-essential travel, and used online tools for collaboration.

Even as we were physically apart, these measures brought us closer than ever before. Our initiatives to maintain morale and support emotional and physical health, will remain in my memory as an abiding mark of our compassion for each other. I am convinced that this, as much as anything else, helped our business to recover strongly and post a stellar result in 2021.

It is a testament to our teams that we saw no pandemic-related shutdowns at any of our sites. Every one of IVL's more than 24,000¹ employees deserves a special mention. We thank them sincerely for their dedication in ensuring the uninterrupted and efficient functioning of our operations throughout the year.

2021 Earnings Highlights

In 2021, we delivered a record performance as the economy rebounded from the worst days of the pandemic and our business proved its resilience during the most testing period in our history. Growth was seen across all three of our business segments as our global footprint and integrated model was able to rebuff a range of headwinds including inflation, energy shocks and supply chain disruptions. In fact, we benefited from them.

The year highlighted our advantage of resilience, as we provide for the safety and wellbeing of billions of consumers, whose lives we touch everyday through our products. This represents an inherent robustness in our integrated business model that not only allowed us to navigate through the pandemic, but also serves as a springboard for further growth in 2022 and beyond.

As vaccinations were rolled out, rising consumer confidence fueled demand for IVL's balanced portfolio of products, and our managers responded quickly to fulfill customers' needs. Our customers responded to us as their preferred supplier amid severe logistics constraints and rising freight prices.

Core EBITDA grew 55% on a year-on-year basis to US\$1,743 million on record production volumes of 14.72 MMT (up 7%). Core Net Profit After Tax and NCI rose 168% percent to US\$684 million on Consolidated Revenue of US\$14,629 million (up 38%). Core ROCE improved to 11.8% from 5.6% in 2020. We continued to strengthen our balance sheet and reduced Net Operating Debt to Equity 0.84 times at the end of the financial year 2021 from 1.05 times at the end of 2020.

Our operating cash conversion decreased relative to 2020 as we invested in working capital to meet the supply chain disruptions and buildup in inventories. Given our strong earnings performance and increased profile through the announcement of the Oxiteno acquisition, our rating agency upgraded our outlook from negative to stable with AA- rating affirmed, underscoring our financial strength and earnings quality.

Cash flow was used for growth-related investments, sustainability projects, and reliability capex, and to reward our shareholders with a higher dividend. We ended the year with lower debt, Net Debt

to Equity of 1.22 as against 1.42 at the beginning of the year, and strong debt service coverage of 2.46. Lenders continue to appreciate our capital management approach, and in 2021 we completed Thailand's biggest-ever sustainability-linked debentures for 10 billion baht.

Macroeconomic tailwinds supported our performance, including government stimulus packages. In premium western markets, our margins improved as higher freight rates widened our local import parity pricing advantage. In the fourth quarter, we benefited from the introduction of China's dual control policy, which caused production disruptions and increased petrochemical margins. This is likely to continue for the foreseeable future.

All three of our segments posted significant gains through the year. Our largest Combined PET segment had a banner year, posting a 39% increase in Core EBITDA to US\$1,103 million in the context of healthy demand and low inventories. The resetting of contracts in 2022 will capture the full benefit of higher freight rates and the consequent beneficial impact on import parity. The segment is expected to enjoy improved margins in 2022. As we grow IVL's profile in our other segments, our traditional PET business continues to be a solid platform and a source of financial strength for the Group.

Our IOD segment recorded a Core EBITDA of US\$377 million, an increase of 228% from a year earlier. With higher oil prices expected to continue into 2022, the segment will continue to benefit from shale gas economics, the expected corresponding improvement in MEG spreads, as well as significant integrated margin upside coming from Lake Charles (Indorama Ventures Olefins) ethylene cracker, which resumed operations in late 2021. We also look forward to welcoming our new colleagues from the Oxiteno acquisition, which we expect to close in the first half of 2022. This acquisition will bring complementary high value-added (HVA) products, world-class credentials in green energy innovation, sustainable feedstock integration, and geographical diversification to the IOD segment.

Our Fibers segment rebounded from a year earlier, delivering Core EBITDA of US\$268 million, an increase of 37% year-on-year as volumes rose 11%. The segment benefited from margin gains due to tight markets and a favorable product mix, with setbacks coming from energy and commodity price increases. We look forward to the resolution of the ongoing semiconductor shortage, which should herald a full recovery in the Fibers Mobility vertical. As the Hygiene vertical finds its 'new normal' from the peak of 2020, demand remains steadily above pre-pandemic levels. The Lifestyle vertical will continue to benefit from demand improvement, especially in emerging markets such as India and Brazil.

¹ Excluding Oxiteno acquisition.

The record performance in 2021 highlighted our regionally integrated model's competitive advantage of serving demand-inelastic markets across all three of our segments. We ended the year with a higher credit rating, a healthier balance sheet with lower debt ratios and adequate liquidity, a higher ROCE and lower cost of debt, and stronger risk-management measures.

The enterprise-wide transformation programs that we started three years ago also took root in 2021 and are delivering efficiencies faster than planned. As the world emerges from the pandemic, our increased confidence in IVL's resilient model sets a strong foundation for further growth through 2024 and beyond.

Sustainability Commitments

The pandemic has deepened our understanding of sustainability, where future readiness means a convergence of People, Planet and Prosperity. Early in 2022, we announced our *Vision 2030* ambition to build our industry leadership in sustainability. This is a far-reaching progression in IVL's journey towards 'net zero', in line with our commitment to reduce our environmental footprint.

By 2030, IVL will invest to implement technologies to capture carbon from our operations, increase renewable energy consumption, and phase out coal to reduce Scope 1 and Scope 2 greenhouse gas emissions. The company is building the infrastructure to deliver the circular economy and address Scope 3 emissions, including investing in PET recycling by 2030.

IVL will also introduce more bio-based feedstock across our integrated petrochemical value chain. By 2030, one third of our feedstock mix will come from sustainable sources, which helps to reduce Scope 3 emissions. Additional measures to future-proof the company include developing a new generation of leaders.

In the shorter term, we have set a target of 10% greenhouse intensity reduction by 2025, which we aim to achieve through operational eco-efficiency, renewable energy, recycling, future technologies, and natural capital solutions. We will invest US\$1.5 billion for these sustainability initiatives by 2025.

We launched a holistic effort aimed at improving our ESG grades among the top rating agencies such as Dow Jones Sustainability Indices (DJSI), FTSE4Good, MSCI and Sustainalytics. As a result, we were able to better showcase our work throughout the year.

We proudly launched our first carbon neutral PET pellets through our DEJA™ sustainable brand platform. The pellets are made with renewable energy, locally sourced materials, and low-impact water transport, to achieve a neutral carbon footprint for our customers. We are adding more products under the DEJA™ brand to achieve our sustainability goals.

As we prepare ourselves for the new world of circularity, we are confident in our ability to produce strong financial performance with ample headroom to invest in and deliver on our vision.

Recycling Aspirations

PET is 100% recyclable and has a lower carbon footprint compared to other plastics. As the world's largest producer of recycled PET (rPET) for beverage bottles, participating in a circular economy continues to be an important growth area for us. In the past decade, we have increased our rPET capacity by more than 100 times to 330,000 tons per year. We are making prudent investments towards our goal of 50 billion bottles per year by 2025, including acquiring Carbonlite's rPET assets in the U.S. during the year.

In 2021 the Ellen MacArthur Foundation Global Commitment Progress Report found IVL made "significant progress" on our recycling commitment. The report – published in collaboration with the UN Environment Programme – noted IVL's recycling capacity grew 15%, an increase of 9% from the previous year. In 2022 IVL will grow our recycling capacity and increase our engagement with the Foundation.

Product Innovation

Early in 2022, as we reset our business plan for the post-pandemic era, we understood the need to align our business with the increased demand for more innovative products that contribute to a more sustainable world. Our ambition to build our industry leadership in sustainability must be fueled by our ability to invest in cutting-edge innovation to make ever-more useful products. We are making progress in developing sustainable virgin and recycled PET solutions that fulfil our customers' circularity needs and which make collecting and recycling materials commercially viable.

In our Fibers segment, we have established centers of innovation in the Hygiene and Mobility verticals, with innovative tracking systems to monitor new product performance. Our aim is to achieve a Vitality Index score – a measure of new product sales compared to overall revenue – of 25% by 2023. In our IOD segment, we are developing high value-added (HVA) specialty surfactants used in agrochemicals, oil fields, and personal and home care products where innovation is a strong market differentiator.

Building a 'Future-Ready' Organization

Building on our progress in the three years to 2021, IVL will continue to invest in Platform, People, and Systems to leverage our global footprint and integrated model to drive earnings growth and increase productivity. These transformational initiatives will unlock potential and contribute to EBITDA growth of more than 60% to US\$2.8-3 billion and 15%+ ROCE by 2024. Disciplined capital allocation will generate US\$5-6 billion in free cash flow for future opportunities.

Project Olympus, the company's cost efficiencies and business transformation project, is tracking ahead of its target of US\$610 million in annual recurring EBITDA gains by 2023, with an additional US\$50-90 million in new savings identified in 2024. Our investment in a single ERP (SAP S4/HANA), which was successfully implemented in North America in 2021, will be rolled out across the rest of the organization as an enabler of operational excellence. The Global Business Services (GBS) center, which opened in India in 2021, will drive standardization and optimize costs across IVL.

Talented leads are now in place for our six new Enabling Functions and they are expanding their influence across IVL with specialist expertise in the areas of Communication; Business Continuity Management (BCM); Environment; Health and Safety (EHS); Indorama Ventures Excellence (IVEX); Digital; and Sustainability. As part of their development roadmap, they are collaborating as internal consultants on a pilot, Project Argus, a pilot focused on collective solutions to help our recycling business unit.

We have a holistic approach towards developing our leaders. For our future-ready organization, we need leaders with a 'growth mindset' who can harness technology and new ways of working. To enable more agile decision making, we have strengthened the Indorama Management Council (IMC) – by rotating experienced executives and adding the Executive Presidents of the three segments.

To ensure succession planning, we continued with our talent pollination and diversity and inclusion programs, increasing the number of cross-segment opportunities across IVL.

Acknowledgements

Having started this letter by acknowledging the challenges our employees faced in their personal and professional lives amid the pandemic, in 2021 we extended support to all staff and their dependents through our Global Employee Assistance Program to support emotional, practical, and physical wellbeing.

Our performance in 2021 is entirely due to their dedication and, on behalf of the Indorama Management Council, we would like to thank everyone for their tireless pursuit of the company's goals. Our core business strengths – agility and resilience – are mirrored in our people.

I also thank our shareholders, lenders, suppliers and customers for their resolute support during this most testing of times. I believe your resolve will not go unrewarded as we look forward to more success under our 2022-24 business plan and our broader ambitions to build our industry leadership in sustainability under *Vision 2030*.



Dilip Kumar Agarwal
Chief Executive Officer



Message from the Chief Strategy Officer



Dear Stakeholders,

IVL has grown at an unprecedented pace, from offering a single product in one region to a global enterprise with 125 sites offering products across the petrochemical chain in 33 countries¹. In our early phases, we followed a simple business unit portfolio management approach. As complexity increased, we understood the need to unlock cross-functional inter-dependencies to fulfil our potential as 'One IVL'.

The Indorama Management Council (IMC), after careful deliberation, created six new Enabling Functions: Sustainability, Environment Health and Safety (EHS), Indorama Ventures Excellence (IVEX), Digital, Business Continuity Management (BCM), and Communication. Their purpose is to develop, streamline and align IVL's managing processes to create, communicate and help execute the company's strategy.

The Enabling Functions are steered by experienced professionals who were identified internally as well as recruited from the industry. They work closely with IVL's business units to identify pain points and find solutions with the deployment of advanced tools, processes, and technologies. We have also created a platform for the Enabling Functions to collaborate as single unit with the business units.

The Enabling Functions have initiated various improvement projects across the company, including Project Titan, which is focused on our top 20 sites; Project Horizon to collaborate with our top 50 leaders; and Project Argus aimed at end-to-end solutions for IVL's PET recycling business unit.

The Sustainability function is addressing decarbonization, natural capital solutions, mechanical and advanced recycling, renewable energy and coal phase out, green projects, and bio-based and circular feedstock aimed at reducing greenhouse gas emissions.

¹ excludes Oxiteno acquisition

IVEX is introducing world-class tools and techniques to create a culture of continuous improvement. In 2021, the function trained 441 people as 'lean' experts and started 346 improvement projects.

The Digital enabling function is introducing cutting-edge technologies to improve process controls, manage asset performance, monitor performance, and implement data science and machine learning.

Our employees' health and safety is top priority, and our EHS team is introducing improved governance in the areas of standardization, assurance, capacity building, communication and culture.

BCM is implementing capabilities to identify, understand and manage the full spectrum of risks a global enterprise must expect as we become increasingly connected with our world.

Our Communication team is developing our global internal and external communications capabilities and expertise as a strategic driver of our business all over the world.

As the Enabling Functions collaborate and converge with our many business units, we will build internal capabilities and a foundation for continuous improvement of IVL's global, integrated business systems.



Udey Paul Singh Gill
Chief Strategy Officer – IVL Group



Message from the Chief Human Resources Officer



Mr. Klaus Holz

Dear Stakeholders,

The pandemic ushered a new era for human resources around the world, including here at IVL where our teams responded with customary resilience and adapted quickly to the challenges.

IVL's 2021 performance is proof of how well we pivoted to the evolving situation. This innate agility is a quality that we must retain as we reset our workplaces for the new era under *Vision 2030*. No doubt some things have changed permanently. Empowering our leaders with training, identifying successors, and introducing hybrid working policies are important parts of our HR development roadmap.

In 2021, we took further steps along our modernization journey, and the results have given us more confidence in continuously improving our people-related processes, technology and capabilities.

Developing Leaders

In 2020, we launched our Leadership Curriculum to train our top talent. Since then, we are pursuing more internal appointments, with a focus on relocating people across the organization. Despite the pandemic, more than 1,600 leaders have participated in leadership training and other development programs. We expect to reach full training capacity, some 750 leaders per year, in the next two years.

Succession Planning

Launched in 2019, our program to build a robust pipeline of excellent candidates is designed to be well structured, consistently deployed, and meet organization demands and talent supply. In the last three years, we expanded the program from nearly 40 roles to about 270, and validated about 520 internal successors. We have also made good progress on successor readiness goals, as well as our diversity and inclusion initiatives.

SAP’s HR module, a part of our ERP rollout, is being deployed to manage this process. From 2022, we will expand the solution to more than 900 management roles. By 2023, we aim to reach full global deployment, covering about 1,000 roles and 2,000 validated successors.

Hybrid Working Policies

As a result of the pandemic, we have a better understanding of the benefits and challenges of working from home. We concluded that a hybrid working model is viable for some positions as a permanent setting. Our HR and EHS teams are crafting guidelines to help managers determine the optimal solution for their teams. The guideline is not a ‘one size fits all’ policy and is not prescriptive.

Culture Awards

To close, in 2021 we launched a new award category, ‘The IVL Culture Awards’, to recognize values and behaviors in five categories: Customer Centric, Responsibility, Driving Diversity, Change Enabler, and Leadership. The existing, “IVL Enterprise Awards”, will continue alongside the new category.

I wish you all a successful year ahead. I would also like to thank our HR teams all over the world for an exceptional 2021. We have much work to do.



Klaus Holz
Chief Human Resources Officer



Message from the Interim Executive President Combined PET



Dear Stakeholders,

This is an exciting time for IVL as the world enters a post-pandemic era. Combined PET (CPET) delivered exceptional performances across all verticals in 2021 as the economic recovery and a renewed focus on recyclable and recycled material drove end-consumer demand for our products. Supply chain constraints resulted in strong industry spreads. We achieved a Core EBITDA of US\$1,103 million, a year-on-year increase of 39%. Our Core ROCE increased from 13.1% in 2020 to 19.1% due to efficient inventory and working capital management.

CPET will continue to generate strong earnings in 2022 amid healthy consumer demand and new contracts capture the benefits of improved import parity resulting from higher freight rates. PET has a bright future as the most economic, fully recyclable packaging material of choice, supported by population growth.

The Integrated PET vertical outperformed in all four regions (Asia, Europe, Africa and Americas), supported by market tightness arising from feedstock and supply chain constraints during the year. The vertical delivered Core EBITDA of US\$900 million, an increase of 40% year-on-year as total sales volume rose 3%.

Our experienced teams overcame major challenges – a hallmark of the CPET segment. The European PTA industry experienced severe disruptions in 2021 due to several force majeure declarations, while the PTA and PET industry in North America faced acetic acid and MEG shortages. However, IVL's global footprint and feedstock integration are a key advantage in continuing to meet customers' needs. We expect the high PET-PTA margins to continue into 2022 in the Americas and Europe, backed by superior recyclability, favorable market structure, import barriers, and high contract prices that will command a premium.

Our decision to scale up our recycling operations was timely, enabling us to harness the surge in demand from consumers and major brands. Our recycling business experienced continued strong capacity growth. Demand for recycled PET will continue to grow as commitments from brand owners for more recycled content to meet consumers sustainability expectations drive a premium over virgin PET. We continued to expand our recycling footprint despite the pandemic, and we are on track to meet our 2025 capacity ambition.

Our Packaging vertical continued to generate reliable returns amid strong demand and stable margins. The vertical achieved Core EBITDA of US\$80 million. Potential acquisitions in rising economies in Asia and Africa offer new opportunities, such as our acquisition of Ngoc Nghia Industry - Service - Trading JSC (NN) in Vietnam.

The PIA business performed strongly due to robust demand in both PET and coatings end-markets. This was supported by our ability to continue supply in a disrupted industry environment. Specialty polymers also grew as productivity rose at our Auriga plant, and as our reliability and ability to control costs improved. Our NDC business consistently achieves sound returns due to strong demand and margins. We are on track to start PNDA production in 2022, and further growth may come from new adjacent opportunities.

All of this has been done as we build cost competitiveness, realize the full potential of assets, and embed sustainability.



Sanjay Ahuja
Interim Executive President Combined PET



Message from the Executive President Integrated Oxides and Derivatives



Mr. Alastair Mark Port

Dear Stakeholders,

Integrated Oxides and Derivatives (IOD) delivered a strong recovery and growth in key markets and continues its transition to a specialty surfactants portfolio serving end-markets with stable high margins, supported by a strengthened intermediates business.

Our performance in 2021 exceeded budget with Core EBITDA of US\$377 million, an increase of 228% year-on-year, despite the extended refit of our Lake Charles cracker and the impact of Storm Uri in Texas. We anticipate strong earnings to continue in 2022, driven by a greater integration platform, higher margins, rising volumes, supported by our Project Olympus efficiencies program.

We also look forward to welcoming our new Oxiteno colleagues to our IOD family in 2022. The acquisition will create further value and complement our recent U.S., China and India research and development facilities in terms of geographical reach, sustainable products, and innovation capabilities. This enlarged IOD platform will be supported through new SAP S4/HANA and 14001 management systems, guided by our sustainability roadmap.

IOD's downstream portfolio delivered Core EBITDA of US\$319 million, up 85% year-on-year. Downstream products have remained resilient throughout the pandemic amid healthy margins and volumes across the portfolio. PO volumes have been especially strong due to high demand for polyurethane in furniture and automotive markets. The outlook for downstream markets remains positive for home and personal care products (HPC), crop science, fuels and lubricants, building and construction, and coatings. This translates to robust demand for surfactants, ethanolamines and LAB products and formulations. We expect to keep all our assets at high utilization rates throughout 2022.

Our upstream portfolio, comprising of our ethylene production units, achieved Core EBITDA of US\$99 million (an increase of 228%), driven by continued tightness in ethylene markets and strong crack margins. We expect significant upside in 2022 from Lake Charles, which resumed operations in late 2021.

The intermediate portfolio, comprising EG and MTBE, reported a negative Core EBITDA of US\$41 million, a 54% improvement from negative Core EBITDA of US\$87 million a year earlier. MEG performance rose significantly as it benefited from higher volumes after a catalyst change at a site in the second quarter of 2021. MEG has seen enhanced margins, supported by the increase in crude oil prices and the consequent benefits of shale gas economics which brought back our cost advantage in North America. Our full integrated margins with our Lakes Charles production facility will provide significant upside in future. We anticipate further improvement in MEG margins in 2022, driven by tightness in the market and reduced production in China due to its dual control policy.

MTBE volumes and prices increased in 2021, with improved mobility and demand for transportation fuels. However, margins were offset by unseasonably high prices for raw materials such as butane and methanol. We expect mobility to continue rising through 2022, along with butane prices normalizing as higher oil process spur the expansion of rigs in the U.S. We see strong potential for further increases in MTBE margins.



Alastair Mark Port,
Executive President Integrated Oxides and Derivatives



Message from Executive President Fibers



Mr. Christopher
Anthony Kenneally

Dear Stakeholders,

The Fibers segment recovered strongly in 2021, achieving Core EBITDA of US\$268 million (an increase of 37% year-on-year) as production volumes rose 11% from a year earlier. This improved performance demonstrates our segment's resiliency, underscored by our diversity and our management's agility across our three Fibers verticals: Mobility, Lifestyle and Hygiene. We also delivered efficiency gains through Project Olympus, with a run rate of US\$131 million.

We are collaborating with our customers on innovative products that touch billions of lives everyday, including in the areas of material performance and safety in Mobility; material fashion with functionality in Lifestyle; and material wellbeing and comfort in Hygiene.

Lifestyle

The Lifestyle vertical reported Core EBITDA of US\$131 million, a rise of 132% as global demand for polyester fibers drove robust volumes and margins in emerging markets including India and Brazil. This was partially offset by high freight prices on exports from IVL's production centers in Thailand and Indonesia. We expect further demand growth in 2022 as Asia emerges from the pandemic. China's dual control policy is expected to add further tightness in the fibers market that should result in wider margins along the polyester value chain, while increased capacity and product enhancement in India will boost profitability.

Mobility

Our Mobility vertical achieved Core EBITDA of \$56 million (up 208%) amid heightened demand in the tires replacement market. However, a shortage of semi-conductors impacted car production and dampened orders for Mobility's automotive safety applications such as airbag yarns. We expect demand to recover as chip supply disruptions begin to ease.

Hygiene

The Hygiene vertical posted Core EBITDA of US\$82 million, down 33%. Demand normalized from pandemic-related highs through the year, even as medical applications remained robust in the Americas. Increased prices for raw materials, such as polypropylene, impacted the result. However, we expect this will reverse in 2022, and Project Gemini, our expansion program in the U.S., will add further upside. We continue to build our presence in high-growth markets, including relocating an existing production line to India in 2022.

Fibers is a diverse business that includes many categories that touch consumers' daily lives with products in the Mobility, Lifestyle and Hygiene verticals. This diversity brings enormous potential, as well as resilience, to IVL's integrated portfolio across the polyester chain as demand returns to pre-pandemic levels.



Christopher Anthony Kenneally
Executive President Fibers



Board of Directors



Mr. Sri Prakash Lohia

Chairman of the Board

Director Type: Non - Executive Director

Age: 69



Appointment Date of Directorship

- 19 September 2009

Education

- Bachelor of Commerce, Delhi University, India

Training Program

- Role of the Director and the Board Program 2017, Institute of Directors (IOD), London, UK

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations:

13 companies (as of 31 December 2021)

- President Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (5 companies)
- Chairman, President Commissioner, Commissioner and Director of Indorama Corporation Pte. Ltd. and its subsidiaries (7 companies)
- Commissioner, PT. Irama Unggul

% of shareholding in IVL

As of 31 December 2021

- None

Mr. Alope Lohia

Vice Chairman of the Board, Chairman of the Sustainability and Risk Management Committee and Group Chief Executive Officer

Director Type: Executive Director

Age: 63



Appointment Date of Directorship

- 19 September 2009

Education

- Honorary PhD Degree of Business Administration, Rajamangala University of Technology Thanyaburi, Thailand
- Bachelor of Commerce, Delhi University, India

Training Program

- Director Accreditation Program (DAP) Class No. 65/2007, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: 16 companies (as of 31 December 2021)

- Chairman, Director and Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (6 companies)
- Director, Canopus International Limited
- Chairman, Indorama Resources Limited
- Director, Viraa Limited
- Director, Capialla Limited
- Director, Aurelius Holdings Limited
- Director, Vega Aviation Limited
- Director, Brookgrange Investments Limited
- Director, Auctus Holdings Limited
- Chairman, Beacon Chemicals Ltd.
- Director, VOX Investment Limited

% of shareholding in IVL As of 31 December 2021

- 1,000,010 shares or 0.018%

Mrs. Suchitra Lohia

Chairperson of the Corporate Social Responsibility Committee
and Deputy Group CEO

Director Type: Executive Director

Age: 57



Appointment Date of Directorship

- 19 September 2009

Education

- Bachelor of Commerce, Delhi University, India
- Owner President Management Program, Harvard Business School

Training Program

- Capital Market Academy Leadership Program, Capital Market Academy (Class 14), Thailand
- Director Accreditation Program (DAP) Class No. 108/2014, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: 19 companies (as of 31 December 2021)

- Director and Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (6 companies)
- Director, Canopus International Limited
- Director, Indorama Resources Limited
- Chairperson, IVL Foundation
- Director, Volta Circle Limited
- Director, Viraa Limited
- Director, Capialla Limited
- Director, QAMA Investments Limited
- Director, Aurelius Holdings Limited
- Director, Vega Aviation Limited
- Director, Brookgrange Investments Limited
- Director, Auctus Holdings Limited
- Director, Beacon Chemicals Ltd.
- Director, VOX Investment Limited

% of shareholding in IVL

As of 31 December 2021

- None (held by her spouse 1,000,010 shares or 0.018%)

Mr. Amit Lohia

Director

Director Type: Non-Executive Director

Age: 47



Appointment Date of Directorship

- 19 September 2009

Education

- Bachelor of Economics and Finance, Wharton School of Business, USA

Training Program

- None

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: 11 companies (as of 31 December 2021)

- Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (5 companies)
- Vice Chairman, Vice President Commissioner and Director of Indorama Corporation Pte. Ltd. and its subsidiaries (6 companies)

% of shareholding in IVL As of 31 December 2021

- None

Mr. Yashovardhan Lohia

Member of the Sustainability and Risk Management Committee and Chief Sustainability Officer

Director Type: Executive Director

Age: 34



Appointment Date of Directorship

- 24 April 2019

Education

- Bachelor of Engineering Business Management, Warwick Business School, Warwickshire, UK

Training Program

- Director Certification Program (DCP), Class 214/2015, Thai Institute of Directors Association (IOD), Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2015 - Present Thai Plaspac Public Company Limited
Chairman of the Board

Other Companies and/or Organizations: 9 companies (as of 31 December 2021)

- Chairman, Commissioner, and Director of other subsidiaries of Indorama Ventures Public Company Limited (6 companies)
- Director, Indorama Resources Limited
- Director, Beacon Chemicals Limited
- Director, Aurus Speciality Company Limited

% of shareholding in IVL

As of 31 December 2021

- None

Mr. Dilip Kumar Agarwal

Member of the Sustainability and Risk Management Committee, Chief Executive Officer of Combined PET, IOD and Fibers Business and Chief of Financial Officer (Ad Interim)

Director Type: Executive Director

Age: 64



Appointment Date of Directorship

- 27 April 2010

Education

- Bachelor of Science, University of Udaipur, India
- Chartered Accountant, The Institute of Chartered Accountants of India, India
- Cost Accountant, Institute of Cost & Management Accountants of India, India
- Company Secretary Program, The Institute of Company Secretaries of India (ICSI), India

Training Program

- Director Accreditation Program (DAP), Class No. 65/2007, Thai Institute of Directors, Thailand
- Director Certification Program, (DCP), Class No.182/2013, Thai Institute of Directors, Thailand
- E-learning CFO Orientation, Accounting and Financial Preparation (CFO's Orientation Course), Thailand Securities Institute (TSI), The Stock Exchange of Thailand (SET) in 2021

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: 54 companies (as of 31 December 2021)

- Chairman, Vice Chairman, Vice President, Director, Managing Director and Manager of other subsidiaries of Indorama Ventures Public Company Limited

% of shareholding in IVL As of 31 December 2021

- 555,959 shares or 0.010%

Mr. Udey Paul Singh Gill

Member of the Sustainability and Risk Management Committee and Chief Strategy Officer

Director Type: Executive Director

Age: 68



Appointment Date of Directorship

- 27 April 2011

Education

- MBA (Marketing Management) College of Basic Sciences, PAU, Ludhiana, Punjab, India
- International Trade, Fulbright Scholar, University of California, USA
- Bsc. (Hons.), PAU, Ludhiana, Punjab, India

Training Program

- Director Accreditation Program (DAP) Class No. 95/2012, Thai Institute of Directors, Thailand
- Director Certification Program (DCP) Class No. 182/2013, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: (as of 31 December 2021)

- 2017 – Present Director
Glanzstoff Industries S.A.
- 2020 – Present Board Member,
International Textile Manufacturers
Federation (ITMF)
- 2020 – Present Advisory Board
“BIOTEXFUTURE” Research Project of RWTH
Aachen University and Adidas AG

% of shareholding in IVL

As of 31 December 2021

- 183,336 shares or 0.003%

Mr. Rathian Srimongkol

Vice Chairman of the Board, Chairman of the Audit Committee and Member of the Sustainability and Risk Management Committee

Director Type: Lead Independent Director

Age: 62



Appointment Date of Directorship

- 19 September 2009

Education

- Master of Business Administration, Thammasat University, Thailand
- M.P.A. (General Administration), Suan Sunandha Rajabhat University, Thailand
- Medical Degree, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
- Bachelor's degree in Medical Science, Mahidol University, Thailand

Training Program

- Certificate in Politics and Governance in Democratic Systems for Executives Course (Class 9), King Prajadhipok's Institute, Thailand
- Diploma, National Defence College, The Joint State Private Sectors Course Class No. 51/21, National Defence College of Thailand, Thailand
- Capital Market Academy Leadership Program (Class 11), Capital Market Academy, Thailand
- Thai Institute of Directors (IOD), Thailand
 - Director Certification Program (DCP), Class No. 8/2001
 - Role of the Chairman Program, Class No. 19/2008
 - Financial Statements Demystified for Director Program, Class No.1/2009

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2021 – Present XSpring Capital Public Company Limited
Chairman/Chairman of Investment Committee/Chairman of Nominating and Compensation Committee and Authorized Director
- 2012 - Present Krungthai Card Public Company Limited
Director, President and Chief Executive Officer

Other Companies and/or Organizations: (as of 31 December 2021)

- 2021 – Present Director
Krungthai Advisory Company Limited
- 2021 – Present Chairman and Authorized Director
XSpring Digital Company Limited
- 2021 – Present Chairman and Authorized Director
XSpring AMC Asset Management Company Limited
- 2021 – Present Executive Chairman and Authorized Director
Krungthai Zmico Securities Company Limited
- 2021 – Present Chairman and Authorized Director
XSpring Asset Management Company Limited

% of shareholding in IVL

As of 31 December 2021

- 991,400 shares or 0.018%

Mr. William Ellwood Heinecke

Member of the Nomination, Compensation and Corporate Governance Committee

Director Type: Independent Director

Age: 72



Appointment Date of Directorship

- 19 September 2009

Education

- Honorary Doctoral Degree of Business Administration in Management, Yonok University, Lampang, Thailand
- International School of Bangkok, Thailand

Training Program

- Director Certification Program (DCP), Class No.64/2005, Thai Institute of Directors (IOD), Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- Present Minor International Public Company Limited and its subsidiaries
Chairman of the Board and Chairman of Executive Management Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- Present Chairman
Minor Corporation Public Company Limited and its subsidiaries
- Present Chairman
The Minor Food Group Public Company Limited and its subsidiaries
- Present Director
Rajadamri Hotel Public Company Limited and its subsidiaries
- Present Director
Pacific Cross International Ltd.
- Present Director
NH Hotel Group S.A.

% of shareholding in IVL As of 31 December 2021

- 4,534,932 shares or 0.081%

Dr. Siri Ganjarerndee

Member of the Audit Committee and
Member of the Nomination, Compensation and
Corporate Governance Committee

Director Type: Independent Director

Age: 74



Appointment Date of Directorship

- 27 April 2010

Education

- Ph.D. Monetary Economics and Econometrics & Operations Research, Monash University, Australia
- M.Ec. Economic Statistics and Monetary Economics, University of Sydney, Australia
- B.E. (2nd Honour, 1st divisions.) Economic Statistics, University of Sydney, Australia

Training Program

- Thai Institute of Directors (IOD), Thailand
 - Director Accreditation Program (DAP) Class No. 4/2003
 - Director Certification Program (DCP) Class No. 60/2005
 - Audit Committee Program Class No. 6/2005
- Capital Market Academy Leadership Program Class No.5/2007, The Stock Exchange of Thailand
- Advanced Management Program (AMP) Class No. 113/1995 Harvard Business School

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 1999 – Present Bangkok Life Assurance PCL
Chairman of Board of Director, Chairman of Nomination and Remuneration Committee, Chairman of Investment Committee and Chairman of Performance Assessment and Evaluation Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- 2019 – Present Chairman of Board of Directors and Chairman of Executive Committee
Navavej International PCL
- 2018 – Present Chairman - Risk Management Committee, Member of University Council and Chairman of Finance Committee
Sukhothai Thammathirat Open University
- 2016 – Present Chairman of the Board of Director and Chairman of Compensation and Nomination Committee
TRIS Rating Ltd.
- 2003 – Present Director, Member of Audit Committee, Member of the Remuneration Committee and Chairman of Nomination Committee
TRIS Corporation Co., Ltd.
- 2003 – Present Member of Sub-Committee for Evaluation of State Enterprises
State Enterprise Policy Office, Ministry of Finance

% of shareholding in IVL As of 31 December 2021

- None

Mr. Kanit Si

Member of the Nomination, Compensation and Corporate Governance Committee and Member of the Sustainability and Risk Management Committee

Director Type: Independent Director

Age: 71



Appointment Date of Directorship

- 27 April 2010

Education

- MBA, Finance & Quantitative Method University of New Orleans, USA.
- Bachelor of Engineering (Honor & Gold Medal) Chulalongkorn University, Thailand

Training Program

- Director Certification Program (DCP) 2003, Thai Institute of Directors (IOD), Thailand
- Global Leadership Development Program (GLDP) 2004, International Centre for Leadership in Finance (ICLIF), Thailand
- Capital Market Academy Leadership Program, (Class 9) 2009, Capital Market Academy, Thailand
- Ethical Leadership Program (class 16) 2019, Thai Institute of Directors (IOD), Thailand
- Advanced Audit Committee Program (AAP) (Class 36) 2020, Thai Institution of Directors (IOD), Thailand.

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 1998 - Present Bangkok Bank Public Company Limited
Senior Executive Vice President

Other Companies and/or Organizations: (as of 31 December 2021)

- 2000 – Present Director
HMC Polymers Company Limited
- 2000 – Present Director
Indorama Polyester Industries Public Company Limited
- 1999 – Present Director
TPT Petrochemicals Public Company Limited

% of shareholding in IVL

As of 31 December 2021

- 300,000 shares or 0.005%

Mr. Russell Leighton Kekuewa

Chairman of the Nomination, Compensation and Corporate Governance Committee and Member of the Sustainability and Risk Management Committee

Director Type: Independent Director

Age: 67



Appointment Date of Directorship

- 20 October 2014

Education

- Master of Science Industrial Engineering and Engineering Management, Stanford University, Stanford, California, USA.
- Bachelor of Science Civil Engineering, University of the Pacific Stockton, California, USA.

Training Program

- Thai Institute of Directors (“IOD”), Thailand
 - Director Certification Program (DCP) Class No. 196/2014
 - Strategic Board Master Class (SBM) Class No.3/2018

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2016 – Present Bangkok Post Public Company Limited
Independent Director and Chairman of the Risk Management Committee
- 2015 – Present Boutique Corporation Public Company Limited
Independent Director, Member of Audit and Corporate Governance Committee and Chairman of Nomination and Remuneration Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- None

% of shareholding in IVL

As of 31 December 2021

- 750,000 shares or 0.013%

Mr. Sanjay Ahuja

Interim Executive President Combined PET

Director Type: Executive Director

Age: 53



Appointment Date of Directorship

- 13 November 2015

Education

- Chartered Accountant The Institute of Chartered Accountants of India, India

Training Program

- Director Certification Program (DCP) Class No.175/2013, Thai Institute of Directors, Thailand
- E-learning CFO Refresh, Training for Continuing Accounting Knowledge (CFO's Refresh Course), Thailand Securities Institute (TSI), The Stock Exchange of Thailand (SET) in 2020
- E-learning CFO Orientation, Accounting and Financial Preparation (CFO's Orientation Course), Thailand Securities Institute (TSI), The Stock Exchange of Thailand (SET) in 2020
- Fundamentals Course - Young accountants should know, an accounting training institute, CPD Tutor in 2021

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- None

Other Companies and/or Organizations: 11 companie (as of 31 December 2021)

- Director of other subsidiaries of Indorama Ventures Public Company Limited

% of shareholding in IVL As of 31 December 2021

- 132,697 shares or 0.002%

Mr. Tevin Vongvanich

Member of the Audit Committee and
Member of the Sustainability and
Risk Management Committee

Director Type: Independent Director

Age: 63



Appointment Date of Directorship

- 24 April 2019

Education

- Honorary Doctorate Degree, Faculty of Engineering, Chulalongkorn University, Thailand
- Honorary Doctorate of Philosophy, Civil Engineering Department, Faculty of Industry and Technology, Rajamangala University of Technology Isan, Thailand
- M.Sc. (Petroleum Engineering), University of Houston, USA
- M.Sc. (Chemical Engineering), Rice University, USA
- B.Eng. (Chemical Engineering) (1st Hons.), Chulalongkorn University, Thailand

Training Program

- Thai Institute of Directors Association (IOD), Thailand
 - Director Certification Program (DCP), Class 21/2002
 - Financial Statements for Directors (FSD), Class 6/2009
 - Role of the Compensation Committee (RCC), Class 13/2011
 - Anti-Corruption for Executive Program (ACEP), Class 15/2015
 - Ethical Leadership Program (ELP), Class 7/2017
- Senior Executive Program (SEP), Class 7, Sasir Graduate Institute of Business Administration, Chulalongkorn University
- Program for Global Leadership (PGL), Class 3, Harvard Business School, USA
- Democratic Politics and Governance for High-Level Administrators Program, Class 10, King Prajadhipok's Institute
- Capital Market Academy Leadership Programs, Class 6, The Stock Exchange of Thailand
- Diploma, National Defence College, the Joint State-Private Sector Course, Class 22, National Defence College.
- Program for Senior Executives on Justice Administrative, Class 16, Office of the Judiciary
- Corporate Governance for Directors and Senior Executives of State Enterprises and Public Organizations, Class 7, Public Director Institute (PDI), King Prajadhipok's Institute
- Certificate in Top Executive Program in Energy Literacy for a Sustainable Future (Class 3/2013), Thailand Energy Academy (TEA)

Working Experience (during the recent 5 years) Other Listed Companies in SET

- 2019 – Present Berli Jucker Public Company Limited
Vice Chairman of the Board and Chairman of the Nomination and Remuneration Committee
- 2019 – Present Amata Corporation Public Company Limited
Independent Director, Chairman of Risk Management Committee and Member of the Corporate Governance Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- 2020 – Present Committee
BCG Economy Committee
- 2020 – Present Committee
Chulalongkorn University Council
- 2020 – Present Committee and Chairman of State Enterprise
Development Planning
State Enterprise Policy Office
- 2019 – Present Chairman of the Board
InnoSpace (Thailand) Co., Ltd.
- 2019 – Present Council Committee and Chairman of Sub-
Committee on National Competitiveness
National Economic and Social Development Council
- 2019 – Present Chairman of Sub-Committee on Capital
Market Competitiveness Development
The Securities and Exchange Commission
- 2019 – Present Chairman of Committee for Fund Management in
National Competitiveness (PMU-C)
The National Higher Education, Science, Research
and Innovation Policy Council
- 2014 – Present Director to the Board of Trustees,
Thailand Management Association (TMA)
- 2011 – Present Fellow Member
Thai Institute of Directors Association (IOD)

% of shareholding in IVL As of 31 December 2021

- 100,000 shares or 0.002%

Mrs. Kaisri Nuengsigkapan

Member of the Nomination, Compensation and Corporate Governance Committee

Director Type: Independent Director

Age: 60



Appointment Date of Directorship

- 30 June 2020

Education

- Master of Business Administration, Thammasat University
- Bachelor of Accounting, Thammasat University

Training Program

- Capital Market Academy Leadership Program (Class 3), Capital, Market Academy, Thailand
- Thai Institute of Directors (IOD), Thailand
 - Directors Certification Program (DCP) Class 0/2000
 - The Role of The Chairman Program (RCP) Class 30/2013
 - The Role of The Compensation Committee Program (RCC) Class 16/2013
 - Advanced Audit Committee Program (AACP) Class 36/2020
 - Directors Leadership Certification Program (DLCP) Class 0/2020 (Dry Run)

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2019 – Present SCG Packaging Public Company Limited
Independent Director and Chairman of Audit Committee
- 2016 – Present Mc Group Public Company Limited
Chairman of the Board of Directors/Member of Executive Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- 2021 – Present Appeal Committee
The Stock Exchange of Thailand
- 2018 – Present Chairman of the Board of Directors
Buono (Thailand) Public Company Limited
- 2018 – Present Director
Thai Institute of Directors
- 2016 – Present Director
TOP T 2015 Company Limited
- 2016 – Present Director and Treasurer
Rakkaew Foundation
- 2016 – Present Member of Corporate Governance Committee
Bank of Thailand

% of shareholding in IVL

As of 31 December 2021

- None

Dr. Harald Link

Director

Director Type: Independent Director

Age: 67



Appointment Date of Directorship

- 1 November 2021

Education

- Honorary Doctor of Business Administration (Management), Rajamangala University of Technology Srivijaya, Thailand
- Master of Business Administration, University of St. Gallen Switzerland, Switzerland

Training Program

- Director Accreditation Program, 2017 (DAP), Thai Institute of Directors (IOD), Thailand
- Diploma, National Defence College, The Joint State-Private Sector Course, 2004 (NDC Class 17)
- Certificate, Top Executives Program, The Capital Market Academy (CMA Class 11)
- Certificate, Energy Literacy for Sustainable Future, Thailand Energy Academy (TEA Class 2)
- Certificate, Executive Management with Business Development and Investment, Institute of Business and Industrial Development (IBID Class 1)
- In-House Program on “Business Transformation to be driven into Digital Economy”, Thai Institute of Directors (IOD), 2020

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 1993 - Present B.Grimm Power Public Company Limited
Director, President, Chairman of Management Committee and Chairman of Risk Management Committee
- 2010 - Present True Corporation Public Company Limited
Independent Director and Chairman of the Compensation and Nominating Committee

Other Companies and/or Organizations: (as of 31 December 2021)

- Director of other subsidiaries/associated companies of B. Grimm Power Public Company Limited (102 companies)
 - Subsidiaries/associated companies of B. Grimm Power Public Company Limited (58 companies)
 - Other Companies (44 companies)

% of shareholding in IVL

As of 31 December 2021

- 2,000,000 shares or 0.036%

COMMITTED TO A SUSTAINABLE FUTURE

Indorama Ventures PCL (IVL), a global sustainable chemical company,
is honored to be listed on

the Dow Jones Sustainability World Index

for the third consecutive year and

the Dow Jones Sustainability Emerging Markets Index

for the fifth consecutive year.

IVL thanks our staff, customers, and partners

for continuously contributing to our sustainability commitment.



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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Integrated Oxides and Derivatives | Combined PET | Fibers



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 the 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 25,000 employees worldwide and consolidated revenue of USD 14.6 billion in 2021.

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.

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. Since then, each successive growth and addition has been committed to the polyester value chain. We have grown significantly to become a major global polyester value chain producer.

In 2003, we expanded our PET production footprint internationally into North America, with the acquisition of the StarPet facility, and in Europe in 2006, with the commencement of our Orion Global PET facility.

We also acquired a PTA facility located in the Netherlands in 2008. That same year, we acquired two PTA facilities in Thailand – TPT Petrochemicals and Indorama Petrochem.

In the first half of 2011, IVL had completed major acquisitions of PET plants in China, Indonesia, Mexico, Poland and the US, which resulted in the Company becoming the world's largest PET producer and the largest player in Europe.

In the same year, IVL entered the high value added PET (PET HVA) business with the acquisition of Auriga Polymers in South Carolina, which owns the Crystal Clear Oxygen Barrier Resin technology, OxyClear® and Polyshield®.

We expanded our PET production footprint in Africa with the opening of a new solid state polymerization (SSP) plant in Nigeria, which started commercial operations in 2012. In 2015, we entered the Middle East following the acquisition of a PET plant in Turkey.

In 2016, we entered the paraxylene (PX) business in the US with the acquisition of BP Amoco Chemical Company (BP), which manufactures PTA, PX and NDC, in addition to acquiring the assets of Cepsa Química S.A., a subsidiary of Spain-based Compañía Española de Petróleos S.A.U. (CEPSA) in Guadarranque-San Roque, Cadiz, which produces PET, PTA and PIA.

In 2018, we acquired a PET plant in Egypt, the largest in the Middle East and Africa, and a PET plant in Brazil to further extend our market position, and expanded our global footprint in key markets with high growth potential. This strategic position allows us to deliver products to key customers in Brazil and elsewhere in South America in a cost-effective and efficient manner.

In 2019, we completed the acquisition of Invista's assets in Germany resulting in our possessing the IP for Polyshield® and Oxyclear® resins, together with Invista's barrier technology in all markets globally.

IVL entered the packaging business in 1996, which we grew by engaging in the downstream production of PET preforms, bottles and closures. Our first expansion globally was with the acquisition of Beverage Plastics in Northern Ireland (UK) in 2012. Then in 2013, we entered Africa with the acquisition of Aurus in Nigeria, in the belief that the country has considerable potential for further growth. In 2018, IVL acquired Medco Plast for Packing and Packaging Systems S.A.E. in Egypt. This acquisition provided us with exposure to the East African PET packaging market, complementing our existing footprint in West Africa, where we have a presence in Nigeria and Ghana. In 2019, we acquired Bevpak, a facility in Nigeria.

We entered the recycling space in November 2011 with the acquisition of the polyester fibers recycling businesses of Wellman International in Europe, which is comprised of three production facilities in the Republic of Ireland, the Netherlands, and France. At the beginning of 2014, we extended the know-how we obtained from the Wellman International purchase and commenced production of our recycled PET and fiber facility in Nakhon Pathom, Thailand. We expect to further leverage Wellman's bottle to flake technology on a global scale. We also integrated three production sites in the US and Mexico with recycled PET, and our objective is to continue increasing the use of recycled PET in our operations. In 2018, we acquired Sorepla, a European non-integrated plastics recycler based in France which enhanced our recycling portfolio with food grade recycled PET.

In 2019, we acquired PET recycling facilities in the US states of Alabama and California.

In 2020, we entered into a joint venture agreement with Coca-Cola Beverages Philippines, Inc. (Coca-Cola Philippines) to form a 70:30 joint venture corporation in the Philippines, by the name of PET Value Philippines Corporation (PVPC). The JV will set up and operate a greenfield integrated recycling plant using state of the art technologies and industry-leading best practices to employ the safest and most advanced recycling process for plastic bottles made from PET.

In addition, we also acquired PET recycling facilities in Brazil and Poland. AG Resinas is a PET recycling facility in Juiz de Fora, Brazil while IMP Polowat has facilities located in Bielsko-Biala and Leczyca, Poland. Both process post-consumer PET into recycled PET flakes and pellets. Brazil's facility is in close proximity to a large supply of recovered PET bottles, bringing benefits through a logistics advantage while Poland's facility is an attractive recycling platform in Eastern Europe, which will open up new opportunities to meet the increasing demand for recycled PET and more sustainable packaging solutions.

In 2021, we completed the acquisition CarbonLite's Texas PET Recycling Facility - one of the largest producers of food-grade recycled pellets (recycled polyethylene terephthalate or recycled PET) in the US.

Entry into the Integrated Oxides and Derivatives Business (IOD)

We entered this segment by acquiring an 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 August 2021, we announced our 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 transaction is expected to close in 2022.

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.

The Group's Fibers business segment comprises the manufacture and sale of a variety of polyester and other types of fibers and yarns (which are also used in the Group's HVA products, particularly in personal care, automotive and industrial applications). Polyester is one of the most widely used synthetic fibers in the world and is a versatile material with wide-ranging textile and industrial applications. The development of our polyester business has been achieved through the acquisition of distressed assets and organic growth through debottlenecking and asset optimization. We entered the polyester business in 1997 with the acquisition of Indo Poly, a polyester fiber plant in Thailand. In 2008, we acquired Tuntex Thailand, the country's largest polyester fiber producer. Both of our polyester facilities were acquired as distressed assets at a discount to their replacement cost and have been successfully turned around. In 2009, Indo Poly transferred all of its assets to, and all of its liabilities were assumed by Tuntex Thailand, which was subsequently renamed Indorama Polyester Industries. Further expansions subsequently took place at this site.

In the first half of 2011, we expanded our polyester production footprint internationally. We entered the US market with the acquisition of Invista US.

In 2019, we completed the acquisition of UTT, an airbag yarns business in Germany and Mexico, which provided an opportunity for IVL to further expand its portfolio in the airbag sector and become an integrated manufacturer of airbag yarns and textiles globally.

We also completed the acquisition of Sinterama, a polyester staple fiber producer in Brazil providing an opportunity to establish a global footprint in the Fibers business in South America's largest economy and its specialty fibers business in four countries: Italy, Brazil, China



and Bulgaria. Sinterama was vertically integrated from chips to yarns offering a vast range of colored polyester yarns for automotive, furnishing, apparel and technical applications.

In 2020, IVL entered into a joint venture agreement with Toyobo Co., Ltd. (Toyobo), Japan to form a 50:50 joint venture limited liability company in Thailand. A new joint venture company by the name of Toyobo Indorama Advanced Fibers Company Limited (TIAF) plans to build a new plant on the IPI factory site in Rayong for the production of PA66 airbag yarns.

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.

Changes and Important Developments

We have completed a comprehensive assessment of our portfolio, identified areas for synergies and natural alignment, and report our timeline and segments as follows:

Year	Event	Location	New Segments
1994	<ul style="list-style-type: none"> Incorporation of Indorama Holdings Ltd. 	Thailand	Fibers
1995	<ul style="list-style-type: none"> Established Indorama Polymers PCL's PET resin plant in Lopburi, Thailand. 	Thailand	Combined PET
1996	<ul style="list-style-type: none"> Established Petform (Thailand) Ltd., a joint venture with Sermsuk PCL. 	Thailand	Combined PET
2002	<ul style="list-style-type: none"> Completed various expansion projects leading to increased capacity in Thailand. 	Thailand	Combined PET & Fibers
2003	<ul style="list-style-type: none"> Incorporation of Beacon Global Limited (subsequently renamed Indorama Ventures PCL in 2008). First major international expansion with the acquisition of the StarPet PET plant in Asheboro, North Carolina. 	Thailand	Combined PET
		US	Combined PET
2006	<ul style="list-style-type: none"> Acquired a 94.57% interest in Indorama Holdings Ltd. from an entity controlled by Mr. Aloke Lohia. Second major international expansion in Europe with the launch of the Orion Global PET plant in Klaipeda, Lithuania. 	Thailand	Fibers
		Lithuania	Combined PET
2007	<ul style="list-style-type: none"> Completed various expansion projects leading to increased capacity. 	US/Thailand	Combined PET & Fibers
March 2008	<ul style="list-style-type: none"> Acquired the operations of two PET production facilities located in the Netherlands and the United Kingdom, previously owned and operated by subsidiaries of Eastman Chemical Company. Acquired the operations of a PTA production facility located in the Netherlands, previously owned and operated by a subsidiary of Eastman Chemical Company. 	the Netherlands/UK	Combined PET
		the Netherlands	Combined PET
June 2008	<ul style="list-style-type: none"> Indorama Holdings Ltd. sold its shares representing 89.71% of Indo-Rama Chemicals (Thailand) Ltd., to an entity controlled by Mr. Aloke Lohia and his immediate family. 	Thailand	Chemicals
August - October 2008	<ul style="list-style-type: none"> Acquired a 50.56% equity interest in TPT Petrochemicals PCL from various parties. 	Thailand	Combined PET
September 2008	<ul style="list-style-type: none"> Acquired a 65.81% equity interest in Tuntex (Thailand) pursuant to Tuntex (Thailand)'s bankruptcy rehabilitation plan. Acquired an additional 44.38% of the outstanding shares of Indo Poly (Thailand) Ltd. from Indorama International Finance PCL. As a result of the acquisition, the Company increased its direct and indirect shareholdings of Indo Poly (Thailand) Ltd. to 98.85%. 	Thailand	Fibers
		Thailand	Fibers
September - October 2008	<ul style="list-style-type: none"> Acquired a 100% equity interest in Indorama Petrochem Ltd. from various parties. 	Thailand	Combined PET
October 2008	<ul style="list-style-type: none"> Acquired an additional 3.94% of the outstanding shares of Indorama Polymers PCL from DEG, thereby increasing the direct and indirect holdings of Indorama Polymers PCL to 69.29%. 	Thailand	Combined PET
December 2008	<ul style="list-style-type: none"> Acquired an additional 31.20% of the outstanding shares of Tuntex (Thailand) PCL (re-named Indorama Polyester Industries PCL). 	Thailand	Fibers

Year	Event	Location	New Segments
July 2009	<ul style="list-style-type: none"> Indo Poly (Thailand) Ltd. transferred all of its assets and businesses to Indorama Polyester Industries PCL. (In August 2009, Indo Poly [Thailand] Ltd. commenced action to liquidate itself, a process which was completed in August 2011.) 	Thailand	Fibers
	<ul style="list-style-type: none"> Acquired an additional 2.08% of the outstanding shares of TPT Petrochemicals PCL from International Finance PCL, thereby increasing the direct and indirect holdings of TPT Petrochemicals PCL to 52.64%. 	Thailand	Combined PET
August 2009	<ul style="list-style-type: none"> Jointly made a tender offer to purchase all outstanding shares of Indorama Polyester Industries PCL that were not already owned. After the tender offer, the Company and Indorama Holdings Ltd. increased our shareholdings of Indorama Polyester Industries PCL to 99.55% and delisted Indorama Polyester Industries PCL from the SET effective November 9, 2009. 	Thailand	Fibers
October 2009	<ul style="list-style-type: none"> Startup of the AlphaPet PET plant in Decatur, Alabama. 	US	Combined PET
November 2009	<ul style="list-style-type: none"> TPT Utilities Co., Ltd. transferred all of its assets to TPT Petrochemicals PCL and subsequently completed the liquidation on October 29, 2011. 	Thailand	Others
December 2009	<ul style="list-style-type: none"> Acquired an additional 1.96% of the outstanding shares of TPT Petrochemicals PCL from International Finance PCL, thereby increasing the direct and indirect holdings of TPT Petrochemicals PCL to 54.60%. 	Thailand	Combined PET
	<ul style="list-style-type: none"> Announced a tender offer on December 24, 2009 to purchase up to 100% of the shares of Indorama Polymers Public Company Limited (IRP) with an intention to delist the shares of IRP from the Stock Exchange of Thailand. A total of 424,480,300 shares of IRP were purchased through an exchange offer whereby IRP shareholders received IVL shares. 	Thailand	Combined PET
February 2010	<ul style="list-style-type: none"> IVL shares were listed and began trading on the Stock Exchange of Thailand after completion of an initial public offering of 400 million new shares at THB 10.20 and completion of an exchange offer to minority shareholders of Indorama Polymers Public Company Limited (IRP). IRP shares were simultaneously delisted from the SET on the first day of trading of IVL. 	Thailand	Corporate
July 2010	<ul style="list-style-type: none"> Acquired a 50% equity stake in a joint venture company, UAB Ottana Polimeri Europe, for the purpose of acquiring an integrated PTA and PET plant in Ottana, Italy from Equipolymers. The joint venture partner, PCH Holdings, is in the power and utilities business and holds the remaining 50% stake. 	Italy	Combined PET
August 2010	<ul style="list-style-type: none"> Announced the establishment of a greenfield project for PET polymers in Port Harcourt, Nigeria with an installed capacity of 75,000 tpa. 	Nigeria	Combined PET
	<ul style="list-style-type: none"> Announced capacity expansion by 190,000 tpa for PET through a new production line at an existing site in Rotterdam, the Netherlands. 	the Netherlands	Combined PET
October 2010	<ul style="list-style-type: none"> Acquired additional shares in TPT Petrochemicals PCL from Tuntex Taiwan and other shareholders to increase the Company's equity stake from 54.60% to 99.96%. 	Thailand	Combined PET

Year	Event	Location	New Segments
November 2010	<ul style="list-style-type: none"> Announced the approval of an acquisition to make PET resins and polyester polymers for fibers and yarns in Kaiping City, Guangdong Province, from Guangdong Shinda UHMWPE Company Limited. The total installed capacity of the plant is 406,000 tpa. The acquisition was completed in January 2011. 	China	Combined PET
	<ul style="list-style-type: none"> Announced the signing of a definitive agreement with INVISTA S.a.r.l. to acquire their PET resins and polyester staple business located in Spartanburg, South Carolina (US) and Queretaro, Mexico. The total installed capacity at the Spartanburg site is 470,000 tpa and 535,000 tpa at the Queretaro site. The acquisitions were completed in March 2011. 	US/Mexico	Combined PET
	<ul style="list-style-type: none"> The Board of Directors Meeting No. 8/2010 on 10 November, 2010 approved the issuance of 481,585,672 free Transferable Subscription Rights (TSRs) to the company's existing shareholders and with an allocation ratio of nine existing shares to one new TSR. The conversion ratio of one TSR entitled the TSR holder to purchase one newly issued share of the Company. The exercise price of the TSR into ordinary shares was determined prior to the extraordinary general meeting of shareholders to approve the rights issue. 	Thailand	Corporate
December 2010	<ul style="list-style-type: none"> Announced the signing of a definitive agreement with SK Chemicals and SK Syntec to acquire their polyester filament yarns and PET resins business in Indonesia and PET resins business in Poland. The total installed capacity in Indonesia is 196,000 tpa and 140,000 tpa in Poland. The acquisitions were completed in March 2011. 	Indonesia/ Poland	Fibers & Combined PET
	<ul style="list-style-type: none"> Board of Directors Meeting No. 9/2010 on 16 December, 2010 approved an exercise price of THB 36 per share to subscribe to newly issued shares by each TSR holder. 	Thailand	Corporate
	<ul style="list-style-type: none"> The Extraordinary General Meeting of Shareholders No. 1/2011 approved the resolution of a rights issue and allocated an issue of TSRs at a ratio of 9 existing shares to 1 TSR to existing shareholders. 	Thailand	Corporate
March 2011	<ul style="list-style-type: none"> A total of 479,986,198 new IVL shares were listed and began trading on the Stock Exchange of Thailand after completion of the TSR subscription at an exercise price of THB 36 per share. 	Thailand	Corporate
	<ul style="list-style-type: none"> Announced PET capacity expansion by 300,000 tpa at an existing site in Purwakarta, Indonesia. 	Indonesia	Combined PET
April 2011	<ul style="list-style-type: none"> Announced a brownfield expansion of PET polymers production with a capacity of 220,000 tpa at an existing site in Poland. 	Poland	Combined PET
May 2011	<ul style="list-style-type: none"> Announced a brownfield expansion of PTA production at the Rotterdam plant, with a new production line with an annual PTA capacity of 250,000 tpa. 	the Netherlands	Combined PET
June 2011	<ul style="list-style-type: none"> The Board approved the acquisition of a 50% stake in PT Polyprima Karyesreska (PT Polyprima), a PTA producer located in Cilegon, West Java, Indonesia which has an installed capacity of 465,000 tpa. 	Indonesia	Combined PET
July 2011	<ul style="list-style-type: none"> Acquired a 75% equity stake in a joint venture company, Trevira Holdings GmbH, for the purpose of acquiring a polyester fiber plant in Germany and Poland with a capacity of 120,000 tpa. 	Germany/Poland	Fibers

Year	Event	Location	New Segments
August 2011	<ul style="list-style-type: none"> The Board approved investments in a new recycling plant in Thailand (now complete) and a high technology business in polyester fibers and yarns in Thailand and Indonesia. 	Thailand/ Indonesia	Fibers
November 2011	<ul style="list-style-type: none"> The Board approved the acquisition of a 100% equity stake in the recycling business of Wellman International in Europe from WIT Beteiligungs GmbH and Wellman International Trading which is a subsidiary of Aurelius AG. This business consists of three plants, a polyester plant in Mullagh, Ireland with an installed capacity of over 80,000 tons, and recycling plants in Spijk, the Netherlands with an installed capacity of over 45,000 tons, and Verdun, France with an installed capacity of 28,000 tons. 	Ireland/France/the Netherlands	Combined PET
January 2012	<ul style="list-style-type: none"> The Board approved the acquisition of 100% of FiberVisions Holdings LLC, a global manufacturer of specialty mono and bi-component fibers based in Duluth, Georgia (US), with a total global capacity of 221,000 tpa of specialties, with a 117,000 tpa capacity in the United States, 90,000 tpa capacity in Europe and 14,000 tpa capacity in China. 	US	Fibers
February 2012	<ul style="list-style-type: none"> Acquired a 51% stake in a packaging business. Beacon Trading (UK) Limited acquired a 51% stake in Beverage Plastics (Holdings) Limited (BPL) in Northern Ireland. 	UK	Combined PET
March 2012	<ul style="list-style-type: none"> Acquired 100% of the PET resin assets of PT Polypet Karyapersada. The PET facility is located in Cilegon, Indonesia with a production capacity of 100,800 tpa. 	Indonesia	Combined PET
April 2012	<ul style="list-style-type: none"> Acquired a 100% partnership interest in Old World Industries I, Ltd. and Old World Transportation, Ltd. in the US. Old World has a crude EO capacity of 435,000 tpa (which is equivalent to 550,000 tpa of equivalent MEG capacity), involving the production and sale of ethylene oxide (EO) and derivative products from ethylene oxide: purified ethylene oxide (PEO), mono-ethylene glycol (MEG), diethylene glycol (DEG), and triethylene glycol (TEG). 	US	Integrated Oxides & Derivatives
July 2012	<ul style="list-style-type: none"> A solid-state polymerization (SSP) plant in Nigeria began operations at a capacity of 84,000 tpa. This is IVL's first PET investment in Africa and establishes a foothold in the estimated 450,000 ton PET market for the African continent which currently has only one other PET producer. 	Nigeria	Combined PET
August 2012	<ul style="list-style-type: none"> Completed the acquisition of the PET resin assets through wholly-owned subsidiary, PT Indorama Polypet Indonesia, with a capacity of 100,800 tpa in Cilegon. 	Indonesia	Combined PET
November 2012	<ul style="list-style-type: none"> Announced the greenfield expansion of PET production in North America with the establishment of a new plant with a capacity of 540,000 tpa. 	US	Combined PET
February 2013	<ul style="list-style-type: none"> Acquired a 100% stake in a packaging company, which produces PET preforms, in Nigeria. The transaction was completed in April 2013. 	Nigeria	Combined PET
May 2013	<ul style="list-style-type: none"> The Board approved the formation of a 50:50 joint venture company with a global producer of non-woven fibers to set up a 14,500 tpa bicomponent fiber plant at IPI in Rayong, Thailand. The plant started operations in Q2 2015. The Board also approved expanding the current bicomponent fiber capacity by 10,800 tons at the Covington, Georgia (US) unit of wholly-owned FiberVisions Manufacturing Company. 	Thailand US	Fibers Fibers

Year	Event	Location	New Segments
October 2013	<ul style="list-style-type: none"> Established Indorama Ventures Packaging (Philippines) Corporation to start a new packaging business in the Philippines. Established new subsidiaries: <ul style="list-style-type: none"> - Indorama Ventures USA Holdings LP - Indorama Ventures AlphaPet Holdings, Inc. - Indorama Ventures Europe B.V. <p>The three holding companies were formed as part of a restructuring exercise.</p>	<p>the Philippines</p> <p>US</p> <p>US</p> <p>the Netherlands</p>	<p>Combined PET</p> <p>Holding Company</p>
November 2013	<ul style="list-style-type: none"> Announced the mothballing of our PET plant at Indorama Polymers Workington Ltd. in the UK, as part of our business improvement plan and restructuring strategy of our European businesses. 	UK	Combined PET
December 2013	<p>Established a new subsidiary:</p> <ul style="list-style-type: none"> Indorama Ventures Global Services Limited. Signed a joint venture agreement for aromatics production in Abu Dhabi to develop the Tacaamol Aromatics Plant on Madeenat ChemaWEyaat Al Gharbia's (MCAG) site in the Western Region of Abu Dhabi. The plant is expected to have an annual capacity of about 1.4 million tons of paraxylene and 0.5 million tons of benzene. 	<p>Thailand</p> <p>UAE</p>	<p>Corporate</p> <p>Combined PET</p>
February 2014	<ul style="list-style-type: none"> Acquired PHP Fibers GmbH and its subsidiaries (PHP), where IVL holds 80% of PHP while the remaining 20% is held by Toyobo Co., Ltd., a leading Japanese manufacturer of high function products, including automotive products, among others. The acquisition was completed on April 30, 2014. Established a new indirect subsidiary company in the Republic of Ghana. 	<p>Germany /US/ China</p> <p>Ghana</p>	<p>Fibers</p> <p>Combined PET</p>
March 2014	<ul style="list-style-type: none"> Established a new joint venture company in Thailand, 50% owned by Indorama Holdings Ltd., a subsidiary company of IVL, and 50% owned by JNC Fibers Corporation of Japan. 	Thailand	Fibers
June 2014	<ul style="list-style-type: none"> Acquired 100% of Artenius TurkPET A.S. (Artenius) in Adana, Turkey. Artenius is a PET producer in Turkey with a capacity of 130,000 tpa. The acquisition was completed on June 2, 2014. 	Turkey	Combined PET
October 2014	<ul style="list-style-type: none"> Reorganized the Company's subsidiaries in the Netherlands and the US to improve operational and fiscal efficiencies, business workflows and to pool common resources, and some of the businesses of the subsidiaries. 	the Netherlands/US	Corporate
November 2014	<p>Established two new joint venture companies:</p> <ul style="list-style-type: none"> Indorama Ventures EcoMex, S. de R. L de C.V. Indorama Ventures EcoMex Services, S. de R. L de C.V. 	Mexico	Combined PET
December 2014	<ul style="list-style-type: none"> Announced the signing of a share purchase agreement to acquire a 100% equity stake in Performance Fibers Asia (PF Asia). PF Asia is a leading producer of premium polyester tire cord fabric in Asia. The plants are located in Kaiping, Guangdong Province, China, with an annual capacity of 41,000 tons of polyester tire cord fabric and 48,000 tons of polyester tire cord yarn. (Completed in April 1, 2015) 	China	Fibers
January 2015	<ul style="list-style-type: none"> Established a new indirect subsidiary company in Myanmar, Indorama Ventures Packaging (Myanmar) Limited, with a 100% investment by a wholly-owned subsidiary, IVL Singapore Pte. Ltd. 	Myanmar	Combined PET

Year	Event	Location	New Segments
March 2015	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in Polyplex Resins San. ve Tic. A.S, Turkey. Polyplex Turkey owns a newly set-up greenfield PET plant with a planned capacity of 252,000 tpa located in Corlu, close to Istanbul. 	Turkey	Combined PET
	<ul style="list-style-type: none"> Acquired a 100% stake in the PTA business of CEPESA Chimie Montréal s.e.c in Montreal, Canada. CPESA is the largest and the only PTA manufacturing facility in Canada with a capacity of 600,000 tpa and is one of three merchant PTA producers in North America. 	Canada	Combined PET
May 2015	<ul style="list-style-type: none"> Completed the acquisition of a 94.91% stake in a PET business in Thailand, Bangkok Polyester PCL (BPC). BPC is a producer of PET polymers in Rayong, Thailand, with a capacity of 105,000 tpa. Further shares were also acquired from the minority shareholders, thereby taking the Company's total shareholding in BPC to 98.97%. 	Thailand	Combined PET
June 2015	<ul style="list-style-type: none"> Completed the acquisition of CEPESA Chimie Montréal s.e.c in Montreal, Canada, including all of the closing formalities. The plant was taken charge of effective June 1, 2015. 	Canada	Combined PET
September 2015	<p>Established three new subsidiaries:</p> <ul style="list-style-type: none"> Indorama Ventures Dutch Investments B.V. Indorama Ventures Investments USA LLC Indorama Ventures Olefins LLC 	the Netherlands/ US US	Holding Company Holding Company Integrated Oxides & Derivatives
November 2015	<ul style="list-style-type: none"> Acquired 100% of CEPESA's business in Spain. CEPESA Spain is Europe's largest producer of PIA (isophthalic acid) and is the second largest producer in the world, with a capacity of 220,000 tons of PIA, 175,000 tons of PET, and 325,000 tons of PTA. 	Spain	Combined PET
	<ul style="list-style-type: none"> Established a new indirect subsidiary company in the US: Indorama Ventures Olefins Holding LLC 	US	Holding Company
December 2015	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in the polyethylene terephthalate (PET) business of MICRO POLYPET Private Limited (MicroPet) and its two subsidiaries, Sanchit Polymers Private Ltd., and Eternity Infrabuild Private Ltd. in India, effective December 23, 2015. MicroPet, located in Panipat district in the northern Indian state of Haryana, has a PET capacity of 216,000 tpa and has virtual integration with a major refinery for its PTA and MEG feedstocks. 	India	Combined PET
January 2016	<ul style="list-style-type: none"> Acquired a 100% stake in BP Amoco Chemical Company (BP)'s chemical complex in Decatur, Alabama (US). BP's integrated facility is located adjacent to IVL's PET manufacturing subsidiary, AlphaPet, Inc. and has a combined capacity of approximately 1.8 million tons of which PX capacity is 720,000 tons, PTA capacity is 1,020,000 tons, and NDC (naphthalene dicarboxylate). (The acquisition was completed and effective March 31, 2016.) 	US	Combined PET
February 2016	<ul style="list-style-type: none"> Formed an equal joint venture in India with Dhunseri Petrochem Limited. IVL divested its 50% equity stake in its indirect, fully-owned PET manufacturing company - Micro Polypet Private Limited, India to Dhunseri Petrochem Limited. IVL also acquired a 50% equity stake in a new carved-out entity from Dhunseri Petrochem Limited. The new entity owns the 480,000 ton PET manufacturing facility of Dhunseri Petrochem Limited located in the port city of Haldia in the eastern Indian state of West Bengal. 	India	Combined PET

Year	Event	Location	New Segments
March 2016	<ul style="list-style-type: none"> Established a new indirect subsidiary in India, Indorama Ventures Packaging (India) Private Limited. 	India	Combined PET
April 2016	<ul style="list-style-type: none"> Completed the acquisition of 100% of Compañía Española de Petróleos S.A.U. (CEPSA Spain)'s PIA, PET and PTA business in Guadarranque-San Roque, Cadiz, Spain. The operation was effective April 7, 2016. The company was renamed Indorama Ventures Química S.L.U. 	Spain	Combined PET
July 2016	<p>Established a subsidiary company and a joint venture company in China.</p> <p>The new indirect subsidiary:</p> <ul style="list-style-type: none"> Performance Fibers (Kaiping) No. 3 Company Limited <p>The new joint venture company:</p> <ul style="list-style-type: none"> ES FiberVisions Shanghai Co., Ltd. 	China	Fibers
August 2016	<ul style="list-style-type: none"> Polyamide High Performance, Inc., an 80% indirect subsidiary of IVL in the US changed its name to "PHP Fibers Inc." PHP Overseas Investments GmbH, a non-operating entity merged with PHP Fibers GmbH, an operating Fibers business entity. The newly merged entity is known as "PHP Fibers GmbH." 	US	Fibers
		Germany	Fibers
September 2016	<ul style="list-style-type: none"> Completed the formation of an equal joint venture in India with Dhunseri, effective September 12, 2016. The joint venture company in India was also renamed, from Dhunseri Petglobal Limited to "IVL Dhunseri Petrochem Industries Limited." Established a new indirect subsidiary company in China: Performance Fibers (Kaiping) Trading Company Limited 	India	Combined PET
		China	Fibers
December 2016	<ul style="list-style-type: none"> Established a new indirect subsidiary company in Mexico, Indorama Ventures Mexico Assets, S. de R.L. de C.V., which is 99.99% held by Grupo Indorama Ventures, S. de R.L. de C.V., a wholly-owned indirect subsidiary company of IVL. 	Mexico	Service Company
May 2017	<ul style="list-style-type: none"> Acquired a 100% stake of Glanzstoff Group (Glanzstoff), a tire cord business in Luxembourg, Italy, the Czech Republic and China. The Glanzstoff acquisition provides a strategic fit to the automotive segment in the HVA portfolio with a capacity of 36,300 tpa. Acquired the remaining 25% stake in Trevira Holdings GmbH (Trevira) in Germany. With this acquisition, IVL holds 100% of Trevira, a leading brand of specialty polyester fibers globally. 	Luxembourg/Italy/ Czech Republic/ China	Fibers
		Germany	Fibers
September 2017	<ul style="list-style-type: none"> Acquired a 100% stake of DuraFiber Technologies México Operations, S. A. DE C. V. (DuraFiber), a tire cord business with a capacity of 22,400 tpa. 	Mexico	Fibers
October 2017	<ul style="list-style-type: none"> Acquired a 100% stake of DuraFiber Longlaville, France, a tire cord business with a capacity of 35,000 tpa. 	France	Fibers
November 2017	<ul style="list-style-type: none"> Acquired the PTA assets of Artlant PTA S.A. and the adjacent utility assets of Artelia Ambiente, S.A. in Portugal. 	Portugal	Combined PET
March 2018	<ul style="list-style-type: none"> Acquired a 100% stake of M&G Polimeros Brazil S.A. in Ipojuca, Brazil, the largest PET facility in the country with a capacity of 550,000 tpa. (Completed all closing formalities and took charge of the operations effective May 24, 2018.) 	Brazil	Fibers

Year	Event	Location	New Segments
March 2018	<ul style="list-style-type: none"> Formed an equal joint venture company, namely Corpus Christi Polymers LLC (CC Polymers), with Alpek and Far Eastern, and entered into an asset purchase agreement with M&G USA Corp. and its affiliated debtors (M&G) to acquire the integrated PTA-PET plant currently under construction in Corpus Christi, Texas. The plant is expected to be the largest single line vertically integrated PTA-PET production facility in the world and the largest PTA plant in the Americas with a capacity of 1.1 million tpa of PET and 1.3 million tpa of PTA. 	US	Combined PET
May 2018	<ul style="list-style-type: none"> Acquired a 65.72% equity stake in Avgol Industries 1953 Ltd., with a capacity of 203,000 tpa. Avgol Industries is a global manufacturer of non-woven fabric and hygiene products with six sites located in Israel, the US, Russia, China and India. (Completed all closing formalities of the transaction on July 25, 2018.) 	Israel/US/Russia/ China/India	Fibers
June 2018	<ul style="list-style-type: none"> Formed a joint venture in Egypt with Dhunseri Petrochem Limited, namely Egyptian Indian Polyester Company S.A.E. (EIPET) with a capacity of 540,000 tpa. EIPET is one of the largest PET producers in the Middle East and Africa. 	Egypt	Combined PET
	<ul style="list-style-type: none"> Formed a 50:50 joint venture limited liability company in the US with Huvis Global Corporation named Huvis Indorama Advanced Materials, LLC. (HIAM) with a capacity of 60,000 tpa. HIAM is a manufacturer of low melting fiber (LMF) used as a binder fiber in core-sheath constructions to produce HVA applications for automotive and industrial composites. 	US	Fibers
	<ul style="list-style-type: none"> Acquired a 100% equity stake of KORDÁRNA Plus a.s. (Kordarna) in the Czech Republic with a capacity of 57,000 tpa. Kordarna is the largest producer of tire cord fabrics in Europe, having one production site in the Czech Republic and another in the Slovak Republic. (Completed all closing formalities and took charge of the operations effective October 30, 2018). 	the Czech Republic/ the Slovak Republic	Fibers
July 2018	<ul style="list-style-type: none"> Acquired 74% of the share capital of Medco Plast for Packing and Packaging Systems S.A.E., Egypt (MEDCO) with a production capacity of 70,000 tpa of PET preforms. (Completed all closing formalities of the transaction on November 13, 2018). 	Egypt	Combined PET
	<ul style="list-style-type: none"> Acquired 100% of the share capital of Sorepla Technologie S.A. and its subsidiary, namely Société de Recyclage de Matières Plastiques (Sorepla Industrie) S.A., in France (Sorepla). Sorepla is one of the largest plastics recyclers in Europe with a capacity of 52,000 tpa. 	France	Combined PET
September 2018	<ul style="list-style-type: none"> Agreed to form a 50:50 joint venture limited liability company in the US with Loop Innovations, LLC named Indorama Loop Technologies, LLC. (ILT). 	US	Fibers

Year	Event	Location	New Segments
October 2018	<ul style="list-style-type: none"> Acquired a 100% equity stake in Schoeller Group in Europe, with operating plants in Austria, the Czech Republic and Germany. Schoeller Group is a leading European producer of pure wool and wool blend worsted yarns, with one dyeing facility in Austria and one spinning facility in the Czech Republic, with a total production capacity of 3,600 tpa. (Completed all closing formalities of the transaction on November 23, 2018.) <p>Established a new indirect subsidiary company and merged indirect subsidiaries in Mexico.</p> <p>Set up a new indirect subsidiary:</p> <ul style="list-style-type: none"> Glanzstoff Industries Mexico, S. de R.L. de C.V. <p>The merger of indirect subsidiaries:</p> <ul style="list-style-type: none"> Indorama Ventures Mexico Assets, S. de R.L. de C.V. (IVMA) 	Austria/the Czech Republic/Germany	Fibers
		Mexico	Fibers
		Mexico	Service Business
November 2018	Acquired a 100% equity stake in M&G Fibras Brasil S.A. in Brazil. The site produces polyester staple fiber, with a capacity of 75,000 tpa.	Brazil	Fibers
December 2018	<ul style="list-style-type: none"> Acquired a 100% equity stake in UTT Beteiligungsgesellschaft mbH (UTT), Germany, one of the leading suppliers of airbag fabrics and other highly specialized solutions in the field of technical textiles, with two manufacturing sites located in Germany and Mexico with capacity of approximately 12,000 tpa. 	Germany/Mexico	Fibers
	<ul style="list-style-type: none"> Acquired a 100% equity stake in the PET business of INVISTA Resins & Fibers GmbH, Germany (IRFG); and certain intellectual property rights of INVISTA Textiles (UK) Limited with regards to its barrier technology. PolyShield® PET and OxyClear® Barrier PET are well-known brands in oxygen barrier packaging. The IRFG plant is located in Gersthofen, Germany and manufactures high value-added PET with a combined capacity of 282,000 tpa. 	Germany	Combined PET
	<ul style="list-style-type: none"> Signed a definitive asset purchase agreement with Custom Polymers PET, LLC, to acquire their PET recycling facility in Alabama. The facility consists of two production lines: recycled PET flakes and food-grade recycled PET pellets, with a combined capacity of 31,000 tpa. 	US	Combined PET
	<ul style="list-style-type: none"> An integrated PTA-PET asset at the Corpus Christi joint venture received all regulatory clearances required from the United States Federal Trade Commission for the proposed acquisition on December 21, 2018. (Completed the acquisition on December 28, 2018.) 	US	Combined PET
	<ul style="list-style-type: none"> Commercial production start-up at Indorama Ventures Xylenes & PTA, LLC's PIA plant in Decatur, Alabama on December 23, 2018. This plant complements IVL's existing PIA plant at IVL Quimica in Spain. The two PIA plants have a combined name plate capacity of 440,000 tpa. 	US	Combined PET

Year	Event	Location	New Segments
January 2019	<ul style="list-style-type: none"> The Board approved the purchase by its indirect subsidiary Indorama Netherlands B.V. (INBV) of 83,000,000 newly issued shares in Indo Rama Synthetics (India) Limited (IRSL), equal to approximately 31.79% of IRSL's enlarged share capital, at the price of INR 36 per share, equal to the total investment amount of INR 2,988.00 or equivalent to approximately THB 1,442.31 million. IRSL is a listed company on the National Stock Exchange of India Limited (NSE) and the Bombay Stock Exchange Limited (BSE) and is the leading manufacturer of a wide range of polyester products in India. The share purchase formalities were completed on April 3, 2019. 	India	Fibers
	<ul style="list-style-type: none"> Completed the acquisition of a PET Recycling facility in Alabama from Custom Polymers PET, LLC. The acquisition was completed on January 15, 2019. 	US	Combined PET
February 2019	<ul style="list-style-type: none"> Acquired a 100% equity stake in the packaging business of Bevpak, one of the largest manufacturers of PET preforms in West Africa located in Ibadan, Nigeria, with a production capacity of 18,000 mts. per annum. The acquisition was completed on October 2, 2019. 	Nigeria	Combined PET
	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in M&G Fibras Brasil Ltda. located in Cabo de Santo Agostinho from M&G Fibras Holding S.A., M&G Fibras Participações Ltda., and M&G Fibras e Resinas Ltda. The acquisition was completed on February 22, 2019. 	Brazil	Fibers
March 2019	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in UTT Beteiligungsgesellschaft mbH (UTT), Germany. The acquisition was completed on February 28, 2019. 	Germany/Mexico	Fibers
	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in the PET business of INVISTA Resins & Fibers GmbH, Germany (IRFG); and certain intellectual property rights of INVISTA Textiles (UK) Limited with regards to its barrier technology. The acquisition was completed on March 4, 2019. 	Germany	Combined PET
July 2019	<ul style="list-style-type: none"> Acquired a 100% equity stake of Sinterama S.p.A. and its subsidiaries (Sinterama). The acquisition of Sinterama comprises five production sites in four countries: Italy, Brazil, China and Bulgaria, with a combined capacity of approximately 30,000 tpa. Sinterama is vertically integrated from chips to yarns and offers a vast range of colored polyester yarns for the automotive, furnishing, apparel and technical applications. The acquisition was completed on November 19, 2019. 	Italy/Brazil/China/ Bulgaria	Fibers
August 2019	<ul style="list-style-type: none"> The Board approved the acquisition of certain integrated oxides and derivatives businesses/assets from Huntsman Corporation, listed on the New York Stock Exchange and/or its wholly-owned subsidiary(ies) (whether directly or indirectly) located in Texas, US/ New South Wales, Australia and Ankleshwar, India which manufacture the following key products: ethylene oxide (EO), propylene oxide (PO), glycols, ethanolamines (EOA), surfactants, linear alkylbenzene (LAB) and methyl tertiary-butyl ether (MTBE), including certain R&D centers, patents and technologies. The acquisition was completed on January 3, 2020. 	US/Australia/India	Integrated Oxides & Derivatives

Year	Event	Location	New Segments
December 2019	<ul style="list-style-type: none"> Acquired a 100% equity stake in Green Fiber International Inc. (GFI), a US company with a plastics recycling facility in Fontana, California. The facility primarily produces recycled PET flakes with a combined capacity of 40,000 tpa. The transaction was completed on December 3, 2019. 	US	Combined PET
March 2020	<ul style="list-style-type: none"> Formed a 70:30 recycling joint venture with Coca-Cola Philippines, by the name of PETValue Philippines Corporation (PVPC). This JV will set up a greenfield integrated recycling plant located near Manila and operated using state of the art technologies and industry-leading best practices to employ the safest and most advanced recycling process for plastic bottles made from PET. 	the Philippines	Combined PET
June 2020	<ul style="list-style-type: none"> Acquired a 100% equity stake of AG Resinas Ltda. (AG Resinas), a limited liability company incorporated under the laws of Brazil, which was completed on June 8, 2020. AG Resinas is a PET recycling facility in Juiz de Fora and processes post-consumer PET into recycled PET flakes and pellets. 	Brazil	Combined PET
August 2020	<ul style="list-style-type: none"> Acquired a 100% equity stake of Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością (IMP Polowat), consisting of two production sites located in Bielsko-Biala and Leczyca, Poland. IMP Polowat processes post-consumer PET into recycled PET flakes and pellets. This facility is an attractive recycling platform for IVL in Eastern Europe and will open up new opportunities to meet the increasing demand for recycled PET and more sustainable packaging solutions. This transaction was completed on October 29, 2020. 	Poland	Combined PET
October 2020	<ul style="list-style-type: none"> Entered into a new joint venture agreement with Toyobo Co., Ltd. in Thailand by the name of Toyobo Indorama Advanced Fibers Company Limited (TIAF). The JV plans to build a new plant on the IPI factory site at Rayong for the production of PA66 airbag yarns with an annual production capacity of 11,000 mts. 	Thailand	Fibers
June 2021	<ul style="list-style-type: none"> Acquired a 100% equity stake in the recycled polyethylene terephthalate (recycled PET) assets of CarbonLite Holdings LLC and its subsidiaries in Texas. CarbonLite is a significant recycled PET producer in the US with long-standing relationships with major brands. The facility primarily produces 48,000 tpa of recycled PET pellets and 44,000 of flakes tpa. This transaction was completed on June 14, 2021. 	USA	Combined PET
December 2021	<ul style="list-style-type: none"> Acquired 26% share capital of Medco Plast (MEDCO) reaching a 100% shareholding (acquired 74% in July 2018). 	Egypt	Combined PET

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.





Nature of the Business

Revenue Structure

The details of the reportable segment of our sales revenue structure applicable from 2019 onwards according to our consolidated financial statements for the year ended December 31 are as follows:

Details	Year Ended December 31, 2019		Year Ended December 31, 2020		Year Ended December 31, 2021	
	Total (Bt million)	%	Total (Bt million)	%	Total (Bt million)	%
Revenue breakdown by segment						
Combined PET	264,989	75	212,272	64	293,470	63
Integrated Oxides and Derivatives	9,099	3	48,553	15	80,440	17
Fibers	97,890	28	84,358	25	117,105	25
Elimination	(19,287)	(5)	(13,669)	(4)	(22,907)	(5)
Consolidated revenue from sale of goods	352,692	100	331,513	100	468,108	100

Source: The Company's consolidated financial statements.

Business Overview

Indorama Ventures (SET: IVL) is a major global intermediate and downstream petrochemicals producer with 124 sites in 33 countries around the world (as of December 31, 2021) 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.

Additional factors that help us in providing a broader portfolio of products for our customers are innovation, high value-added products and recycling, which enhance earnings growth and the sustainability of the business. Ongoing investments in research and development provide customers with new products and services that improve our offerings and complete our positioning as a one-stop center for their global requirements.

Business Description

The term polyester can be broken into poly, meaning many, and ester, a basic organic chemical compound. The principal ingredients used in the manufacture of polyester are purified terephthalic acid, derived from paraxylene, a part of the aromatics chain leading backwards to crude oil, and monoethylene glycol, part of the olefins chain that also leads backward to crude oil or natural gas. The chemical process that produces the finished polyester is polymerization. IVL is one of the world's foremost-integrated producers in the polyester industry and the largest producer of PET.

We act as a bridge connecting the oil and gas industry with consumer goods producers. There is constant demand growth from downstream customers, as they are mostly consumption-oriented FMCG companies, and this demand grows at a higher rate than global GDP.

The industry norm is to have long-term volume contracts with customers, normally one to three years in certain geographies like the US and Europe. However, the pricing is adjusted monthly as per benchmark prices in the industry and according to an agreed mechanism. The system indicates IVL's ability to pass through price movements to end customers (not always contractually).

This mechanism implies that crude oil and its derivative raw materials used to produce PET and fibers have a low-impact on the business except in the event there is a sharp rise or fall in the price of such materials within a short period, entailing an adjustment in the cost of inventory to reflect market prices. This mark-to-market effect is termed "inventory gains" or "inventory losses."

However, there could be volatilities in the spread when there is an oversupply or tight supplies in the industry in the short-term.

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. Fundamental shifts in the portfolio, both in its existing shape and form, and, as it evolves over the medium-term, necessitate the need to review the way we analyze and report our segments.

To this extent, we have completed a comprehensive assessment of our portfolio, identified areas of synergies and natural alignment, and recalibrated our future capital deployment strategies. All of this is in line with our objectives of becoming a world-class, well-diversified, growth-oriented, sustainable global chemical company.

Going forward, each of our segments necessitates differentiated investment and growth strategies depending on the role they play in our existing portfolio. Each segment is either already delivering or is capable of delivering double-digit ROCE through its business cycles. These segments, described below, are also poised for healthy growth momentum and thereby support IVL's overall growth strategy.

IVL's polyester chain business consists of three key verticals – Combined PET, Integrated Oxides and Derivatives, and Fibers as follows:

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. Our PTA assets are strategically co-located with downstream facilities in many countries including Thailand, Indonesia, Spain, the United States and the Netherlands. As of December 31, 2021, we were a globally integrated PET producer with a total PTA capacity of around five million tons per annum.

PET Business Overview

Our PET business is part of our core polyester value chain business and comprised 36% of our production volumes in 2021. Beginning with one manufacturing plant, we have continued to expand and now have operations across five continents – North America, South America, Europe, Africa, and Asia, and our PET business includes the production and sale of PET resin. As of December 31, 2021, 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. Our decision to execute the recycling project was based on the growth of PET used in a number of industries, the opportunities available in recycling

PET and the increased attention being paid to developing a circular materials economy. 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. These two bottle recovery plants process discarded PET bottles to produce recycled PET flakes to serve our facility in Ireland. Recycled PET flakes are then converted into both food-grade and fiber-grade materials.

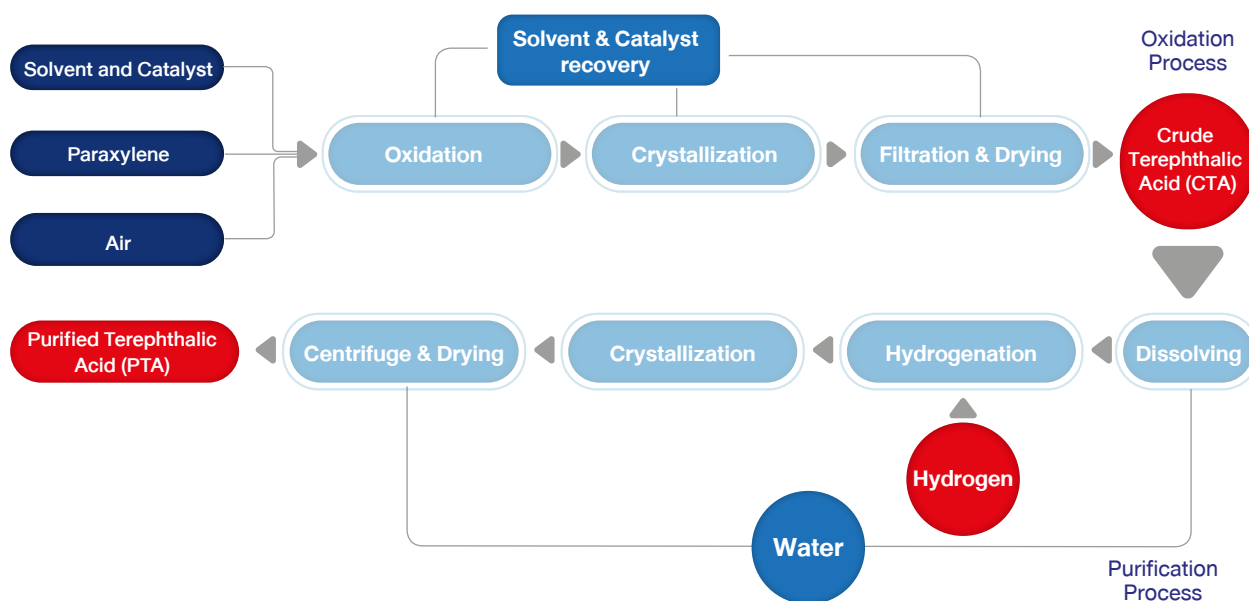
This PET recycling project complements IVL’s existing capabilities and serves as a way to gain access to new markets and product lines. Over the past several years, we continued to expand our PET recycling facilities in Thailand, the United States, Mexico, France, the Philippines, Brazil and Poland. These expansions have strengthened our business and reflect our desire to continue to build a more sustainable business while enhancing our ESG priorities.

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.

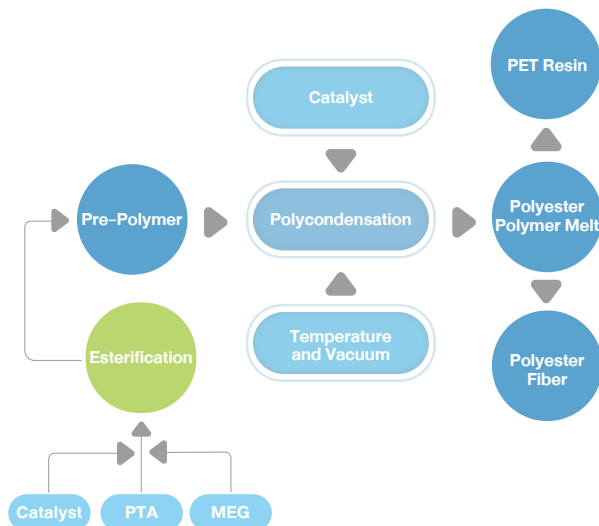
The chart below shows the PTA production process.



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 a 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 of these 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.

Most of our PX production is used for internal consumption to produce PTA at our plant in Alabama, in the United States. Our main customers for PTA are PET resin and polyester producers. 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 2019, 2020 and 2021, 70%, 68% and 67%, respectively, of our PTA was sold to the group.

We classify our PET customers into four main groups:

- Well-known brand name beverage companies with their own conversion plants to produce PET bottles;
- Well-known brand name beverage companies who subcontract the production of PET bottles to converters using PET resin purchased by such beverage companies;
- PET resin traders; and
- PET converters who use PET resin to manufacture preforms, bottles, sheets and other PET packaging to service the needs of end users.

We sell our PET resin primarily through direct sales to end-use customers. A small proportion of our sales take place through agents and traders.

Integrated PET Competition

IVL is the world's largest PET producer with a number one or number two position at over 90% of our manufacturing locations. We have a strong presence in the Americas and Europe, the Middle East, and Africa (EMEA), and a high level of feedstock integration (PTA to PET in key markets and PX integration in North America), all of which position us as the global leader in this 100% recyclable business.

We are an integrated PET producer, where we manufacture and use PX and PTA for our own captive consumption, partially or fully. 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. For 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; while Thai Shinkong Industry Corp. and PTTGC are the main competitors in the Thai market. Although PET technology is available through commercial licenses, we believe the capital investment required to achieve profitability through economies of scale may inhibit new entrants to the market.

Integrated PET Production Facilities

The following table sets out the key figures for our integrated PET production facilities as of December 31, 2021:

Production Facilities/Location	Nameplate Capacity ⁽¹⁾ ('000 tons per annum)
PTA	
Europe	1,765
Indonesia	517
Americas	1,620
Thailand	1,369
PET	
China	462
Europe	1,395
Indonesia	208
Middle East and Africa	639
Americas	1,716
India	694
Thailand	521
Recycling facilities	429
Total	11,333

⁽¹⁾ The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by the various plants from time-to-time. However, the capacity does not include a non-operating site: Ottana Polimeri S.R.L., IRP Workington, and Adana TurkPET.

1.2 Packaging

Packaging Business Overview

IVL has been involved in this business for the past two decades, first through a joint venture with Sermsuk 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 and Ghana. The current portfolio consists of plastic polymer resins primarily used for beverage and food packaging, and packaging of pharmaceutical and household products. Currently, our main products are preforms, bottles and closures at 16 production facilities in seven countries. An aggregate production quantity of 0.3 MMT makes this IVL's smallest business segment.

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

In the fourth quarter of 2019, we acquired Bevpak, a facility in Nigeria, to expand our global footprint.

The overall global packaging industry is valued at around USD 1 trillion and is growing at 5% per annum. This is a high growth segment, especially in olefins-based sustainable packaging materials, that serves the key needs of the FMCG and pharmaceutical industries.

This downstream business provides tremendous scope for reducing earnings volatility, margin enhancements through segment integration into the olefins chain, and increased diversification.

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, plus reliable customer service and delivery, we provide our customers with packaging solutions that help them build the value and volume of their brands. Similar to other segments, 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. Though many new vendors are regularly emerging in the market, it is difficult for them to compete with international vendors, including IVL, in terms of features, functions, and services. The key players in the global market are Alpla, Ball Corporation, Crown Holdings, and Amcor.



In response to the increasing needs of our customers, we have also invested in high speed bottling lines. In the near future, we plan to expand our product portfolio to pharmaceutical healthcare, personal care and home care packaging products with enhanced functionality and sustainable materials.

Packaging Production Facilities

The following table describes our packaging production facilities as of December 31, 2021:

Production Facilities/Location	Nameplate Capacity ('000 tons per annum)
Packaging - various sites	287

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®. We supplemented our presence in this segment in 2016 by acquiring the world's only naphthalene dicarboxylate (NDC) facility in Alabama, and a PIA facility in Cadiz, Spain.

In 2018, we grew this portfolio by expanding our PIA production in Spain and additionally converted a PTA line to PIA in Alabama, thereby becoming the world's second largest producer.

In 2019, we completed the acquisition of Invista's assets in Germany resulting in IVL possessing the intellectual property for Polyshield® and Oxyclear® resins, together with Invista's barrier technology in all markets globally.

Specialty Chemicals Products and Markets

Our main customers for specialty PET resins are manufacturers of medical applications, premium bottles, film and textile specialties. IVL continues to innovate our products in order to maximize differentiation, increase customer loyalty and enter new markets. We are moving closer to customers, offering both customer-tailored products and customer-specific service arrangements. Increasing

consumer preference for eco-friendly substitutes also benefits us as we are the leading global solutions provider of barrier resins, which come from renewable feedstocks and offer a minimal carbon footprint. For PIA, we manufacture and mostly sell to third party customers. In 2021, we sold 77% of PIA sales to outside customers who manufacture PET resins as well as paints and coatings.

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. NDC is used in markets such as films for optical displays, insulation for motors, flexible circuits for harnesses, industrial and pharmaceutical packaging containers, industrial fibers and tire cords, among others.

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, 2021:

Production Facilities/Location	Nameplate Capacity ⁽¹⁾ ('000 tons per annum)
Specialty PET - various sites	559
PIA - Spain	303
NDC - USA	27
Total	890

⁽¹⁾ The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by various plants.

2. Integrated Oxides and Derivatives (IOD)

IVL began in 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 through a subsidiary, Indorama Ventures Olefins LLC, and commenced commercial operations on January 31, 2020. In August 2020, the site was offline due to a lightning strike and production

recommenced in November 2021. The resumption of ethylene production, plus an upgrade of the facility, adds highly accretive long-term value to IVL's growth strategy. The gas cracker located at Lake Charles provides long-term ethylene supply integration, tied to advantaged shale gas feedstock on the US Gulf Coast.

In 2019, we invested USD 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.

The acquisition will provide unprecedented entry into global niche markets and industries serving the daily needs of consumers with a sustained growth rate of about 5%. These products are used in home and personal care consumer goods, such as detergents, cleansers, shampoos, furniture applications, automotive parts, fuels and lubricants. IVL has significant understanding of some of these end markets through its Fibers and PET businesses. New and exciting businesses include agrochemicals such as herbicides and unsaturated polyester resins for coatings, particularly in marine use.

In August 2021, we announced our 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. The transaction is expected to close in Q1 2022 and will be earnings accretive immediately.

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 also enhance IVL's ESG credentials.

Integrated Ethylene Oxide Business Overview Monoethylene Glycol (MEG)

The other major feedstock produced by Indorama Ventures is MEG, which is an organic compound. In its pure form, it is an odorless, colorless, syrupy, sweet-tasting liquid. MEG 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. Besides automobiles, MEG is a medium in liquid-cooled computers, chilled water air-conditioning systems and geothermal heating and cooling systems.

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. It is used as a plasticizer for vinyl as well as in air sanitizer products. When aerosolized, it acts as a disinfectant. It is an additive for hydraulic fluids and brake fluids, and is used as a base for "smoke machine" fluid in the entertainment industry.

Integrated Purified Ethylene Oxide Business Overview Purified Ethylene Oxide (PEO)

Purified ethylene oxide (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.

EO is one of the most important raw materials used in large-scale chemical production. Most EO is used for the synthesis of ethylene glycols, including diethylene glycol and triethylene glycol, which account for up to 75% of global consumption. Other important products include ethylene glycol ethers, ethanolamines and ethoxylates. Among glycols, ethylene glycol is used as antifreeze, in the production of polyester and PET, liquid coolants and solvents. Polyethylene glycols are used in perfumes, cosmetics, pharmaceuticals, lubricants, paint thinners and plasticizers. Ethylene glycol ethers are used in brake fluids, detergents, solvents, lacquers and paints. Other EO products include ethanolamines, which are used in the manufacture of soaps and detergents and for the purification of natural gas. Ethoxylates are reaction products of EO with higher alcohols, acids or amines. They are used in the manufacture of detergents, surfactants, emulsifiers and dispersants.

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

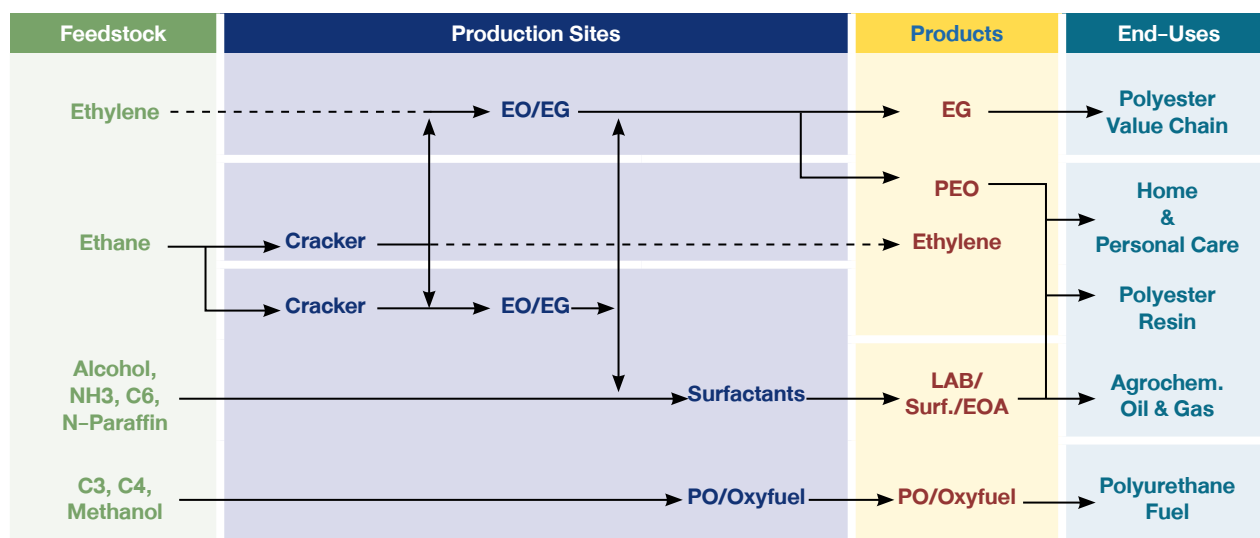
produce methyl tertiary-butyl ether (MTBE). It can also be sold directly as an octane-enhancing component for gasoline.

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.

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 North America, except for those of MTBE, which are generated from markets in Mexico and South America as an additive mixture for benzene/gasoline to increase the octane level. Purified ethylene oxide (PEO) is sold exclusively in the US merchant market.

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 addition, they are the components of various consumer products, such as beauty and personal care, cosmetics, sunscreen, herbicides, emulsifiers, and unsaturated polyester resins for coatings of materials, such as films and mirrors, among others.

In 2019, 2020 and 2021, 33%, 17% and 13%, respectively, of our EO/EG was sold to the group and 67%, 83% and 87%, respectively, of our EO/EG was sold to third-party customers.

Surfactants competition

Global consumption of surfactants was more than 18 MMt with an estimated market values of USD 41 billion. The Americas accounted for around 35% of the global market (based on market value).

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. All of the large surfactant producers using petrochemical raw materials mostly convert them to various ethoxylated derivatives and sell to large-volume customers, and a large percentage of these sales are in the household detergent industry. The end market of surfactants are home & personal care, crop solutions, performance products, resources, coatings, fuel & lubes and others.

Glycols Competition

The global market for MEG is highly competitive, involving a large number of producers located throughout the world. MEG is easy to transport and store. 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. The US is a largely mature consumer of MEG with demand growth driven by new PET capacity and an opportunistic export arbitrage platform based on the advantaged North American ethylene costs associated with shale gas.

Integrated Oxides and Derivatives Production Facilities

The following table sets out the key figures for our olefins production facilities as of December 31, 2021:

Production Facilities/Location	Nameplate Capacity ⁽¹⁾ (‘000 tons per annum)
Intermediates MEG	772
Intermediates MTBE	731
Downstream	1,161
Total	2,665

⁽¹⁾ Upstream capacity are almost captive.

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 multi-billion

dollar businesses individually. Growth in the fiber 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, specifically by the younger generation.

Polyester Fibers and Yarns 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 are produced by the melt spinning process. Raw materials are heated to a spinning mass, which is then pressed through spinnerets (similar to a sieve). Manufacturing techniques have developed to the point where they can produce round, oval or angular profiles, making them firm to the touch.

Polyester fibers are particularly resistant to light and weather, can withstand climatic effects, being as light or as fine as the weather demands, and have good moisture transport and dry quickly.

Polyester Fibers and Yarns 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.

The acquisition of Glanzstoff in 2017 enhanced the offering of fibers in the automotive space with rayon fiber. Glanzstoff also makes composite fibers for the automotive sector. This acquisition enhances our strategic position in automotive fibers as we can now offer a suite of products to the same or similar group of customers.

DuraFiber in France and Mexico expanded the footprint of Performance Fibers in China as they produce similar products in the automotive fibers space.

In 2019, we completed the acquisition of UTT, an airbag yarns business in Germany and Mexico providing us the opportunity to further expand our portfolio in the airbag sector and become an integrated manufacturer of airbag yarns and textiles globally.

Furthermore, we completed the acquisition of a Polyester Staple Fiber business in Brazil, which allows us to establish a global footprint in South America's largest economy. We also acquired the specialty fibers business of Sinterama in four countries: Italy, Brazil, China and Bulgaria. Sinterama is vertically integrated from chips to yarns,

and offers a vast range of colored polyester yarns for automotive, furnishing, apparel and technical applications.

In 2020, a new joint venture company by the name of Toyobo Indorama Advanced Fibers Company Limited (TIAF) was formed. Toyobo has a long relationship with IVL and this new JV further strengthens this partnership, especially in the fast-growing airbag market.

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.

Polymer granules are usually fed into an extruder that melts the polymer which is then pumped through a spinneret. The filaments are cooled in an air stream before being wound on a package or collected in cans. Because the fibers are difficult to dye, colored pigments are often added to the polymer stream before extrusion to produce colored fibers.

Propylene, when polymerized, creates a crystalline polypropylene polymer. The fibers made with these polymers can be used in furnishings, apparel and industrial products. Olefin 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. It keeps its strength in wet or dry conditions. Olefin fibers can be multi or monofilament and staple, tow, or film yarns. The cross-section is usually round, but can be modified for different end uses.

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, filtration products or in air-laid nonwoven structures such as absorbent cores, and wet wipes.

In terms of apparel, olefin fibers are used in sports and active wear, socks, thermal underwear and as lining fabrics, while in the home they are often used independently or in blends for indoor and outdoor carpets, carpet tiles and carpet backing. The fiber can also be used in upholstery, draperies, wall coverings, slipcovers, and floor coverings as well as heat-sealable paper for use in cases such as tea and coffee-bags.

In heavier applications, the fibers are often used for interior fabrics, sun visors, arm rests, door and side panels, and trunk and parcel shelves, while olefins can be created into carpets, ropes, and geotextiles that are in contact with the soil, filter fabrics, bagging and concrete reinforcements.

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.” A close relative is “co-spun fiber,” which is a group of filaments of different polymers, but with a single component per filament spun from the same spinneret. The term “conjugate fibers” is often used, particularly in Asia, as synonymous with bicomponent fibers. The main objective of producing bicomponent fibers is to exploit capabilities not existing in either polymer alone. Bicomponent fibers are commonly classified by their fiber cross-section structures as side-by-side, sheath-core, islands-in-the-sea and citrus fibers or segmented-pie cross-section types. Bicomponent fibers made of polyethylene sheath and polypropylene core are important fibers for the nonwoven fabric market.

Worsted Wool Yarns Business Overview

The term worsted is derived from Worsted, a village in the English county of Norfolk. 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.

While many forms of wool require that the fiber undergo a spinning process, the production of worsted wool follows a slightly different path. Rather than going directly into a spinning process, the wool is first combed in a carding process. This is where the fibers are separated and prepared for spinning to remove any short and brittle fibers from the wool, leaving only the longer strands of fiber to undergo the spinning process, producing a smooth yarn that possesses a higher durability. Owing to the strength of worsted wool, the fibers can be woven into a finer material that is more crease resistant than many other fabric choices making it an ideal choice for garments that need to hold their shape. Worsted wool has been a popular choice for men’s trousers, pleated skirts for women, and both men’s suits and sports jackets. 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.

PHP is a globally recognized manufacturer of branded high-tenacity polyamide nylon 6.6 yarns and is one of the leading suppliers in Europe for the automotive safety supply chain. PHP Group’s production facilities are located in the United States, Europe and China.

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. Larger fiber producers

usually focus on high-volume standard fibers for sale in domestic markets where the level of competition is high and predominantly based on price and, to a lesser degree, on consistency of product quality. The larger polyester producers of commodity polyester products continue to focus on increasing their production of non-commodity products. They comprise approximately half of our total output. China dominates polyester production and has many companies involved in this business, while there are a few companies in Korea, China, Turkey, and in western markets which compete with our specialized fibers and yarns.

Fibers Production Facilities

The following table describes our fibers and yarns production facilities as of December 31, 2021:

Production Facilities/Location	Nameplate Capacity ⁽¹⁾ ('000 tons per annum)
China	123
Europe	454
Indonesia	412
Middle East and Africa	19
Americas	340
India	547
Thailand	305
Total	2,200

⁽¹⁾ The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by various plants from time-to-time. However, the capacity does not include a non-operating site: IVL Karawang.



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.

2021 Executive Summary 2021 Performance Highlights

- Record Reported EBITDA of US\$ 1,982M, a YoY growth of 111%, and Core EBITDA of US\$ 1,743M a YoY growth of 55%
- Record Production volumes up 7% YoY to 14.72 MMT
- Reported Net Profit of THB 26,288M, Core Net Profit of THB 21,887M
- Reported EPS of THB 4.55 and Core EPS of THB 3.76
- Core ROCE up 6.3ppt YoY to 12%

IVL delivered record results in 2021, with full year Core EBITDA of US\$ 1,743M as well as record production volumes of 14.72 MMT. Growth was seen across all three business segments – Combined PET (CPET), Fibers, and Integrated Oxides and Derivatives (IOD) as well as across the three major regions of North America, Europe and Asia. This year has further highlighted the competitive advantage of IVL's regionally integrated model, serving demand inelastic end markets that provide safety and well-being for consumers. The resiliency of our platform today sets a strong foundation for further growth in, around, and beyond our current businesses.

The past year was once again consumed by the COVID pandemic, with multiple new waves hitting our economies as nations raced to vaccinate their populations. Despite this, demand was robust with government stimulus boosting consumption, causing the price of crude oil to rise by over %50 in 2021. At the same time, rising inflation became a growing concern, pushing fixed costs higher.

The year was marked by some unexpected and unforeseen crises starting with the Polar Vortex in the US Gulf Coast leading to supply disruptions of petrochemicals, the unprecedented escalation in container tariffs increasing costs and causing delays, and the energy surge, especially in Europe and China, further complicating supply chains and resulting in cost hikes that could impact profitability. IVL was able to leverage its leadership position to levy surcharges in Q4 to recuperate some of the increased energy costs. Management responded quickly, working closely with customers to fulfill their needs and growing our sales amidst these disruptions.

Despite the challenges, there were a number of tailwinds supporting IVL in 2021 which contributed to the record performance achieved. IVL's presence in premium western markets led to margin improvements coming from higher import parity pricing as a result of high freight rates. 4Q21 specifically benefited from the introduction of China's dual control policy that caused production disruptions, resulting in higher polyester value chain margins.

Our global footprint draws integrated premiums over Asian benchmarks and protection against geopolitical risks, while strong integration levels allow us to capture value from the entire chain. The unique model of the Integrated PET vertical has resulted in IVL spreads consistently outperforming industry reference spreads, with premium Western markets making up 71% of the EBITDA share of the total business in 2021. Supply chain disruptions and related uncertainties are driving trade preferences for locally sourced goods. IVL's balanced footprint across the Americas, Europe and Asia makes us a supplier of choice.

Looking ahead, 2022 is expected to be another strong year for IVL's businesses with continued robust demand across our product portfolio.

Combined PET

In the context of healthy demand but low inventories, the resetting of 2022 contracts for Integrated PET is expected to capture the full benefit of high freight rates and higher prices induced by higher import parity. The segment is expected to enjoy improved margins in 2022.

IOD

With oil supply/demand dynamics expected to keep the price of Brent high through the year, the IOD business is expected to benefit from shale gas economics, the anticipated corresponding improvement in MEG spreads, as well as significant integrated margin upside coming from the Lake Charles (IVOL) ethylene cracker. MTBE is recovering from improved demand and normalized butane prices. The downstream portfolio has experienced robust demand through the pandemic, and we look forward to the integration of Oxiteno bringing complementary products, green energy innovation and geographical diversification to this vertical.

Fibers

The year is likely to still be impacted by the semiconductor shortage, muting the full recovery of the Mobility fibers vertical to pre-pandemic levels, while demand for replacement tires is expected to remain strong. As Hygiene fibers finds its new normal from the peak of 2020, demand remains steadily above pre-pandemic levels. Lifestyle fibers will continue to benefit with demand improvements, especially from domestic consumption in emerging markets such as India and Brazil.

Capital Markets Day 2022

On February 10, 2022, IVL presented its long-term strategy laying out the roadmap to 2024 as well as a broader vision towards 2030. Bringing this all together and informing our path forward is IVL's new purpose statement: **Reimagining Chemistry Together to Create a Better World.**

As we look towards the mid-term, over next three years, IVL will continue to invest in Platform, People, and Systems, with meaningful growth opportunities across all three segments. We are well set to continue our growth trajectory to 15+% ROCE by 2024, with disciplined capital allocation resulting in approximately USD 5B in free cash flow, creating opportunities to meet the expectations of stakeholders.

Vision 2030 displays a significant progression in our continued journey towards net zero centered on three pillars: Decarbonization of Operations, Innovative & Sustainable Products, and being a Future Ready Organization. When it comes to decarbonization, IVL is investing in operational efficiency, carbon capture technology, renewable energy, and the phasing out of coal to address our Scope 1 and Scope 2 GHG emissions. IVL is also building the infrastructure needed to deliver a circular economy as well as 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 IVL's feedstock serves polyester-related products, which have the potential to be made from bio-renewable and circular sources. This is the glue that ties our three business segments together. As we progress towards becoming a more sustainable IVL, we have the opportunity to transition to recycled and renewable feedstock sources via further investments in PET recycling and biomass feedstock. Underpinning this is the continued development of our organization and, future-proofing the Company with leadership that embraces a growth mindset and is empowered with the right tools to lead. As we prepare ourselves for the new world of circularity, we are confident in our ability to produce strong financial performance with ample headroom to deliver on our vision.

ESG Journey

IVL is recognized for leading the industry's sustainability drive, and we continue to expand our leadership position through substantial investments in sustainability and circularity. Since embarking on our recycling journey in 2011, we have increased our PET recycling capacity by more than 100 times from 3.6kt per year in 2011 to 429 kt per year in 2021. Our global reach and leadership position as the world's leading rPET producer has put us on track to recycle 50 billion PET bottles per year by 2025.

Highlights from 2021 include:

- Launch of our DEJA™ Carbon Neutral PET pellet, a first for the industry.
- Acquisition of a recycling asset in Dallas, Texas recycling more than 3 billion PET bottles/annum.
- Announcement of a greenfield recycling facility in Indonesia to process more than 2 billion PET bottles by 2023.

- Formation of Decarbonization SOPs and the introduction of an internal carbon price to drive green projects across the organization.
- Awarded a Platinum Medal by the EcoVadis Sustainability Assessment, its highest award, ranking IVL in the top 1% of companies assessed worldwide.

Organizational Excellence

We continue to focus on building strong systems to unlock the full potential of IVL – and significant progress was made in 2021.

We are investing in one ERP as a critical enabler for operational excellence, beginning with its successful implementation this year in North America while our teams are committed to continuing the momentum as we roll it out across the organization. This year also saw the inauguration of the Global Business Services (GBS) center in Kolkata, India, an important milestone in our efforts to drive standardization, enhance agility and optimize costs. We will continue to progress on our digital agenda in order to support IVL with the right infrastructure to empower our people.

Project Olympus delivery is ahead of the 2023 target, and with additional value potential identified, we have increased the ambition to USD 650+M in recurring EBITDA uplift by 2024. All three business segments are implementing hundreds of initiatives across all regions, the progress of which is closely monitored by our Transformation Management Office using our KEY system. Continued strong Olympus delivery in 2021 across geographies and segments exceeded our target by 2%. As we continue to extract further value, Olympus will increase the strength of our already powerful platform.



Corporate Strength

Our net debt to equity declined from 1.42 times in 2020 to 1.21 times in 2021 with higher EBITDA leading to an increase in retained earnings, debt reduction after dividend payments and higher working capital outflows of USD 848M on higher volumes and prices.

Sustainable finance represents a significant opportunity for IVL. Today, close to 20% of our total debt is sustainability linked, which has diversified our borrowing base with reputable international institutions. This represents our commitment to achieving our ESG targets, while reducing our cost of debt.

This year, IVL received reaffirmation of its TRIS rating of AA- and a lifting of the negative outlook that has been in place since 2020. The upgrade was given considering the strong rebound in our operational and financial performance in 2021, positive views of the petrochemical industry, and positive expectations of the upcoming Oxiten acquisition.

2021 Performance by Business Segments:

Combined PET (CPET)

The segment continued its track record of delivering consistent growth and strong returns. CPET had an exceptional 2021, delivering Core EBITDA of USD 1,103M, achieving growth of 39% over 2020, and reported EBITDA of USD 1,353M. This was largely driven by supportive macro factors bringing up volumes by approximately 6%, as well as improved spreads due to the high freight regime increasing import parity.

	2021	2020	2021 YoY
Integrated PET			
Sales Volume (MMt)	9.68	9.39	3%
Core EBITDA (US\$m)	900	642	40%
Packaging			
Sales Volume (MMt)	0.22	0.21	1%
Core EBITDA (US\$m)	80	80	(0%)
Specialty chemicals			
Sales Volume (MMt)	0.77	0.75	3%
Core EBITDA (US\$m)	123	71	72%
Combined PET			
Sales Volume (MMt)	10.67	10.35	3%
Core EBITDA (US\$m)	1,103	794	39%

However, the year was not without its challenges, namely record high energy and acetic acid prices, specifically impacting Integrated PET and Specialty Chemicals verticals by USD 126M in 2021. In 4Q21,

IVL introduced a surcharge to offset these cost hikes. Additionally, power outages due to labor shortages resulted in some volume loss through the year.

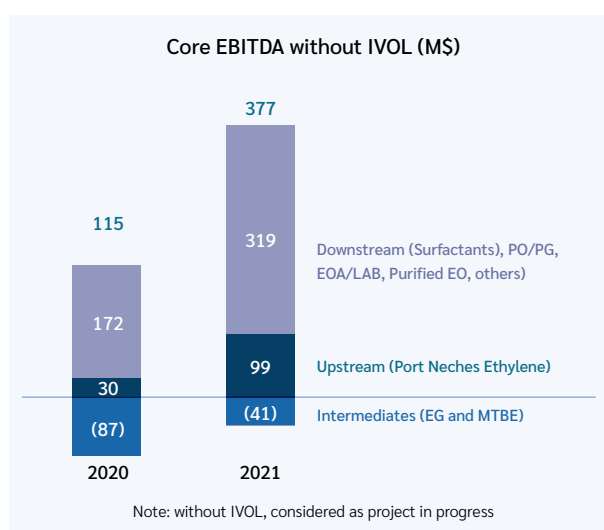
IVL expanded recycling capacity by adding nine new assets during the pandemic, on track towards our 2025 target of recycling 50 billion bottles per annum. IVL has solidified its place as a leading partner for sustainable solutions and PET has emerged as a preferred polymer for our customers. PET is a sunshine industry, with a growth outlook amplified by its sustainability drive.

The segment delivered approximately USD 83M in Olympus efficiency gains in 2021, a 95% achievement over 2021 targets.

Demand for PET is set to remain strong going forward and with low pipeline inventories, 2022 is expected to be an exceptionally positive year for the segment. With the revision of 2022 contracts, IVL will be in a position to gain full benefits.

Integrated Oxides and Derivatives (IOD)

Strong performance in 2021 resulted in a 228% increase YoY in Core EBITDA to USD 377M, driven by Upstream and Downstream portfolios. MEG and MTBE performance in the Intermediates portfolio continues to improve but remained weak.



IOD's Upstream Portfolio

The strong ethylene price resulted in improved performance with Core EBITDA of USD 99M, as compared to USD 30M in 2020 despite lower than anticipated volumes due to the delay of the Lake Charles (IVOL) startup. This year will benefit from integrated margin upside coming from the IVOL cracker which has been operating since November 2021 and currently with an operating rate of about 75%.

IOD's Intermediates Portfolio

MEG performance in 2021 improved by 27% YoY, benefiting from the shale gas advantage as the price of crude oil increased. MEG spreads are expected to improve in 2022 as crude continues to rise.

MTBE performance improved by 134% YoY. MTBE prices improved over the year as oil and gasoline prices rose, however, raw material prices of butane and methanol increased significantly. Both these factors, coupled with demand and supply imbalances, dampened the improvement and caused volatility in MTBE spreads. By the end of 2021, there were positive signs for MTBE with green shoots in demand recovery with increased travel and relief in the price of raw materials.

IOD's Downstream Portfolio

The downstream portfolio continues to benefit from strong growth in demand for home and personal care products, driven by increasing consumer awareness in health and hygiene post-COVID-19. Additionally, demand for end markets in coatings and oil and gas resources will continue to remain robust.

The acquisition of Oxiteno is expected to close in Q1 2022 and will bring additional upside to this portfolio. Oxiteno brings innovative and customer-centric products and an experienced management team in an attractive geography.

Fibers

The Fibers segment delivered Core EBITDA of USD 268M in 2021, an increase of 37% from 2020, and Reported EBITDA of USD 297M. Fibers benefited from the realization of margin gains from the sales price increase due to the tight market and favorable product portfolio mix, with setbacks coming from energy and commodity price increases. Overall volumes increased by 11% as compared to 2020, largely driven by improved performance in Lifestyle and Mobility verticals.

	2021	2020	2021 YoY
Lifestyle			
Sales Volume (MMt)	1.17	1.04	12%
Core EBITDA (US\$m)	130	56	132%
Core EBITDA/t	116	58	101%
Mobility			
Sales Volume (MMt)	0.25	0.20	23%
Core EBITDA (US\$m)	56	18	208%
Core EBITDA/t	226	91	148%
Hygiene			
Sales Volume (MMt)	0.37	0.40	(6%)
Core EBITDA (US\$m)	82	121	(33%)
Core EBITDA/t	218	309	(29%)

*Core EBITDA/t calculation is based on production

Mobility fibers was negatively impacted by the global semiconductor chip, shortage; however, this was largely offset by the resilient tire replacement market resulting in an overall improvement in sales volume by 23% YoY. The chip shortage is expected to continue to put pressure on OEM demands in 2022, impacting the performance of our airbag yarn business, although replacement tire demand will remain strong.

Lifestyle fibers volumes increased by 12% as compared to 2020 as a result of improved domestic demand in markets such as India and Brazil. This was partially offset by the negative impact of high ocean freight rates on IVL's export reliant production centers in Thailand and Indonesia.



Hygiene fibers saw its peak in 2020 and has found a new normal in 2021, maintaining above pre-pandemic levels. The vertical has been challenged by the negative lag impact in 2021, given the high prices of key raw material polypropylene, having a total impact of USD 35M during the year. In 2022, Hygiene fibers will gain upside from key investments coming onstream including the Project Gemini expansion in the US and optimization of our Indian operations.

The segment delivered USD 130M in Olympus efficiency gains in 2021, with management successfully achieving targets despite the challenges. Realization of its full potential is on track. The Fibers platform is preparing for the next cycle of growth, harnessing favorable mega trends including sustainability.

2021 Summary Financials

Table 1: Core Financials of Consolidated Business

US\$ million (except where stated otherwise)	2021	2020	Change %
Production Volume (MMT)	14.72	13.72	7%
Consolidated Revenue ¹	14,629	10,594	38%
Core EBITDA^{2,3,6}	1,743	1,124	55%
Combined PET	1,103	794	39%
Integrated Oxides and Derivatives ⁶	377	115	228%
Fibers	268	195	37%
Core EBIT ⁶	1,108	511	117%
Core Net Profit after Tax and NCI^{4,6}	684	255	168%
Core Net Profit after Tax and NCI (THB m) ⁶	21,887	7,987	174%
Core EPS after PERP Interest (THB)⁶	3.76	1.29	+2.48
Core EBITDA/T (\$)⁶	118	82	44%
Operating Cash Flow⁵	1,055	1,388	(24)%
Net Operating Debt to Equity⁶ (times)	0.84	1.05	(21)bps

* 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 the 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 Operating Cash Flow is after changes in net working capital and cash tax, before maintenance capex.

⁶ For this purpose, IVOL P&L values are moved below EBITDA to extraordinary items and consider IVOL capital employed as Non-operating Debt. Normalization is done for all years upto 2021.

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 (IOD)		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)	2021	2020	Change %
Production Volume (MMT)	14.72	13.72	7%
Combined PET	10.73	10.17	6%
Integrated Oxides and Derivatives	2.24	1.98	13%
Fibers	1.75	1.57	11%
Operating rate (%)	85%	79%	7%
Combined PET	86%	82%	5%
Integrated Oxides and Derivatives	84%	75%	13%
Fibers	79%	72%	11%
Consolidated Revenue^{1,2}	14,629	10,594	38%
Combined PET	9,171	6,783	35%
Integrated Oxides and Derivatives	2,514	1,552	62%
Fibers	3,660	2,696	36%
Core EBITDA^{3,4}	1,743	1,124	55%
Combined PET	1,103	794	39%
Integrated Oxides and Derivatives ⁴	377	115	228%
Fibers	268	195	37%
Core EBITDA Margin (%)⁴	12%	11%	1ppt
Combined PET	12%	12%	0ppt
Integrated Oxides and Derivatives ⁴	15%	7%	8ppt
Fibers	7%	7%	0ppt
Core ROCE%⁴	11.8%	5.6%	6ppt
Combined PET	19.1%	13.1%	6ppt
Integrated Oxides and Derivatives ⁴	7.3%	(3.0)%	10ppt
Fibers	4.6%	1.2%	3ppt

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 the elimination of Intra-company.

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

⁴ For this purpose, IVOL EBIT values and capital employed are moved to extraordinary items. Normalization is done for all years upto 2021.

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
Acquisition of Oxiteno	Downstream Surfactants in IOD segment	1H22 (expected in Mar/Apr22)	Revenue around 1B pa with around 20% EBITDA margin	Double digit ROCE with future growth opportunities	2022: US\$1,150M 2024: US\$150M
Olympus Cost Transformation Program	Corporate and all business segments	2020-2023	n/a	EBITDA \$610M	~600-650
Corpus Christi PET/PTA	Integrated PET	TBD	PET: 367 kta PTA: 433 kta	TBD	TBD
Recycling Projects	PET recycling	Various ongoing projects	2025: ~750kta 2030: ~3MMT pa	ROCE 13-15%	By 2025: ~\$1.5B

Accounting Policy

The accounting policies are adopted and applied consistently to all of the periods. For more information on key accounting policies, please refer to Note numbers 3 of our full-year 2021 audited financial statements.

Key Audit Matters

As at 31 December 2021, the Group had goodwill of Baht 17,411 million. The cash generating units (“CGU”) to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (discounted cash flow (“DCF”)) method to determine the recoverable amount of each CGU to which goodwill belongs. Any shortfall of the recoverable amount against the carrying amounts would be recognized 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 CGU to which goodwill belongs, auditor considered the measurement of the recoverable amount as a key audit matter.

Performance Comparison

Revenue from the sale of goods

THB in millions	FY 2020	FY 2021	Change (%)
Revenue from the sale of goods	331,512.9	468,108.3	41.2%
Add: Eliminations	13,669.4	22,907.1	67.6%
Adjusted revenue from the sale of goods	345,182.4	491,015.4	42.2%
Combined PET	212,271.9	293,470.3	38.3%
Integrated Oxides and Derivatives	48,552.8	80,440.5	65.7%
Fibers	84,357.7	117,104.6	38.8%

Sales revenue for the year ended 2021 was THB 468,108.3 million, an increase of 41.2% from 2020. The increase in sales revenue is the result of the increase in the price of crude oil in 2021 which affected crude-linked product prices to rise and the increase in production volume in the overall business by 7%.

Combined PET Revenue

Combined PET revenue for the year ended 2021 was THB 293,470.3 million, an increase of THB 81,198.4 million, or 38.3% from 2020, mainly driven by supportive macro factors bringing up volumes by approximately 6% in connection with the higher product prices due to the risen oil price.

Integrated Oxides and Derivatives Revenue

Integrated Oxides and Derivatives revenue for the year ended 2021 was THB 80,440.5 million, an increase of THB 31,887.7 million, or 65.7% from 2020, driven by the improved demand of MTBE due to increased travel and the robust demand of the downstream portfolio through the pandemic.

Fibers Revenue

Fibers revenue for the year ended 2021 was THB 117,104.6 million, an increase of THB 32,746.9 million, or 38.8% from 2020, driven mainly by improved demand. Mobility fibers benefited from strong demand for replacement tires, while the semiconductor shortage muted the full recovery to pre-pandemic levels. Hygiene fibers demand remains steadily above pre-pandemic levels. Lifestyle fibers will continue to benefit from demand improvements, especially from domestic consumption in emerging markets such as India and Brazil.

Cost of Sales of Goods

THB in millions	FY 2020	FY 2021	Change (%)
Cost of sales of goods⁽¹⁾	287,881.9	383,128.0	33.1%
As a percentage of total revenues	86.8%	81.8%	

⁽¹⁾ Cost of sales of goods in the statement of income for the year ended 31 December 2020 has been reclassified to conform to the disclosure in the 2021 financial statements.

Our cost of sales for the year ended 2021 was THB 383,128.0 million, an increase of THB 95,246.1 million, or 33.1% from 2020 which is in line with the increase in sales revenue.

Gross Profit

THB in millions	FY 2020	FY 2021	Change (%)
Gross Profit	43,631.0	84,980.4	94.8%
As a percentage of total revenues	13.2%	18.2%	

Gross profit for the year ended 2021 was THB 84,980.4 million, an increase of THB 41,349.3 million or 94.8% from 2020. The gross profit margin of 18.2% in 2021 increased from the prior year mainly due to the significant 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 2020	FY 2021
Industry spread		
Asia Integrated PET	206	251
West Integrated PET	404	666

* 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 2020	FY 2021	Change (%)
EBITDA⁽¹⁾	29,383.1	63,438.4	115.9%
Add: Inventory loss/(gain) ⁽²⁾	5,553.0	(8,776.0)	
Add: Extraordinary items	225.0	1,100.8	
CORE EBITDA	35,161.1	55,763.2	58.6%
As a percentage of total revenues	10.6%	11.9%	
Add: Eliminations and others ⁽³⁾	(621.8)	163.2	
Adjusted CORE EBITDA	34,539.3	55,926.4	61.9%
Combined PET	24,836.3	35,298.9	42.1%
As a percentage of total Combined PET revenue	11.7%	12.0%	
Integrated Oxides and Derivatives ⁽⁴⁾	3,594.7	12,065.9	235.7%
As a percentage of total Integrated Oxides and Derivatives revenue	7.4%	15.0%	
Fibers	6,108.3	8,561.6	40.2%
As a percentage of total Fibers revenue	7.2%	7.3%	

⁽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. Normalization is done for all years upto 2021.

Core EBITDA for the year ended 2021 was THB 55,763.2 million, an increase of THB 20,602.1 million or 58.6%. Core EBITDA growth was seen across all three business segments as follows:

Combined PET Core EBITDA

Combined PET Core EBITDA for the year ended 2021 was THB 35,298.9 million, an increase of THB 10,462.6 million, or 42.1% from 2020, driven by the increasing volume by 6% and improved spreads due to the high freight regime increasing import parity and strong PET spreads due to China's introduction of a dual policy mechanism.

Integrated Oxides and Derivatives Core EBITDA

Integrated Oxides and Derivatives Core EBITDA for the year ended 2021 was THB 12,065.9 million, an increase of THB 8,471.2 million, or 235.7% from 2020, driven by the strong ethylene price and shale gas advantage as the price of crude oil increased, which improved MEG spreads. MTBE improved from increased travel while downstream portfolios improved from strong demand of home and personal care products, driven by rising consumer awareness for health and hygiene post-COVID-19.

Fibers Core EBITDA

Fibers Core EBITDA for the year ended 2021 was THB 8,561.6 million, an increase of THB 2,453.3 million, or 40.2% from 2020. This resulted from the realization of margin gains from the sales price increase due to the tight market and favorable product portfolio mix. Overall

volumes increased by 11% as compared to 2020, largely driven by the improved performance in Lifestyle and Mobility verticals.

Other Revenues

THB in millions	FY 2020	FY 2021	Change (%)
Interest income	192.0	215.7	12.3%
Net foreign exchange gain/(loss)	119.4	(297.2)	(348.8)%
Gain on a bargain purchase	1,806.4	-	(100.0)%
Other income	3,031.5	4,748.9	56.7%
Total	5,149.3	4,667.5	(9.4)%

Interest Income

Interest income for the year ended 2021 was THB 215.7 million, an increase of THB 23.7 million, or 12.3% from 2020. This was mainly due to an increase in current investments during the year.

Net Foreign Exchange Loss

There was a net foreign exchange loss for 2021 of THB 297.2 million which equals to 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.

Gain on Bargain Purchase and Goodwill

In 2020, IVL acquired several businesses where the excess of the Group's interest in the net identified assets and liabilities of the companies acquired over cost is considered to be a gain on bargain purchase and recognized in the consolidated statement of income in accordance with generally accepted accounting principles for business combinations. A valuation of net identified assets acquired and liabilities assumed is calculated every time to arrive at recognized values. Fair value adjustments are the difference between the carrying amount and the recognized value. In 2020, IVL had gain on bargain purchase of THB 1,806.4 million.

In 2021, IVL acquired a business where the goodwill is recognized in the consolidated statement of financial position. IVL had goodwill of THB 274.5 million. The following details are provided:

THB in millions	Net identified assets acquired and liabilities assumed				
	Interest acquired (%)	Recognized values	Total consideration	Gain on bargain purchase	Goodwill
Companies acquired during the year ended December 31, 2020					
Huntsman Corporation, USA	100%	60,922.5	59,116.1	1,806.4	-
AG Resinas Ltda., Brazil	100%	215.9	291.0	-	75.0
Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland	100%	437.5	465.3	-	27.9
				1,806.4	102.9
Companies acquired during the year ended December 31, 2021					
Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries, USA	100%	1,846.8	2,121.3	-	274.5
				-	274.5

Gain on bargain purchase is considered by management as an extraordinary item which does not arise from the normal operations of the business but is included in the net profit of the Company. Additional information on each acquisition is provided in Note 4 – Acquisitions of Businesses in the Audited Financial Statements. Net identifiable assets acquired, including intangible assets, i.e. customer contracts, technology licenses and know-how, trade names and trademarks, were all recognized in the financial statements at fair value, and subject to depreciation, amortization or impairment (if any) in accordance with generally accepted accounting principles, as disclosed in Note 3 – Significant Accounting Policies in the Audited Financial Statements.

IVL's management expertise and business model allows us to buy companies most of the time at below their fair value as determined by an appraiser. We, therefore, need to record the gain on bargain purchase. These gains are recorded under property plant & equipment or intangibles or other assets, as applicable.

Other Income

Other income for the year ended 2021 was THB 4,748.9 million, an increase of THB 1,717.4 million, or 56.7% from 2020. This was mainly due to an insurance claim of Indorama Ventures Olefins LLC. and

other income. Please refer to Note 27 – Other Income in the Audited Financial Statements for further details.

Expenses

THB in millions	FY 2020	FY 2021	Change (%)
Distribution costs ⁽¹⁾	21,161.7	27,849.6	31.6%
Administrative expenses ⁽¹⁾	17,542.3	19,172.7	9.3%
Management benefit expenses	309.3	321.0	3.8%
Total	39,013.3	47,343.3	21.4%

⁽¹⁾ Distribution costs and Administrative expenses in the 2020 financial statements have been reclassified to conform to the disclosure in the 2021 financial statements.

Total expenses for the year ended 2021 was THB 47,343.3 million, an increase of THB 8,330.0 million, or 21.4%, from 2020 because of higher spending on distribution costs and administrative expenses in line with our volume growth. Please refer to Note 29 and 30 – Distribution Costs and Administrative Expenses of the Audited Financial Statements for further details on this item.

Impairment loss determined in accordance with TFRS 9, net

IVL recorded an impairment loss amount of THB 97.1 million in 2021 and THB 54.1 million in 2020, an increase of THB 42.9 million, or 79.3%, from 2020 due to the increase in provisions for impairment of accounts receivables and other receivables.

Research and Development (R&D) Expenses

IVL has a robust R&D platform with 20 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 2021, IVL spent THB 674.6 million (2020: THB 601.2 million) on R&D.

Finance Costs

Finance costs for the year ended 2021 was THB 7,120.7 million, a decrease of THB 553.2 million from 2020, that were in line with a decrease in overall interest-bearing liabilities in dollar terms during the year.

Share of Profit of Jointly-Controlled Entities, Net

IVL had a share of profit from joint ventures in the amount of THB 160.2 million and THB 142.8 million for the year ended 2021 and 2020, respectively. A net increase in the share of profit from joint ventures was due to an increase of share of profit in ES FiberVisions, Ecomex, and ES FiberVisions (Thailand) offset with a decrease of share profit in ES FiberVisions (Suzhou), PHP (Pingdingshan), and Huvis. Please refer to Note 11 – Investment in Joint Ventures in the Audited Financial Statements for further details.

Tax Expense

Tax expense for 2021 was THB 6,703.3 million, which was in line with the increase in 2021 earnings. In 2020, there was tax income amount of THB 1,243.1 million. This was driven by the profit record of Deferred Tax Assets in India and the reversal of a tax provision in the United States.

Net Profit

THB in millions	FY 2020	FY 2021	Change (%)
Net profit	2,800.1	28,253.7	909.0%
As a percentage of total revenues	0.8%	6.0%	
Profit attributable to:			
Owners of the Company	2,414.3	26,288.0	988.9%
Non-controlling interests	385.8	1,965.7	409.5%

Net Profit for the year ended 2021 was THB 28,253.7 million, an increase of THB 25,453.7 million, or 909.0%, from 2020 due to a significant increase in industry margins across the business due to the substantial increase in the price of crude oil in 2021 and the increase in production volumes in the overall business. 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, 2021 and 2020, IVL had total assets of THB 541,828.2 million and THB 453,171.5 million, respectively. The increase of 19.6% was mainly due to growth in our business from expansions and acquisitions as well as higher absolute prices following the crude oil trend. The major assets are as follows:

Trade Accounts Receivable

As of December 31, 2021 and 2020, IVL reported trade accounts receivable of THB 53,171.9 million, and THB 33,421.6 million respectively, representing 9.8% and 7.4% 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.

	Consolidated financial statement	
	December 31, 2020	December 31, 2021
	<i>THB in millions</i>	
Within credit terms	30,001.5	48,481.3
Overdue:		
Less than 3 months	3,068.6	4,408.0
3-6 months	222.2	250.4
6-12 months	87.6	30.0
Over 12 months	665.0	675.4
Total	34,044.8	53,845.1
Less: allowance for expected credit loss	(623.2)	(673.2)
Total	33,421.6	53,171.9

Inventories

As of December 31, 2021 and 2020, IVL reported inventories of THB 88,979.0 million and THB 53,938.5 million, respectively, representing 16.4% and 11.9% of total assets. The spike in inventories is the result of higher absolute prices following the crude oil trend.

Investment in Joint Ventures

As of December 31, 2021 and 2020, IVL reported investments in jointly-controlled entities of THB 3,488.7 million and THB 2,954.9 million, respectively, representing 0.6% and 0.7% of total assets. The increase is mainly the result of additional investments during the year and equity gains taken. Please refer to Note 11 – Investment in joint ventures in the Audited Financial Statements for further details.

Property, Plant and Equipment (PPE)

As of December 31, 2021 and 2020, IVL reported property, plant and equipment of THB 291,676.9 million and THB 264,290.9 million, respectively, representing 53.8% and 58.3% of total assets. The increase is the result of the completed acquisition of CarbonLite Holdings LLC, PET recycling assets in the United States and the effect of movements in exchange rates from currency fluctuations. Please refer to Note 14 – Property, plant and equipment in the Audited Financial Statements for further details.

Other Intangible Assets

As of December 31, 2021 and 2020, IVL reported intangible assets of THB 33,869.3 million and THB 31,230.6 million, respectively, representing 6.3% and 6.9% of total assets. Intangible assets increased 8.4% from last year which was mainly from technology licenses and know-how which were acquired through business combinations in 2021 and the effect of movements in exchange rates from currency fluctuations. Please refer to Note 18 – Other Intangible Assets in the Audited Financial Statements for further details.

Loan 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, 2021, these amounts are not material.

Total Liabilities

As of December 31, 2021 and 2020, IVL reported total liabilities of THB 370,824.8 million and THB 317,563.7 million, respectively. The increase in total liabilities mainly resulted from an increase in trade accounts payable.

Trade Accounts Payable

As of December 31, 2021 and 2020, IVL had trade accounts payable of THB 90,264.9 million and THB 57,782.6 million, respectively. The increase in trade accounts payable resulted from higher absolute prices following the crude oil trend and supply chain financing for working capital optimization. The payment days slightly decreased from 71.9 days for the year ended December 31, 2020, to 69.6 days for the year ended December 31, 2021.

Interest-bearing liabilities

As of December 31, 2021 and 2020, IVL reported interest-bearing liabilities of THB 224,226.3 million and THB 211,960.5 million, respectively, representing 41.4% and 46.8% of total liabilities and shareholders' equity.

Our net operating debt-to-equity decreased from 1.05 times at the end of 2020 to 0.84 times at the end of 2021, after spending on capex and investments of THB 26,716.4 million in 2021 which was primarily from the acquisition of Carbonite PET recycling assets in the United States. IVL's net operating debt increased from THB 142,222.3 million at the end of December 31, 2020 to THB 142,909.9 million at the end of December 31, 2021. For this purpose, consider IVOL capital employed as Non-operating Debt.

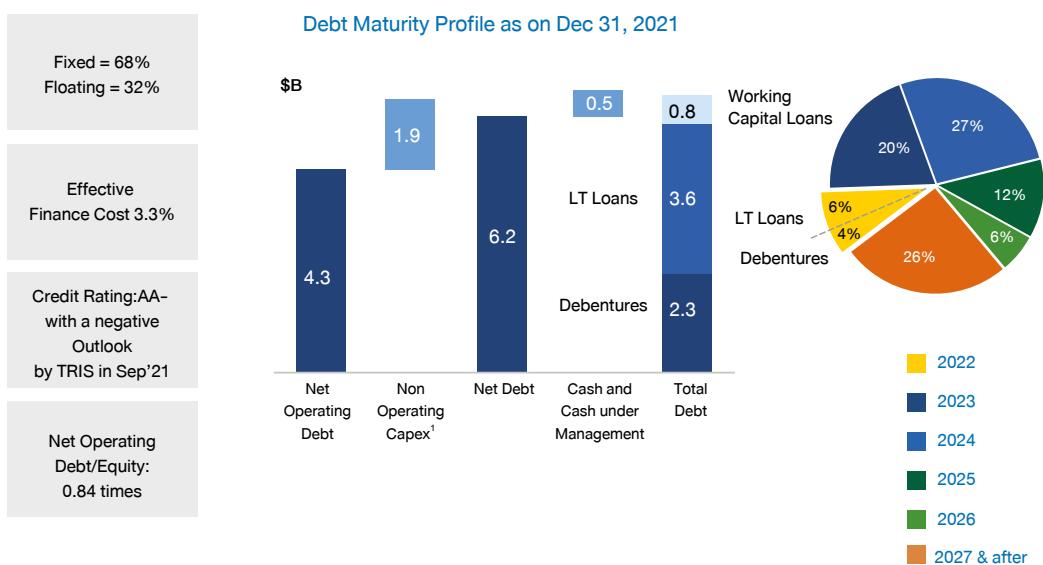
The table below describes total debt and net operating debt in THB billions:

	THB in billions	31-Dec-20	31-Dec-21
Total debt		212	224
Bank overdraft and short-term loans		21	27
Long-term debt (Current portion)		11	11
Debtentures (Current portion)		8	8
Long-term debt (Non-current portion)		108	110
Debtentures (Non-current portion)		65	69
Cash & Cash under management		20	16
Cash and cash equivalents		19	16
Current investments and loans given		1	0
Net debt		192	208
Non-operating debt (Project debt)		50	65
Net operating debt⁽¹⁾		142	143
Net debt to equity (times)		1.42	1.21
Net operating debt to equity (times) ⁽²⁾		1.05	0.84
Debts with fixed interest %		70%	68%
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 2020 and 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, 2021 and 2020, IVL reported shareholders' equity of THB 171,003.4 million and THB 135,607.8 million, respectively. The increase in shareholders' equity was mainly due to an increase in retained earnings resulting from the profitability of the Company, net of dividends paid and increase of the translation reserve. Please refer to "Statement of Changes of Equity" in the Audited Financial Statements for more details.

Cash Flow

IVL generated THB 33,771.9 million in cash flow from operating activities in 2021 compared to THB 43,436.1 million in 2020. The decrease in cash flow from operating activities was due to the higher net working capital needs and higher absolute prices following the crude oil trend.

Cash flow used in investing activities of THB 25,767.1 million in 2021 was primarily paid towards the acquisition of Carbonite PET recycling assets in the United States and acquired the remaining 49% shareholdings in EcoMex. Capex and investments were funded by a mix of long-term loans and cash flow from operations.

Cash flow used in financing activities of THB 10,894.3 million in 2021 was principally a result of repayment loans and dividends paid.

Liquidity

Strong cash flow from operations and a longer average loan maturity led to a high liquidity position for the Company. As at December 2021, IVL had liquidity of THB 66,948.5 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 increased slightly from 1.0 times at the end 2020 to 1.1 times at the end 2021 driven mainly by an increase in current assets. This ratio above 1 illustrated 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 18.4% in 2021 compared to 1.9% in 2020, a significant increase driven mainly by an improvement of Industry spreads. IVL's core ROE of 17.2% in 2021 compared to 6.5% in 2020 which 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.

Return on Assets Ratio (ROA)

Our ROA ratio is calculated by dividing net profit for the year by the average total assets. For the year ended 2021 and 2020, our ROA ratio was 5.7% and 0.7%, respectively. IVL's core ROA of 7.6 % in 2021 compared to 4.0% in 2020, which 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.

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, 2021 and 2020, our net interest-bearing debt-to-equity stood at 1.2 times and 1.4 times, respectively. 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, 2021 and 2020, our DSCR was at 2.5 times and 2.0 times, respectively. The increase came from an improvement in core EBITDA compared to 2020. 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.



Potential Risk Factors

Risk monitoring and control mechanisms at IVL

The Enterprise Risk Management framework uses top-down and bottom-up approaches to identify and manage business risks at both corporate and subsidiary levels around the world to identify and mitigate business risks at every level. This is led by the Board, the Committee and senior management, and covers the assessment and review of internal and external risks, including global risks and factors that may affect the Company's operations. Business heads in the Sustainability and Risk Management Committee, 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 business segment and plant level. In addition, the Sustainability and Risk Management Committee reviews a sensitivity analysis of the business plan, Greenfield and M&A projects, to ensure sustainability specifically with regards to any environmental and social impacts to our business.

3.1 Emerging Business Risks

3.1.1 Risk of increasing polarization in the world 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

Our operations have been rapidly increasing globally year-on-year, presenting new challenges and risks. These include geopolitical standoffs and fragmentation, resource nationalism and protectionist policies, and the rise of unilateralism. These developments may lead to unexpected or inconsistent changes in foreign laws; currency controls, tax regulations, and changes in international tax treaties; sanctions, the imposition of duties on imports; anti-dumping duties; data privacy, anti-corruption, environmental and regulatory requirements; or import and export controls, and tighter restrictions on the movement of goods, services, capital, labor, technology, data and information.

Many of these developments could be beyond our control and have an adverse impact on our operations.

Risk Mitigation Actions: We have considered the likelihood and potential business impact of each risk and has undertaken the following mitigation actions:

- 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.
- Stringent risk assessments and due diligence processes to benefit from opportunities and mitigate business risks including, but not limited to, an environmental and geopolitical risk analysis of every business opportunity before a decision is taken by the management and the Board.
- Close and continuous monitoring of political, economic and legislative conditions of each country, including threats from anti-national and terrorist activities; the safety and security of employees, and the assets of the Company.

3.1.2 Accelerated global digital transformations and the interconnectedness and convergence of digital tools may lead to market disruptions, new business models, unconventional competitors and/or industry consolidation.

These potentially transformative threats could disrupt our operations, business, and competitiveness. The risks and opportunities presented

are significant to trading, commerce, supply chain management, digital contract management, e-sourcing, logistics control towers, and collaborative supplier networks. This will not only simplify the interface with suppliers but also improve the efficiency of internal procurement interactions, enable predictive analytics and improve customer relationships and experiences.

Risk mitigations: We have considered the likelihood and potential impacts of the risk and has undertaken the following mitigation actions:

- A Global Digital Enabler was set up including digital infrastructure and an ecosystem capable of large scale and agile implementation.
- We have started this transformation work with the A.S.A.P project and enterprise-wide implementation of SAP S/4HANA.
- With the largest greenfield implementation in the industry, we have won several awards (including the "2021 CIO/CDO of the Year" from IDC Thailand, Pirelli Supplier Award, and Platinum Medal by EcoVadis Sustainability Assessment). This is the foundation for our next generation digital transformation enhancing the entire value chain from raw materials, procurement, production, quality, warehouses, logistics, sales, customers all the way to end consumers.

3.1.3 With the rise of a contactless economy and exchange, companies are expected to reinvent rules as employees seek new ways of working (such as remote work, flexible hours, or asynchronous work schedules) and life beyond work. The inability to evolve work culture and redefine workplace may weaken our employee value proposition (EVP) and affect talent attraction and retention. This could adversely impact our reputation, business, and operations.

The pandemic has shifted the paradigm of work culture. Employees expect companies to reinvent and rethink new ways of working and even more, adopting a new work culture. As we see a workforce emerging that can work anywhere, the opportunity for a company's talent pool grows exponentially without geographic boundaries, and the same opportunities open-up for qualified workers. It is imperative, more than ever, to reinvent our culture to retain and attract talent. The inability to do so may impede us from building a healthy leadership pipeline and obtaining the appropriate skillset, impacting our business and operations.

Risk mitigations:

We have undertaken the following mitigation actions:

- Introduced IVL's Purpose to communicate internally and externally on our broader raison d'être.
- Introducing a hybrid and flexible work culture.

- All legal entities have developed a Work from Home policy to ensure compliance with local legal frameworks when applicable and ensuring common principles in the absence of local legislation.
- Continuing to develop our Employer Value proposition to attract and retain talent.
- Providing developmental support to leaders to adjust to new remote leadership requirements.
- Implemented a global Employee Assistance Program to provide clinical support to employees in need and promote mental and physical well-being and wellness.

3.2 Business Risks

3.2.1 Growing anti-plastic sentiment, changes in consumer preferences and increased technological innovations could lead to the threat of product substitution.

It is difficult to anticipate the advent of disruptive innovations or new technologies at a scale that might outpace our ability to remain competitive. We remain vigilant about potential threats and opportunities and engage with a diverse set of external stakeholders in assessing both.

In particular, consumer selection trends of perceived eco-friendly substitutes for disposable plastic products, such as water bottles, is increasing. While good for raising environmental awareness, this might be misunderstood to include recyclable PET, thus affecting the future use of PET. Consumer product companies are emerging as new targets for global activism, with green groups blaming them for fouling the oceans with plastic, as activists urge governments to regulate them. Governments, in turn, are being pressured to take meaningful steps towards reducing single-use plastic waste and helping preserve the environment. Brand owners are also reacting, as they make bold commitments targeted at managing waste from packaging. The failure to address these challenges present risks to the industry's growth potential and license to operate.

Other potential headwinds include consumer preferences for bio-derived materials over fossil fuel-derived materials, regulatory pressures on single-use plastics, a move away from sugary drinks and the growing issue of microplastics. On the other hand, there are tailwinds of recognition of the lower carbon footprint of PET over alternatives, not only in the manufacturing of the product but through its lifecycle, recyclability, mandates to promote recycling as a means towards a circular economy and reducing waste, and emerging technologies on renewable sourcing and end-of-life mitigation.

Customers increasingly expect more personalized products and services. Sudden developments may alter customer expectations and change the core business model. Innovations can be restrained by an

organization's core business assumptions or structural limitations. The needs of customers may have evolved; new technologies and solutions may become available and/or regulations may change. Together, these can create discontinuities, potentially changing the structure of an industry.

Risk Mitigation Actions:

- We conduct emerging risk scans annually in addition to conferences with our top global leadership, including heads of corporate functions, to gain an understanding of and effectively respond to emerging risks.
- 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 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 work closely with brand owners to promote recycling and education campaigns to differentiate PET from other plastics. We observed the trends and thus strategically increased our investments in recycling plants; arrange more recycling factory visits and encourage recycling and end-use of rPET. We encourage doing more with less through sustainable consumption and production in addition to educating consumers on the need to recycle and adopt a lifestyle focused on sustainability. Our global recycling education programs promote recycling and waste separation among children, communities, and consumers to increase their awareness and involvement in protecting the environment for a better future.
- We committed to increasing rPET capacity from 160,000 tons per annum at the end of 2019 to more than 750,000 tons per annum by 2025. At the same time, we partnered with Ioniq and Loop Industries to develop the next generation technology for advanced recycling to increase the range of products that can be recycled.
- We engage with industry organizations and regulatory bodies to promote effective recycling programs and divert PET away from pathways leading to plastic in oceans.
- We work with regulatory industries to assess and increase the range of recycled products that can be approved for food contact and developed higher quality best-in-class recycling processes for regulatory approval.
- We engage with start-ups and technology developers to assess bio-derived raw materials, whether for surfactants, PET, or fibers. And having commercialized plant-derived MEG (ethylene glycol, a raw material input to make PET), we engage with technology providers to assess next generation sources of MEG as well as other raw materials.

- In the Fiber space, there is growing interest in developing more sustainable materials notably with major end users who are committing to increasing the content of such materials. We have developed and continue to develop a broader range of bio-derived raw materials and polymers for such applications.
- In recognizing the potential issue of microfibers, we recently developed fibers with a reduced lifetime in the open environment to address the issue of product leakage.
- We are increasing the importance of life cycle analysis (LCA) to confirm the environmental impact of our products and demonstrate to customers their beneficial carbon footprint over those of competitors. Such analyses helps focus actions to improve hotspots in our product portfolio.
- We are working with several industry partners to achieve a circular economy for sustainable plastics and intend to play a leading role by bringing customers of recycled products into the value chain and developing ways to include recyclability in all of our products.

Opportunities in embracing potential rewards from disruptive trends

With discerning business and technical expertise, disruptive innovations can present opportunities for a company's growth. As noted previously, these can run counter to established business models. To promote company-wide assessment and adoption of external technologies and processes, IVL established an Enabling Functions organization. One noteworthy function is the Digital Organization.

Combining artificial intelligence (AI) and sustainability concerns can support environmental issues and society. AI provides additional tools alongside physical models, economic models, for decision-makers operating in complex constrained frameworks, deploying data science as a means to address climate change information or leverage machine-learning techniques to support the management of sustainable clean water and energy production.

The environmental impact of PET is lower in comparison to glass, aluminum and other recyclable container materials. Being lightweight, PET saves resources and also cuts costs and environmental impacts during transportation. PET also reduces carbon footprints by using less energy, creates fewer GHG emissions, and generates less solid waste. PET has, therefore, become the top choice in the packaging sector.

We invest in research and development, fostering innovation and encouraging our people to be proactive and develop capabilities to adapt and transform threats into opportunities. This helps us in disrupting the market by producing innovative, game-changing products and ideas that fundamentally change the way people live and work.

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.

By leveraging our strong foundation in the PET market and geographic reach, we see vast opportunities to grow the POLYSHIELD® PET and OXYCLEAR® Barrier PET brands to their full potential by reaching out to both existing and new customers around the world.

3.2.2 External factors, including adverse market conditions, intensifying competition, and raw material supply (crude oil, energy, commodity energy prices) could impact our ability to maximize profitability across the value chain.

Market conditions

The cost of our products may increase due to various external factors, such as an increase in labor costs due to inflation, changes in minimum wage regulations; unplanned or prolonged shutdowns; raw material shortages; natural disasters; strikes; technical failures and regulatory rulings for environmental non-compliance. In such cases, we may not be able to fulfil our product delivery obligations and could therefore be exposed to claims for damages, suffering loss of reputation.

Risk Mitigation Actions: 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, moreover, will help the organization plan, test, train, react and recover to reduce business disruptions and the potential cost of downtime.

Competition

The industries in which we operate are characterized by price and other competition.

- Most of our products are commodities – necessities – with a growing number of high value-added (HVA) products, and it may be difficult to have product differentiation and pass on increased costs to customers.
- Other competitive factors include product quality, specifications or product performance, continuity, and reliability of supplies to customers, and sustainable long-term customer relationships.
- We often compete with large multinational companies as well as regional and/or specialized producers in the markets for our polyester fiber products. Margin pressure could arise from, for instance, limited demand growth and overcapacity in a market.

Risk Mitigation Actions: Greater integration and diversification of our manufacturing facilities across geographies, product innovations, product diversification, cost reductions and other operational excellence measures.

Raw materials

- We have largely been in a relatively stable utility cost environment thus far. However, in 2021, we saw significant increases resulting in major cost escalations to the extent that the industry had to resort to surcharges in existing contracts. Some of these were accepted by customers and some were rejected as they were not part of the original contracts. Also, some of these increases may be reflected in industry spreads but may not be completely passed on.
- Our financial conditions and operational results are thereby influenced by the market prices of these items, which are then subject to supply and demand, as well as other factors beyond our control.
- The markets and prices for petroleum products may be influenced by aggregate demand for such products (which can fluctuate with changes in economic conditions and cycles, seasons, and weather patterns), the level of domestic and regional production, the prices and availability of imports, the prices and availability of substitute fuels and the extent and nature of government regulations and taxation.
- Any increase in raw material costs without a corresponding increase in the sale price would reduce our operating results. Our ability to pass on raw material price increases is dependent upon market conditions and our relative cost position compared to competitors.
- There may be periods of time in which we may not be able to fully recover increases in the cost of raw materials due to contractual arrangements or weaknesses in demand for, or oversupply of, our products.
- Volatility of crude oil prices brings the risk of markdowns or mark-ups of inventories that we carry at any point in time and can adversely or positively impact our performance.
- Our reported capital employed might also be affected as working capital requirements change with movements in our products or raw materials prices.
- Natural gas price volatility affects cash conversion costs in the countries where we operate. As we consume natural gas at certain locations, the volatility of natural gas prices can benefit or hinder our performance.
- The past year saw a very tight ocean shipping market and an exponential rise in ocean freights. This has impacted some of our sales which are committed on a CFR/CIF basis, in addition to our position against some competitors who may not be as affected due to their geographic advantage.

Risk Mitigation Actions:

- The losses or gains due to marking-to-market fluctuations in our inventories are largely mitigated by 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 freights, 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.

3.2.3 Cyclical patterns of the PTA, MEG, PET resin, Polyester and Non-Polyester fiber and yarn industries, and periodic overcapacity can result in adverse price fluctuations.

Our operating results reflect the historically cyclical pattern of the PTA, MEG, PET resin, polyester and non-polyester fiber and yarn industries, with periodic overcapacity and the resulting pressure on pricing.

- This cyclical nature arises, in part, from investments made at the top of the cycle (when margins are high and funds are available), thereby creating a demand-supply imbalance.
- The industry has experienced periods of overcapacity, when new plants become operational, and there can be no assurance that this will not recur in the future.
- In the absence of sufficient economic growth to generate increased demand, or the closure of facilities to mitigate the effect, new capacity causes a period of regional or global overcapacity which may lead to downward pressure on profit margins.

Risk Mitigation Actions:

- Portfolio diversification, adding high value-added products, recycled products, etc., to generate customer loyalty and differentiation.

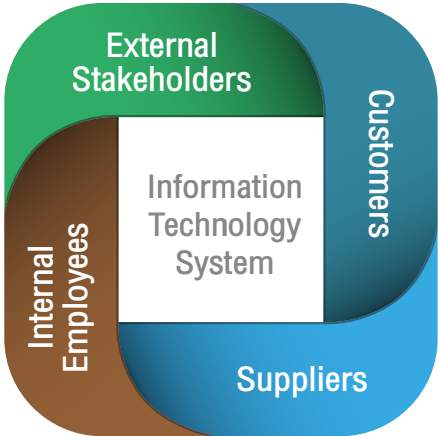
3.3 Operational Risks

3.3.1 IT system failures due to internal factors and external cyber threats could lead to significant operational, financial, and reputational damage.

We rely extensively on information technology systems (“IT Systems”), including some which are managed, hosted, provided and/or used by third parties and their vendors, in order to conduct our business.

Our uses of these systems include, but are not limited to:

- communicating within our company and with other parties, including our customers.
- ordering and managing materials from suppliers.
- converting materials to finished products.
- receiving and processing orders from and shipping products to our customers.
- marketing products to customers.
- collecting and storing customer, employee, investor and other stakeholder information and personal data.
- processing transactions, including but not limited to employee payroll, employee benefits and payments to customers and vendors.
- hosting, processing and sharing confidential and proprietary research, business plans and financial information.
- complying with legal, regulatory and tax requirements.
- providing data security.
- handling other processes involved in managing our business.



Any systemic failure for whatever reason could disrupt our operations and prevent us from being able to process transactions with our customers, operate our manufacturing facilities, prepare internal MIS reports and properly report those transactions in a timely manner. A significant, protracted IT system failure may result in a materially adverse effect on our financial condition, operational results, or cash flow.

Although we have a broad array of information security measures in place, our IT Systems, including those of third-party service providers with whom we have contracted, have been, and will likely continue to be, subject to computer viruses or other malicious codes, unauthorized access attempts, phishing and other cyber-attacks.

In general, cyber-attacks and other cyber incidents are occurring more frequently; constantly evolving in nature; becoming more sophisticated and conducted by groups and individuals with a wide range of expertise and motives.

Such cyber-attacks and cyber incidents can take many forms, including cyber extortion, password theft or introduction of viruses or malware, such as ransomware through phishing emails. We cannot guarantee that our security efforts will prevent breaches or breakdowns of our IT Systems or those of our third-party service providers since the techniques used in these attacks change frequently and may be difficult to detect for periods of time. In addition, although we have policies and procedures in place to ensure that all personal information collected by us or our third-party service providers is securely maintained, data breaches due to human error or intentional or unintentional conduct have occurred and will likely continue to occur.

Although we have seen no material impact on our business operations from the cyber-security attacks and data breaches we have experienced to date, we may suffer a loss or disclosure of confidential business or stakeholder information as a result of a breach of our IT Systems, including those of third-party service providers with whom we have contracted. Moreover, we may suffer reputational, competitive and/or business harm; incur significant costs, and be subject to government investigations, litigation, fines and/or damages, which may adversely impact our business, results of operations, cash flows and financial condition.

Furthermore, while we have disaster recovery and business continuity plans in place, if our IT Systems are damaged, breached or cease to function properly for any reason, including the poor performance of, failure of, or cyber-attack on third-party service providers, catastrophic events, power outages, cyber-security breaches, network outages, failed upgrades or other similar events, and if the disaster recovery and business continuity plans do not effectively resolve such issues on a timely basis, we may suffer interruptions in our ability to manage or conduct our business.

Risk Mitigation Actions:

- 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).

- Network segmentation is planned to keep users, servers, and applications on different network segments and to pass inter-segment traffic through firewalls.
- 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 in order 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 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.

3.3.2 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.

The possibility of human error within an operational environment is inevitable. These errors can be grouped into two main categories: skill-based errors and decision-based errors. Skill-based human errors involve missteps or lapses in judgement, essentially small mistakes while performing routine tasks. Here, the user understands the proper course of action, but due to temporary negligence, fails to properly complete the task(s) as assigned. On the other hand, decision-based

human errors occur when a user makes a faulty or incorrect decision. These errors may be caused by several different factors including lack of knowledge, not fully understanding the specific circumstance, or not realizing that their inaction is causing a mistake.

Another vulnerability to OT comes from data exposure in business IT networks. The practice of mergers and acquisitions requires adopting many different network architectures under the IVL umbrella. Many of these networks are designed outside of best practices and have the potential to cause significant data loss or disruption. OT networks that reside directly on the same network as business IT or have the ability to connect directly to the internet are inherently insecure. IVL's OT networks aim to follow the approved networking standard, the Purdue Model Network Architecture for Industrial Control Systems. The Purdue Model, which identifies network levels from 0-5 and what devices should be contained within each of those levels, was designed to protect OT data confidentiality, integrity, and accessibility.

Risk Mitigation Action:

- IVL adopted the IEC 62443 International Cybersecurity Framework as the standard for OT environments. Our goal is that each site implement, at a minimum, IEC 62443 Security Level 2 (SL2) control measures by the end of 2023. These control measures are designed to prevent human error exploitations by implementing engineering controls.
- A corporate cybersecurity management system (CSMS) will be developed to outline the specific requirements for OT networks, such as the recommended network design, patching cadence, backup schemas, and remote connectivity requirements.

3.3.3 Our production facilities are subject to operational risks that may adversely affect our operations

We are dependent on the continued operation of our production facilities, which are subject to hazards associated with the manufacturing, handling, storage and transportation of chemical materials and products. These include pipeline leaks and ruptures; explosions, fires, inclement weather and natural disasters; mechanical failures, unscheduled downtime, labor difficulties, transportation interruptions, remediation complications, chemical spills, discharges or releases of toxic or hazardous substances or gases, storage tank leaks and other environmental risks.

- These hazards can cause personal injury and loss of life, severe damage to, or destruction of, property and equipment, environmental damage, fines and liabilities.
- In 2020, our Indorama Ventures Olefins (IVOL) manufacturing facility in the US experienced a lightning strike resulting in significant property damage. In 2021, the facility returned to service having completed the restoration and mitigation work.

Risk Mitigation Actions:

- Since the lightning event, we completed a lightning mitigation survey at each of our locations globally. Lightning strikes cannot be predicted, and while the risk of a strike can never be completely eliminated, protections can provide significant mitigations. Gaps were closed at our facilities where lightning protection was found to be inadequate.
- A review was completed of the previous Process Hazard Analysis (PHA), Hazard Operation Analysis (HAZOP) and Layer of Protection Analysis (LOPA), while the Safety Instrumented System (SIS) was enhanced to mitigate identified risks.
- Facilities that are pre-disposed geographically to risks of hurricanes have detailed plans in place that include bringing operations to a safe state, preparing buildings, securing any items that can take flight in high winds, identifying alternative power sources where available, readying the workforce and appointing ride out crews.

Other General Risk Mitigation Actions:

- Ensuring readiness by having emergency evacuation procedures and mock drills for catastrophes internally and Emergency Response Teams.
- Regular reviews of safety equipment onsite and annual training programs on safe work practices are conducted for the awareness of all concerned.
- All new employees, contractors and visitors are given mandatory safety training before they are allowed to enter the factory premises.
- We conduct regular inspections, preventive maintenance and the replacement of obsolete parts or equipment to avoid breakdown incidences at production facilities.
- We closely monitor plant stocks as per inventory norms thus planning to ensure the continuous availability of required materials.

3.3.4 Failure to comply with environmental, process and occupational safety requirements may incur costs and liabilities.

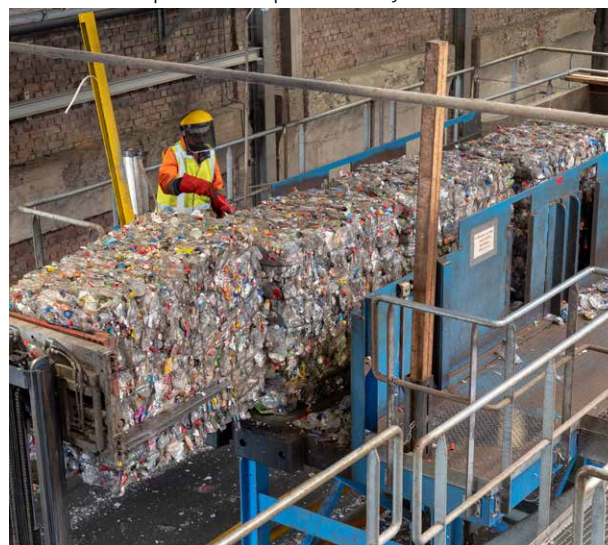
As demand increases for improved health, safety and well-being, we are adopting a risk-based approach considering all areas of risk including legislative requirements, the capacity of employees, and the potential hazards from manufacturing activities.

Risk Mitigation Actions:

We have undertaken the following mitigation actions in this area such as:

- Revision of our EHS policy to better align it with our vision, values, and guiding principles.
- Creation of 'Golden Safety Rules' to raise awareness and reduce the risk of life threatening or impacting events. Each rule is accompanied by full prescriptive procedures that define the Company's standards.

- Several key initiatives were developed to reduce the frequency and severity of life impacting incidents such as the Injury and Illness Prevention Program (I2P2) which systematically analyzes incident trends and implements controls to reduce the most frequent types of cases.
- Standardization efforts were launched centered on creating governing standards to report incidents and manage risks for both occupational and process safety.



3.3.5 We may not be able to respond fast enough to climate change-related risks – ranging from physical (water crisis), direct (cost of carbon) and indirect (cost of renewable energy), or to climate change legislation and other related changes in our operations, value chains and end markets.

Climate change is inevitable and 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. As of December 31, 2021, IVL had 112 operating sites in 33 countries (excluding joint ventures and entities acquired or operations commenced on or after July 1, 2021). 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 produce more energy efficient, less carbon intensive products for climate protection in the long-term.

- **Physical:** Extreme weather events, increasing frequency and severity of floods, droughts, cyclones, etc., may impact our operations and supply chain.
- **Changing Consumer Preferences:** Changing consumption patterns leading to increased demand for environmentally friendly products and 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.

Management has nominated a senior executive at the corporate level 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; adherence to GHG reduction goals and targets as defined and disclosed in our Sustainability Reports and website.

We have also participated in assessments for the Dow Jones Sustainability Indices (DJSI), CDP's climate change report, MSCI, Sustainalytics, FTSE and other external sustainability assessments in 2021. These help us to:

- Identify financial implications and potential savings opportunities.
- Prepare for changes in regulations.
- An internal carbon price (ICP) is a value that companies voluntarily set for themselves in order to internalize the economic cost of their greenhouse gas emissions. We considered the IEA 450 scenario for financial 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.
- Increase our focus on renewable and low-carbon energy.
- Reduce our carbon footprint in all our operations through life cycle assessments and management, greenhouse gas accounting, energy and environmental management.

- Produce low carbon products, improve operational eco-efficiency within our operations and value chain, lowering product toxicity.
- Follow the TCFD's recommendations, conduct water risk assessment globally in all our operations and initiate water management.
- Lightweight our products.
- 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 communicate on an ongoing basis 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 a water sensitivity analysis using the AQUEDUCT Water Risk tool developed by the World Resources Institute to identify water stress locations. This tool helps us evaluate changes in water demand, water supply, risks from stakeholders and changes in regulations based on current and future conditions. We assessed our water risk for 2021 with forecasts for 2030. These results are analyzed and discussed during meetings held by the Risk Assessment Committee to identify necessary mitigation measures or initiatives on a quarterly basis, with a focus on plants in areas facing high risks of water stress or locations with significant risks to water usage.
- We evaluate the potential and options to reduce water consumption, increase the recycling and reuse of wastewater, and collecting 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 and Corporate Social Responsibility section in our Annual Report 2021 and Sustainability Report 2021 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. Increasing innovation and the production of low-carbon products can further allow us to become a preferred company on the part of our customers and consumers, which also brings financial gains by lowering the overall cost of production. Possible climate change opportunities include:

- Tax incentives for increased use of renewable energy.
- Tax incentives for increased recycling of PET waste; 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. IVL has multiple sustainable financial instruments:
 - Thailand's first-ever sustainability-linked loan (issued by Mizuho Bank for USD 200m and EUR 200m), with an interest margin adjustment tied to our DJSI rating.
 - Sustainability-linked Ninja loan (issued by 16 Japan-based banks and institutions for USD 255m) with an interest margin tied to our DJSI rating.
 - Blue loan for USD 300m was provided by multiple intergovernmental institutions. The International Finance Corporation ("IFC") provided the equivalent of up to USD 150m, the Asian Development Bank ("ADB") and ADB Leap Loan provided a total of up to USD 100m, and Deutsche Investitions and Entwicklungsgesellschaft ("DEG") provided up to USD 50m. This loan is only usable for recycling investments in developing countries.
 - Sustainability-linked bond (SLB) for USD 300m equivalent in 5, 7, and 10.5-year tranches, tied to IVL's GHG intensity, recycling, and renewable energy targets. Failure to achieve the relevant targets will trigger a financial penalty.
- An enhanced reputation as an environmentally friendly company through increased levels of recycling.
- Becoming the preferred company to our consumers – a strong performance through a reduced carbon footprint is now a competitive advantage.

3.3.6 Given the evolving situation with COVID-19, the company may be adversely impacted by supply chain disruptions and economic uncertainties.

The emergence of the coronavirus disease, known as COVID-19, has led to disruptions in many countries and a global economic slowdown not seen since before the Second World War. The developments

surrounding the spread, containment, evolving variants and efficacy of vaccines may continue to present uncertainties in the future.

The COVID-19 pandemic has tested our internal processes in ensuring the safety and well-being of our employees across all levels, from the shop floor to the Board of Directors.

Risk Mitigation Actions:

Our capability and presence worldwide as one of the leading petrochemical producers in more than 30 countries has helped us mitigate supply chain risks. Leveraging our facilities and networks allowed us to deliver products to our customers as a dependable partner, even in this time of uncertainty.

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.

We have eliminated business travel, postponed, or cancelled 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. Our teams are working closely to follow the guidelines in line with local authorities. We remain vigilant and ready to adjust our measures in response to changing circumstances. Face coverings and social distancing have become the norm at all of our facilities globally.

Business Continuity

Our Indorama Management Council is closely monitoring the situation at the corporate level. We have a business continuity team, consisting of IVL leaders across functions and businesses, that monitors any pandemic spin-off risks in their respective areas 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 in regard to 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 such as travel restrictions for employees, pre-screening and the restriction of visitors to our manufacturing sites, offices, etc.

Measures have been put in place for the procurement of sufficient raw materials and additives, and logistics 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.

Nevertheless, there is continued uncertainty at this point and how far the new normal will impact the world overall, both in the short and medium-term, remains to be seen. We expect the situation to remain dynamic and will therefore be agile and ready to act globally. The health and safety of our employees is our number one priority, and we will do all we can to take care of our customers.

3.4 Management Risks

3.4.1 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.

- As part of our strategy, we may seek further growth through acquisitions of manufacturing facilities producing PTA, PET, fibers, oxides and glycols or other products in our product chain to maintain or enhance our competitive position.
- Unidentified or unanticipated liabilities or risks in the operations of the companies which we may acquire.
- Potential failure to achieve the sought-after economies of scale, synergies or other benefits.
- Greater than expected costs, time and effort spent by management in completing and integrating the acquisitions.
- Inability to successfully integrate the services, products and personnel of the acquisitions into our operations or the inability to realize any expected cost-savings or other synergies from the acquisitions.
- Inability to retain employees, customer or supplier relationships.
- Lack of return on our investment.

We may not be able to identify attractive acquisition opportunities, make acquisitions on attractive terms, or obtain the financing necessary to complete and achieve such acquisitions. Regulations on mergers and acquisitions by the European Union, the United States, Thailand or other national regulators may also limit our ability to make future acquisitions or mergers.

Risk Mitigation Actions: We conduct detailed due diligence for acquisitions and seek appropriate production in the acquisition agreement.

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

The Lohia family holds around 64.77% 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 an equal 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.

3.5 Financial Risks

3.5.1 Significant capital investments, including the future development of new facilities have been, and may in the future continue to be necessary to achieve our growth plans, which carry project and other risks.

Our growth plans require, and may continue to require, significant capital investments to expand, renovate, convert or upgrade existing facilities, develop new facilities or make major acquisitions or investments.

- Failure to complete a project within the outlined project timetable and/or within budget.
- Failure of the project to perform according to prescribed operating specifications following its completion.
- Any significant increase in costs that were unforeseen in the project plan, and any inability to sell the products produced at volumes and/or price levels envisaged in the project plan could affect the success of our projects.
- Due to the significant amount of capital required and the long time period between the planning and completion of such projects, project delays could have an effect on our business and future prospects.
- Acquired businesses may not achieve the required level of revenue, profit, cash flow or other financial benchmarks.
- Acquisitions may involve risks associated with the potential assumption of unanticipated liabilities and contingencies; difficulties in integrating acquired businesses and achieving planned operational synergies.
- While our strategy is to acquire businesses that will improve our competitiveness and profitability, acquisitions may not be successful or accretive to earnings.

Risk Mitigation Actions: 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.

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

- Given our global operations, changes in foreign currency rates could have an adverse impact on our business, financial condition, prospects and operational results. Currency fluctuations affect us because of mismatches between the currencies in which operating costs are incurred and those in which revenues are received. We sell products that are typically priced by reference to prices in US dollars or euros, while a

portion of operating costs are incurred in local currencies.

- Floating interest rates are impacted by macroeconomic conditions and the monetary policy of each region. Interest rate risk is the risk that future movements in market interest rates will affect the results of our operations and cash flows.
- Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations to the Company as and when they fall due.
- Our reported earnings may also be affected by fluctuations between the baht, which is our reporting currency, and the reported results in non-baht currencies of some of our overseas subsidiaries.

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 cashflows 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. At the end of 31 December 2021, 68% 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. More than a 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.

3.5.3 IVL is a holding company and dependent on the receipt of dividends to make dividend payments on our shares.

- As a holding company, we are dependent on the receipt of dividends from our subsidiaries and associated companies, for which payment will depend on their future financial performance. This, in turn, depends on successfully implementing their strategies as well as on financial, competitive, regulatory, technical and other factors; general economic conditions, demand and selling prices for their products, and other factors specific to their respective industries or specific projects, many of which are beyond our control.
- The subsidiaries have dividend policies to not pay over 80% of net profit after tax and legal reserves. However, the board of those subsidiaries will approve dividends paid from time to time by considering some factors, i.e. cash reserved for loan repayments; investment expansion, or to support the Company's cash flow in case of impacts by changes in market conditions.
- The ability of our direct and indirect subsidiaries to pay dividends to their shareholders, including IVL, is subject to applicable laws.
- Although we intend to pay dividends with respect to shares, our ability to pay dividends in the future will depend on a decision by the Board of Directors and/or the approval of shareholders at a general meeting; the results of operations; as well as cash flows; financial conditions; contractual restrictions and restrictions imposed by applicable laws and other factors which the Board of Directors deems relevant.

Risk Mitigation Actions:

- IVL received dividend income of THB 7.36 billion in the year 2021 from its direct and indirect subsidiaries while it paid dividends of THB 5.19 billion to its shareholders. The dividend received is 1.42 times the dividend paid. At the end of the year 2021, the retained earnings have increased to THB 21.45 billion from THB 19.20 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 cashflow plan into consideration for the payment of dividends.

3.5.4 Risk that the Company cannot comply with debt covenants.

IVL and its subsidiaries has total outstanding debts of THB 224.23 billion at the end of 2021. 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 2021 is around 1.22 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 2021 is THB 171.00 billion (including perpetual debentures of THB 14.90 billion). In addition, syndicated bank loans at regional level and subsidiaries have standalone financing which are required to meet financial obligations and comply with financial covenants.

In September 2021, the domestic credit rating of IVL was re-affirmed at AA- by TRIS. IVL would like to maintain a business profile and financial profile which maintains or enhances its credit rating profile.

Risk Mitigation Actions:

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 the 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, cashflows and covenants on a quarterly basis.

3.6 Compliance & Legal Risks

3.6.1 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.

- We operate in many industries where our competitors have substantial intellectual property portfolios. As we expand into new industries adjacent to our core businesses, the risk of intellectual property infringement increases both on a quantitative basis and unknown qualitative basis. The continued success of this business depends on our ability not only to protect our own technologies and trade secrets, and integrate new intellectual property, but to also develop and sell new products that do not infringe on existing patents or threaten existing customer relationships.
- Intellectual property litigation can be very costly and could result in substantial expense and diversions of resources, both of which could adversely affect our businesses, financial conditions and results.

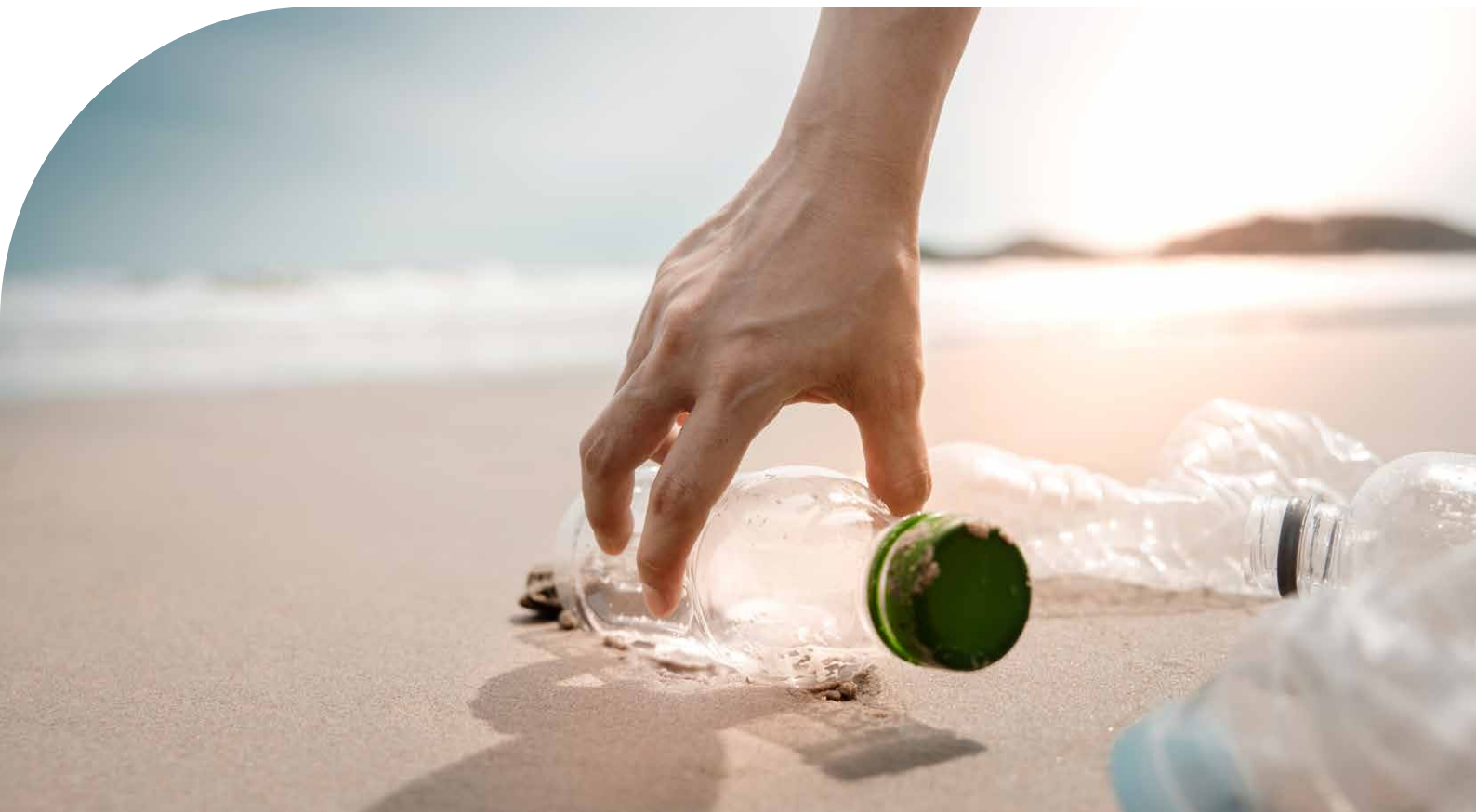
- There may be no effective legal recourse against the infringement of our intellectual property by third parties, whether due to limitations on the enforcement of rights in foreign jurisdictions or as a result of other factors.
- An unfavorable outcome in any intellectual property litigation could have a materially adverse effect on our financial condition.

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.

3.6.2 We may be subjected to an increased regulatory environment and compliance of applicable policies and laws covering environmental, anti-corruption and data privacy regulations which could lead to a potential increase in the cost of compliance and risk of reputational damage.

- Our operations are subject to environmental laws and regulations by central and local authorities in the countries where we operate. These requirements are complex, subject to frequent changes and have tended to become more stringent over time. As we expand into new industries and new geographic areas adjacent to our core businesses, the regulatory risk we face increases.
- The continued success of this business depends on our ability to operate in compliance with international and local laws/regulations, while also developing new policies which will require an encyclopedic knowledge of laws (environmental, anti-corruption, data privacy) across the world.
- Regulatory non-compliance in these areas can be very costly and could result in government sanctions, substantial expenses and diversions of resources, and reputational harm, all of which could adversely affect our businesses, financial conditions and results.
- We have incurred, and will continue to incur, costs and capital expenditures in complying with these laws and regulations and in obtaining and maintaining all necessary permits.

Risk Mitigation Actions: We have procedures in place to ensure we comply with laws and regulations; however, there can be no assurance that we will at all times be in compliance with all of our obligations in the future or that we will be able to obtain or renew all licenses, consents or other permits necessary to allow us to continue to operate our businesses. Any failure by us to comply with such laws and regulations could subject us to fines, penalties and other liabilities.



Business Drivers for Sustainability

Sustainability

IVL has continued to address pressing global challenges including climate change, reducing plastic waste, end of life management, population growth, increasing urbanization, new forms of mobility and the ongoing challenges due to COVID-19. By bringing together environmental, social and economic successes, we are contributing to a more resilient circular economy.

In addition, we have strengthened our platforms, empowered our people, and advanced our systems, putting us in a stronger position to take advantage of opportunities as the recovery takes hold, further unlocking our full potential to make the company future ready for the next era.

IVL remains committed to sustainability and continues to be recognized by rating agencies as a leader in the chemicals industry.

We are on track to meeting our 2025 global commitments on sustainability, including recycling, and set even more ambitious 2030 targets.

Sustainability in our Corporate Strategy

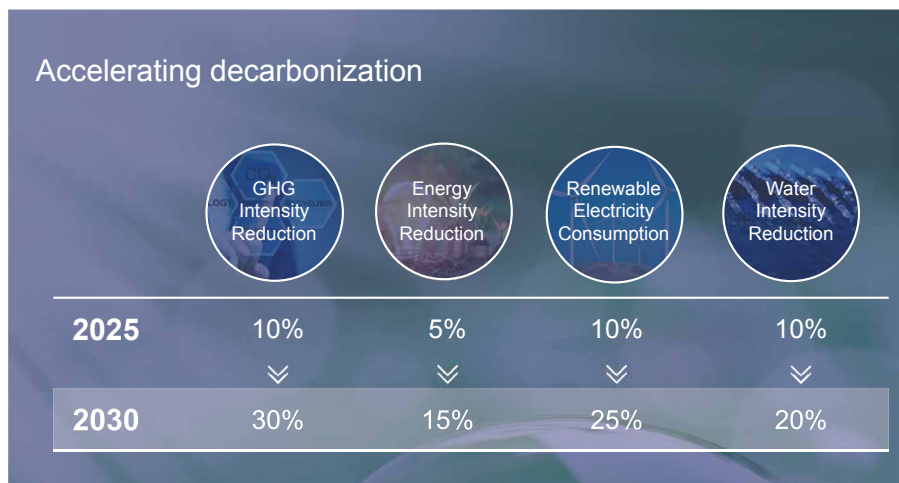
An integral part of IVL's purpose and strategic direction, sustainability is overseen by the Board of Directors, the Sustainability and Risk Management Committee (SRMC) (a sub-committee of the Board) and the Executive Leadership Team. Sustainability has always been a high priority and we are ramping up our efforts even further.

As one of our core corporate strategic levers, we are evolving our sustainability strategy to not only expand the boundaries of our work, but to further harness the dynamics of change to solve global challenges.

“Reimagining Chemistry Together to Create a Better World”

With our Vision ‘to be a world-class sustainable chemical company, making great products for society,’ we did a deep dive to further exemplify our purpose - ‘Reimagining Chemistry Together for Better Tomorrow’ which guides our business strategy and delivers substantial value towards our Vision 2030 plan. We believe that we can better balance our profit with our purpose through a more sustainable approach that brings about new competitive advantages and distinguishes our leading position in the market.

Ambitious 2030 Targets



To further accelerate our sustainability objectives, we announced our **new 2030 targets and commitments** putting us on a path to lower emissions and achieving our climate reduction goals. These new targets are aligned with and build on our 2025 Sustainability targets and will guide our efforts with a stronger focus and greater significance. We continue to expand our leadership position through substantial investments in sustainability and circularity and aim to amplify our positive impacts.

Formation of the ESG Council

A new Sustainability advisory group, the **ESG Council**, was formed in 2021 by the Indorama Management Council (IMC). The ESG Council serves as a complement to the organization’s efforts to expand our sustainability capabilities and improve our performance. The Council is also required to provide guidance utilizing the expertise of its members in performing any assigned duties and is comprised of designated multi-functional senior executives including Core Members plus Rotating Members who meet on a quarterly basis. In 2021, the ESG Council considered several important sustainability topics including sustainability benchmarking, product stewardship, Ocean Clean Sweep (OCS), and diversity & inclusion. The outcome and proposed next steps were reported to the IMC.

ESG Profile

Since 2010, IVL has been adopting ESG reporting, which gives us the opportunity to be transparent with stakeholders about our approach to environmental, social, and corporate governance topics. In addition to the GRI, Integrated Reporting <IR> Framework, and sustainability reporting standards and frameworks, we went further in our ESG reporting in 2021 by implementing the [ESG Profile](#), our new online platform that provides insightful and easily accessible information on IVL’s activities across environmental, social and governance dimensions in a variety of frameworks and guidelines on our website.

Sustainability Leadership and Commitments

At IVL, sustainability is at the forefront of our activities and we operate responsibly. Externally, we also engage with our partners in the value chain and with stakeholders to collectively solve important issues and challenges. We aim to set new standards for sustainability and make a difference in people’s lives while helping the planet through our expertise in product innovations and recycling.

We continue to encourage the public to have a better understanding of PET and recycling. To increase awareness, the “[PET Recycling: No time to waste](#)” article was published in TIME Magazine. In a circular economy, recycled plastic packaging is a solution, not a problem. In terms of the industry, the infrastructure is within our control

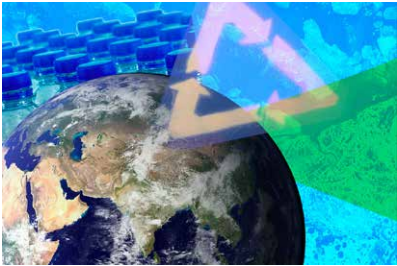
but building the infrastructure the world needs to deliver a circular economy for packaging is critical. Our GCEO, Mr. Alope Lohia, joined the [innovate4climate](#) 2021 event, organized by the World Bank explaining that circularity and climate change go hand in hand. The more PET bottles are recycled, the less GHG emissions are generated. At the [IFC Talks Climate](#): The private sector’s role in innovation for sustainability, he also discussed net-zero goals and adaptation to low-carbon transitions.

Our Chairman of ESG Council, Mr. Yash Lohia, also conveyed the important efforts being made by IVL on sustainability taking part in the Asia-Pacific Sustainability Conference 2021 organized by S&P Global Platts speaking about the current state and possible future of the recycled plastics landscape.



Collaborations: IVL x Suntory

Indorama Ventures, along with the Japan Bank for International Cooperation, are sponsoring partners of the Eurasia Group and Suntory Holdings’ “Sustainability Leaders Council.” The Council has an ambitious objective to create an action-oriented sustainability agenda for governments and the private sector, particularly in Asia, and help foster more resilient societies, reduce plastic waste, create economic value and build a more sustainable world.



Unlocking Sustainable Plastics in Asia

PREPARED BY EURASIA GROUP
OCTOBER 2021



The Council was launched in advance of the November 2021 COP 26 Summit, with a clear mission: to illuminate Asia as a leading force for change within the climate and sustainability discussion. The Council held a virtual summit in October 2021, which included the participation of IVL’s GCEO, Mr. Alope Lohia, and brought together global leaders from multilateral institutions, governments, and the private sector to create urgency, priorities, and blueprints for action around environmental sustainability.

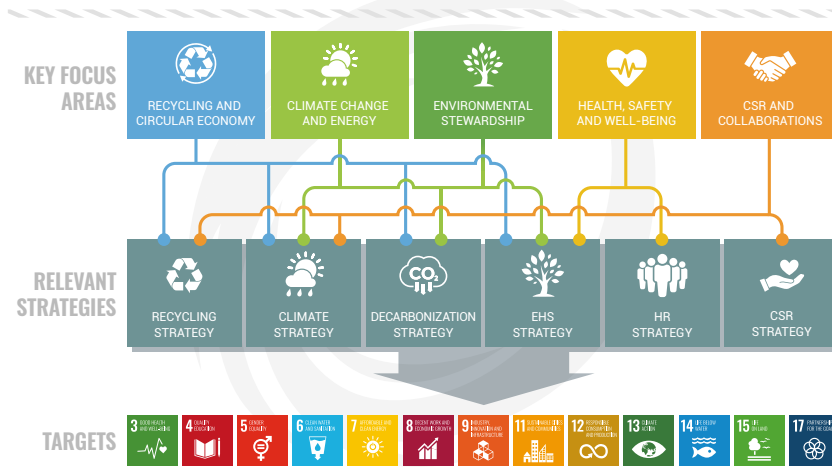
Anchoring the summit was a new research report, “[Unlocking Sustainable Plastics in Asia](#),” which advocates for a more dynamic role for both the public and private sectors in Asia to counter the mismanagement of plastic waste.

Sustainable Development Goals (SDGs)

We have embedded the principles of the SDGs in our business operations. Our constructive role, direct and indirect sustainability initiatives, and operations are contributing to their achievement. We believe that our collective commitment and synergies can drive global sustainable growth and an economic recovery helping transition to a more sustainable path – now and for future generations.

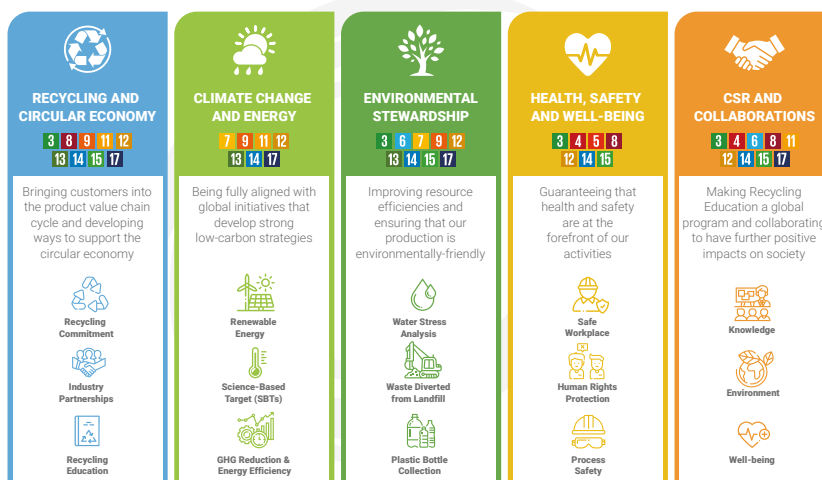
The progress we have made in our contributions to the SDGs has been monitored throughout the year and publicly reported in our SDGs Report, Sustainability Report 2021 and in the [SDGs section](#) on our website.

IVL'S SDGs STRATEGY



KEY FOCUS AREAS

We continue to create value and contribute to the SDGs by focusing on the 3Ps – People, Planet and Prosperity.

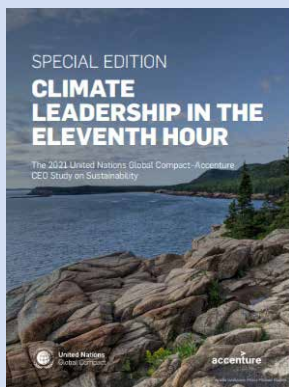


We introduced **the first independent SDGs Report developed by the private sector in Thailand** in 2021. This report details our sustainability strategy, which is aligned with the SDGs, and presents the progress we are making towards their achievement. We outlined five focus areas which are contributing to the SDGs: Recycling and the Circular Economy; Climate Change and Energy; Environmental Stewardship; Health, Safety and Well-being; and CSR and Collaborations. We believe these areas are where we can have the greatest impact while also growing our business and bringing about constructive change. Activities in these five areas help IVL align with 13 of the 17 SDGs, totalling 39 targets. We recognize that the SDGs are vital to building a better and more sustainable future for all people and the world and we are doing our part as a responsible corporate citizen.

IVL and the UN Global Compact (UNGC)

Having been a signatory and engaged with the UN Global Compact (UNGC) since 2019, we embrace its core values and are implementing a robust strategy that supports its 10 principles in addition to publishing the Communications on Progress (COP) annually which is available in our 2021 Sustainability Report and on the UNGC website. We continue to support and recognize the important work being done by the UNGC on the SDGs and climate change.

Our GCEO shared his perspective in the special edition of [“Climate Leadership in the Eleventh Hour.”](#) The 2021 United Nations Global Compact–Accenture CEO Study on Sustainability.



“Few plastic industry players are confident in recycling investments because the technology is not fully developed, and it is unclear who will own the cost.”

Aloke Lohia
Group Chief Executive Officer
Indorama Ventures Public Company Limited

We participate each year in the Global Compact Network Thailand (GCNT) Forum. We jointly declared our commitment to achieving net-zero carbon by 2050, or no later than 2070, with other leading companies and the private sector in Thailand, at the GCNT Forum 2021: Thailand’s Climate Leadership Summit 2021 which adopted the theme of “A New Era of Accelerated Actions.” Moreover, we participated in the GCNT’s TV program, “We Shift... World Change” which gathered together the ideas, initiatives, business directions and experiences of leading companies that are working towards putting the SDGs into action. The program encourages increased sustainable development by providing the private sector’s practices from various perspectives. Indorama Ventures presented its Recycling Education program and how this is contributing to creating a circular economy for future generations.

Advocacy

We are contributing to sustainability resilience more broadly, in both industry and society, through a focused set of initiatives and by working with strategic partners and associations on voluntary projects on a global scale which tackle plastic recycling, the mismanagement of plastic waste and climate change. Our engagement with industry and trade associations further helps us in our policy advocacy efforts and in driving transformational change. We present our positions to policymakers and other interested parties in accordance with national and international laws.

Over the past few years, there has been increasing stakeholder interest in the role being played by industry associations in public policy debates, particularly in the context of plastic recycling and the mismanagement of plastic waste. These collaborations are aligned with our long-term sustainability objectives and can further our commitment to increase volumes of Post-consumer PET bale input by at least 750,000 tons. IVL pledged USD 1.5 billion towards achieving this target by 2025.

We actively participate in **legislative engagements** with industry associations to support positive change and sustainable practices. One of our key ambitions is our intention to work with the Committee

of PET Manufacturers in Europe (CPME) on the **EU’s non-recycled plastic packaging waste contribution.**

In addition, we will work with various associations that represent the plastic sector to develop a protocol on policy advocacy. We intend to define the policy areas, and build and improve public perceptions of PET, which is a fully circular, recyclable plastic with a lower carbon footprint than other packaging materials such as glass and aluminium. We actively communicate with political actors and consumers about the recyclability and sustainability of PET through strategic partners including the **Global Plastic Action Partnership (GPAP), PET Container Recycling Europe (PETCORE), National Association for PET Container Resources (NAPCOR), and The Recycling Partnership.**

We are part of the New Plastics Economy Global Commitment, led by the Ellen MacArthur Foundation, in collaboration with the UN Environment Programme. The Global Commitment has united more than 500 organizations behind a common vision of a circular economy for plastics. Driven by the goal of tackling the plastic problem at its source, companies have committed to ambitious 2025 targets. This third annual progress report looked at how these signatories are faring against these targets and praised Indorama Ventures for “significant progress.” The report noted how IVL’s recycling capacity grew by 15%, an increase of 9% from the previous year.

We also joined the Ellen McArthur Foundation and over 100 leading businesses in calling for Extended Producer Responsibility (EPR) for packaging. This statement recognizes EPR as a proven way to provide funding for the collection, sorting and recycling of packaging waste.

To further catalyze our actions, we increased our presence at various global events and with important organizations throughout the year to improve public perceptions of PET, including the World Economic Forum, UNGC Leadership Summit, Thailand Business Leadership for SDGs, Climate 50 Leaders, interviews with Bloomberg News, and by joining PET recycling and rPET roundtables with Morgan Stanley and JP Morgan.

Sustainable Finance

Sustainable finance represents a significant opportunity for IVL, with many multinational lenders and asset managers becoming signatories to the United Nations Principles for Responsible Investment (UNPRI) and United Nations Principles for Responsible Banking (UNPRB). Financial institutions are integrating ESG into the investment process. IVL is a global leader on ESG integration and was able to secure over USD 1 billion in sustainable financing as of the end of 2021, which includes:

1. Thailand's first green loan from Japan's Mizuho Bank for both USD 200m and EUR 200m linked to IVL's ESG rating.
2. A syndicated ESG loan for USD 255m arranged by Mizuho Bank linked to IVL's ESG rating.
3. A blue loan for USD 300m to increase recycling in developing countries, arranged by the International Finance Corporation (IFC). Sources of the funds are as follows:
 - International Finance Corporation (IFC): USD 150m
 - Asian Development Bank (ADB): USD 100m
 - Deutsche Investitions-und Entwicklungsgesellschaft (DEG): USD 50m
4. Thailand's largest Sustainability-Linked Bond (SLB) and the first offered to both institutions and high-net-worth investors for THB 10 billion. This innovative financial instrument is linked to the company's key performance indicators (KPIs) and sustainability performance targets (SPTs).

Indorama Ventures issues THB **10** billion **Sustainability-Linked Bond** with three Sustainability Performance Targets

- Reducing GHG emissions intensity** by 10% by 2025 (from a 2020 base)
- Increasing recycling of PET bale input** to 750,000 tons per year by 2025
- Achieving 25% renewable electricity consumption** in 2030

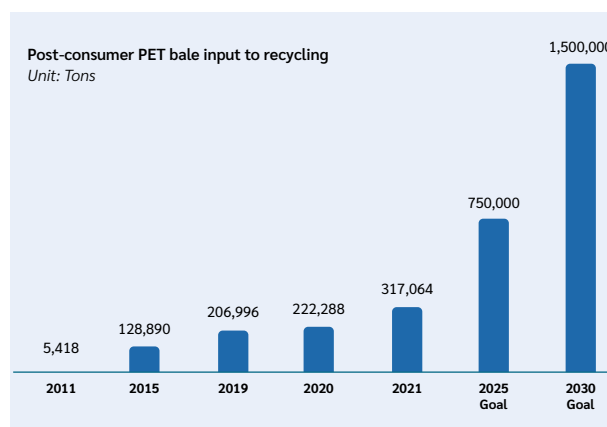
INDORAMA
VENTURES

The issuance of all loans and bonds reflects our long-standing commitment to sustainability, supports our sustainability commitments as a business and emphasizes our fiscal responsibility through sustainable finance. Learn more about our [Sustainability-Linked Finance Framework](#).

PET Recycling and Plastic Waste

The recycling of PET is a key pillar of a future circular economy and a new engine for growth, and is one of the most responsible solutions for the preservation of resources and the reduction of PET containers in landfills. We are doing our part by investing in recycling solutions around the world. Our recycling strategy is focused on strengthening our capability to increase recycling rates globally, contributing to a circular economy, and ensuring a fully closed loop. We will build on our leadership position as the largest virgin PET producer and remain a leader in rPET. We are increasing our investments in recycling plants and committed USD 1.5 billion towards our sustainability objectives, encouraging the responsible end-use of recycled PET and delivering a circular economy for beverage packaging.

Moreover, IVL's target of 750,000 tons of Post-consumer PET bale input for recycling in 2025 represents a significant increase in the volume of PET recycling inputs and a plan to scale-up our sustainability objectives. We are working with several industry partners to achieve a circular economy for sustainable plastics. We have acquired proprietary knowledge of mechanical recycling and developed partnerships with innovative players to develop and test next-generation chemical recycling technologies. IVL currently operates 16 recycling plants worldwide, with one acquisition in 2021: Indorama Ventures Sustainable Recycling (USA). These new investments strengthen our 2025 commitment by providing significant support to boosting global plastic collection rates and making increased recycling a reality.



This commitment is just the start of our journey in generating value from gathered post-industrial and post-consumer PET from numerous sources, not just limited to bottle-deposits or curbside collection alone and promoting zero plastic in the environment.

In addition to accelerating our recycling business, our responsible initiatives are a key element in preventing plastic waste from entering the environment. One example is Operation Clean Sweep (OCS), an initiative that focuses on preventing plastic pellets, flakes and powder loss from entering waterways and oceans. In 2021, one of our subsidiaries, FiberVisions Varde (Denmark) was certified by OCS. We have introduced additional global measures to our operations and are further reviewing how to make OCS initiatives and goals part of the sustainability issues covered by business partners.

Deja™- Closing the loop to be fully sustainable

We are expanding our portfolio of sustainable solutions under the **Deja™** platform, our global sustainable ingredients brand as a key part of our commitment to meeting growing demand for innovative, high performance products which will reduce environmental impacts.



Deja™ was inspired by IVL's Vision, to be a world-class sustainable chemical company making great products for society, underscored by an ambitious target of achieving 25% renewable electricity from total power consumption by 2030. To achieve this, we have pledged USD 1.5 billion towards meeting our sustainability targets. Deja™ fiber and polymer products offer high performance and versatility, with a lower carbon footprint and can be applied to a wide range of applications across the hygiene, lifestyle, automotive and packaging sectors, while meeting the exacting standards demanded by these specialist sectors.

Deja™ Carbon Neutral PET

The latest innovation under Deja™ is the world's first certified carbon neutral PET pellet. Deja™ Carbon Neutral PET was launched on Earth Day in 2021. It is designed to support customers meeting new regulations that require increased recyclability and a reduced carbon footprint. These pellets have been sustainably produced and help environmentally conscious companies achieve their own eco-targets by lowering their Scope 3 greenhouse gas emissions. The production process has neutral raw material emissions, from cradle to IVL's plant gates. Globally established providers independently verify the product's carbon neutral certification. These carbon neutral pellets are fully traceable (meaning every step along the supply chain is visible and scrutinized) and certified for food-grade packaging applications

Through a partnership with South Pole, a leading project developer and provider of global climate solutions, IVL offsets unavoidable carbon emissions through projects like water or forestry stewardship, which help transform lives and protect the environment.

Climate Resiliency

Along with other private-sector companies, governments and non-governmental organizations, we strongly support a global implementation of the results of the 21st UN Climate Change Conference and are committed to the SDGs.

As IVL's operations continue to grow and expand, the more complex nature of our business means we must be equipped to strengthen our sustainability climate foundation. This involved sharpening the focus of our portfolios and providing clearer processes on decarbonization so that we are better aligned in our future actions, direction while at the same time capable of adapting to the fast pace of regulatory changes. To further accelerate our actions, a **Decarbonization Committee** was formed to disseminate the strategic direction and goals to drive efficiency, cost avoidance and atmospheric carbon emissions reductions across our operations. The committee comprises experienced representatives from all businesses and will work closely with the respective Chief Technical Officer (CTO) of each business. This committee is responsible for the integration of decarbonization in IVL's business strategies and innovation pipeline to deliver GHG reductions that meet the corporate targets, and is also responsible for embedding a strong internal foundation of decarbonization business practices.

Task Force on Climate-related Financial Disclosures (TCFD)

IVL continued to adopt the recommendations of the **Task Force on Climate-related Financial Disclosures (TCFD) for two consecutive years**. Using the TCFD framework, we provide a progress update across each of the TCFD pillars: Governance, Strategy, Risk Management, and Metrics and Targets. These topics align to the TCFD's recommended disclosures and provide a comprehensive view into how we understand and manage the risks and opportunities associated with climate change at IVL. The report demonstrates our commitment to providing meaningful transparency in our approach to managing climate-related risks and opportunities across our businesses. Further in-depth analysis is available in our [TCFD Report](#).

In 2021, we rolled-out **Decarbonization Standard Operating Procedures (SOPs)** at the global level to implement the first strategic chapter. This program is setting the direction of our resource efficiency program and reviews environmental sustainability performance. We intend to develop solutions that reduce both our environmental impacts and the related costs at our operations enterprise-wide. Contributions will come from operational eco-efficiency, the use

of renewable energy, low intensive fuel consumption, supply chain management, and product stewardship.

A group call with 20 of the highest emitting sites was set-up individually to understand what's happening on the ground, current green projects and the potential for additional projects.



To accelerate our GHG and energy reduction commitments, we established **new 2030 targets** in parallel with our current 2025 targets:

- 30% GHG intensity reduction (2020 base year)
- 15% energy intensity reduction (2020 base year)
- 25% renewable electricity use
- 20% water intensity reduction (2020 base year)
- Continue a 90% waste diversion rate from landfill from 2025 onwards

Decarbonization pathways

This objective is supported by our **six-pronged Decarbonization pathways**:

- **Bio-based feedstock:** Invest in biomass-based raw materials: bio-PX, bio-ethylene, natural alcohol, chemical & biological recycling.
- **Energy and process efficiency (green projects):** Invest in operational and energy efficiencies to reduce GHG emissions, energy and water consumption.
- **Renewable energy:** Decarbonize IVL's energy consumption via onsite and offsite renewable energy and phase out from coal.
- **Mechanical and advanced recycling expansion:** Invest in and expand recycling facilities to address plastic pollution and reduce lifecycle carbon emissions.
- **Future technologies:** Explore opportunities for Carbon Capture Utilization and Storage (CCUS) and green hydrogen.
- **Natural Capital Solutions (NCS):** Invest in carbon offsetting projects including forest preservation, restoration, and anti-deforestation.

Bio-based Feedstock: We have the responsibility and opportunity to act and lead the industry in areas where our expertise can make a difference. Feedstock management is a key element in decarbonizing our products through biomass. Our new commitment is a USD 4.7 billion investment to increase biomass feedstock to 2.4 MT by 2030. We are delivering on our commitment to improve the sustainability footprint of our product portfolio, moving towards a circular and bio-based economy. This new paradigm underlines our commitment to driving the transition of our operation from conventional to renewable resources while supporting the ambitions of our business partners along the sustainable value chain.

Renewable electricity: Our commitment to increasing the use of renewables is to source 10% of our electricity from renewable sources by 2025 and 25% by 2030. In 2021, we made significant progress towards our purchased renewable electricity target. The percentage of purchased electricity from renewable sources increased globally from 2.89% in 2020 to over 7% in 2021.

Our progress on purchased renewable electricity: Throughout 2021 and continuing into 2022, we are adopting long-term innovation roadmaps to plan pathways towards net-zero emissions in the coming decades. In 2021, we hired a consultant to help procure renewable electricity through a virtual power purchase agreement (VPPA) in the U.S. We expect to announce a request for proposal and project shortlist in the first quarter of 2022, enter commercial negotiations, and finalize the deals by the third quarter of 2022. Our ramp-up in procurement is expected to reach a total volume of over 1.5 million MWh by 2025.

Furthermore, we are expanding our renewable electricity procurement in the EU and will be actively pursuing opportunities in renewable electricity as another activity in our strategic decarbonization.

Green Projects: To further improve our environmental performance, including reductions in our carbon footprint, energy use, water consumption, and waste, we introduced key measures which apply to growth projects and introduced Decarbonization SOPs harmonizing the payback threshold and applied an internal carbon price for green projects across our businesses. We also executed GHG reductions and energy saving projects in 2021 resulting in 143,175 tons of reduced CO₂.

Carbon pricing: As part of our Decarbonization Strategy, we adopted an internal carbon pricing scheme to factor into our business and investment decisions, which adds another significant indicator to our current investment planning and increases the visibility of, and encourages greater accountability for, the impact of carbon on our businesses. We developed various scenarios for the development of carbon pricing through an Emissions Trading Scheme (ETS), by

countries, regions and status of regulatory implications, to reflect the increase in price assumptions. A statistical carbon price of USD 20/tCO₂e was considered to calculate carbon sensitivity.

We considered various **climate scenarios** covering a broad spectrum of outcomes to help provide insights into some of the risks and opportunities that may arise. The scenario analysis is based on a carbon pricing financial impact model with different carbon price inputs according to the parameters of each scenario. We conducted stress-testing using both the **IEA Stated Policies Scenario** and the **IEA Sustainable Development Scenario** to predict the financial impact of carbon pricing on IVL and evaluated how those scenarios differ from our own proprietary scenario. Further information is available in the [TCFD Report](#).

Water stress analysis: We manage our water responsibly, including water withdrawal and discharge, and seek continuous improvements in water management through the 3Rs (Reduce, Reuse, Recycle). Conscious of water risk, we demonstrate our responsibility through efficient water management and stewardship. We focus on local water risk assessments and through follow-ups, have an effective risk management system in place, and we regularly assess our exposure to water-related risks. We conducted a water sensitivity analysis using the **AQUEDUCT Water Risk tool** developed by the World Resources Institute to identify water stress locations in 2021. This valuable tool helped us to evaluate changes in water demand, water supply, stakeholder risk, and regulations based on current and future conditions in addition to helping us foresee changes to water risk forecasting in 2020 and 2030. These results have been analyzed

on a yearly basis to identify the necessary mitigation measures and any meaningful initiatives for plants located in areas facing extreme water stress or significant risks to water usage.

Further information on our performance and net zero carbon ambitions is available in our [2021 Sustainability Report](#).

Human Rights in our Value Chain

Integrating sustainability in our operations is a core focus, and we have robust mechanisms in place that support human rights governance and compliance. Our [Human Rights Policy](#) provides clear guidance in upholding and promoting human rights and we encourage key stakeholders throughout the value chain to adopt strong human rights standards in-line with the Universal Declaration of Human Rights (as defined below) as a part of their conduct.

Our Human Rights Policy was revised in 2021 to cover more ESG point of views, e.g., human trafficking, sexual and non-sexual harassment, and bullying. Moreover, we also introduced an additional tool – a Human Rights Declaration Package – to strengthen enforcement and compliance with our Human Rights Policy and create accountability and responsibility in the workplace. All site and business heads must issue this declaration annually. As per the 2021 result, the declaration was issued by 80% of Business Heads and 81% of Site Heads, and no significant issues or major violations were noticed from the declarations. However, three units reported seven issues. For further details, please visit the 2021 Sustainability Report, under the Corporate Governance section.

Wherever we operate, 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. [Our Supplier Code of Conduct](#) covers legal compliance, ethics, human rights, the environment, health and safety, the handling of proprietary information, mutual trust and respect and the reporting of any misconduct. We insist that suppliers be responsible in overseeing and ensuring compliance of their subcontractors and suppliers. For further detail, please see the [2021 Sustainability Report](#).

2021 Assessment Results

- 
100% of raw material suppliers and critical non-raw material suppliers were assessed based on human rights related risks.
- 
No key raw materials and critical non-raw materials suppliers were identified as human rights related risks.
- 
No key raw materials and critical non-raw materials suppliers were specified as being exposed to risks of incidents of child, forced and compulsory labor.
- 
No complaints concerning human rights were submitted through the grievance reporting system.

Sustainability – the Road Ahead

We recognize that our stakeholders and industry have rising expectations of our performance. Our Sustainability Strategy takes a systems-based approach and seeks to identify and improve performance across a wide range of relevant issues, including the environment, people and society. In determining where to focus, we are taking materiality as well as impacts into consideration for the road ahead.

Climate Change: Towards 2030 – 2050

We are striving to meet the objectives of the Paris Agreement to manage climate in the context of sustainable development. We believe that **CCUS** is the driving force behind our energy transition, which aims to meet energy demand without increasing CO₂ emissions. We are currently **capturing CO₂ from ethylene oxide (EO) and flue gas** at one of our operations in the U.S. To maintain the competitiveness of oil and gas in a low-carbon future, we currently pursuing new technological developments that will allow us to advance the energy transition in an orderly and sustainable manner.

Sustainable Supply Chain Management

As a chemical company, we are positioned at the center of the value chain. We have reiterated **our ESG supplier assessment and robust sustainable supply chain management program** to establish a low carbon operating system and develop a Science-Based Target (SBT) that would cover Scope 3 emissions. Furthermore, we aim to address climate impacts in the supply chain through a low carbon supply chain strategy to engage suppliers. While we are focusing on key enablers for effective supplier engagement, we are advancing our supply chain framework by:

- Improving Scope 3 GHG emissions inventory and engaging with key suppliers to identify mitigation initiatives and establishing an emissions reduction strategy.
- Developing a digital supplier assessment tool.
- Collaborating with supply chain partners to promote best practices in the areas of climate impacts, a low carbon framework, human rights, health and safety, and compliance with environmental, labor and other applicable regulations.

Our continued focus on Innovation and Product Stewardship to make IVL the preferred Value Chain Partner

Our commitment to helping create a more sustainable world drives us to find better, safer, and more cost-effective ways to solve the day-to-day problems and challenges of our customers. Innovation at IVL focuses on new products and solutions that meet social and environmental needs, and which are in line with our guiding principles and policies for environmental stewardship and sustainability. Through an increasing focus on **innovation and the development of products with lower carbon footprints**, we can become the

preferred company of our customers as well as consumers, while contributing financially through improved margins. We aim to play a leading role in the circular economy, expand the volumes and scope of our recycled products for a broader range of customers, and are also expanding our use of bio-derived raw materials. **Our constant focus on the development of new technologies ensures that we can always use the most advanced, efficient and sustainable production processes** which helps us to open up new markets. By creating innovative new products and system solutions, we also help customers anticipate market trends and lead the market.

Product Stewardship plays an important role in IVL's operations by guiding new product development in the direction of safer chemistry and reducing any adverse environmental, health, and safety impacts of our products and processes. Our Product Stewardship encompasses three sets of considerations – **product safety, raw materials, and eco-impacts** – which allow us to identify a product's stages to further improve its design, manufacture, raw materials, transportation, and value chain lowering its ultimate impact on the environment. This applies to our operations and entire value chain – from upstream, midstream, to downstream. While we make sure that our products are safe when used as intended, we are always seeking ways to lower their environmental impact and address potential concerns regarding toxicity in our raw materials and other chemicals. Product Stewardship, therefore, encourages innovation in our products and processes so we meet increasing societal and business expectations while generating value by identifying opportunities to reduce resource and material consumption through **Life Cycle Assessments (LCA)** of our products throughout the value chain.

We have been using LCAs to guide our business development and will expand this practice to a wider range of our product portfolio, including rPET flakes, rPET pellets, Monocomponent PP fibers and PNDA. This will allow us to further identify any impact areas and address our sustainability challenges, as well as those of our customers, through a more holistic approach. We plan to carry out LCAs of other products and expect to formalize the program's key performance indicators across the board.

Our commitments speak for themselves. We not only continue to work to address climate change concerns but are also expanding the scale of our work to across boundaries and undertaking our responsibilities to the next level along the value chain.

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 a 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. Between assessments, we review our existing material issues for their relevance and importance to IVL and our stakeholders. The process integrates input from external stakeholders, trend analyses and internal engagement across our business group.

The following are key material issues from our latest assessment in 2020:

Environment	Social	Governance
<ul style="list-style-type: none"> PET Recycling and Plastic Waste Climate Change (including Decarbonization) Product Stewardship 	<ul style="list-style-type: none"> Occupational Health and Safety Human Rights Human Capital Development 	<ul style="list-style-type: none"> Compliance Management (Regulatory and Environment) Business Ethics, Integrity and Transparency Risk and Crisis Management Corporate Governance Customer Relationship Management Supply Chain Management Cyber Security

Further details on the materiality assessment process, key material issues and performance are provided in our [2021 Sustainability Report](#) and [2020 Materiality Assessment Report](#).

Awards and Recognitions

We participate in **independent external sustainability assessments and evaluations** of our sustainability performance including recognitions such as the Dow Jones Sustainability Indices (DJSI), CDP, FTSE4Good, MSCI, Sustainalytics, EcoVadis, ChemScore by ChemSec, Stock Exchange of Thailand (SET) and Thailand Sustainability Investment (THSI) among others.

Our **achievements and third-party recognitions** speak to the focused efforts of management, together with the outstanding commitment and efforts of our employees. Our inclusion in sustainability indices is an indication of our environmental, social, and governance performance. The details of these ratings also show us how we can continue to improve, provide us with a broader perspective of global standards, and help drive continuous improvements over time. It is also important that we build on these successes and continue to aspire to be **“a world-class sustainable chemical company making great products for society.”** Learn more about [our corporate sustainability awards and recognitions](#).

Member of
**Dow Jones
Sustainability Indices**

Powered by the S&P Global CSA

Sustainability Yearbook
Member 2022

S&P Global

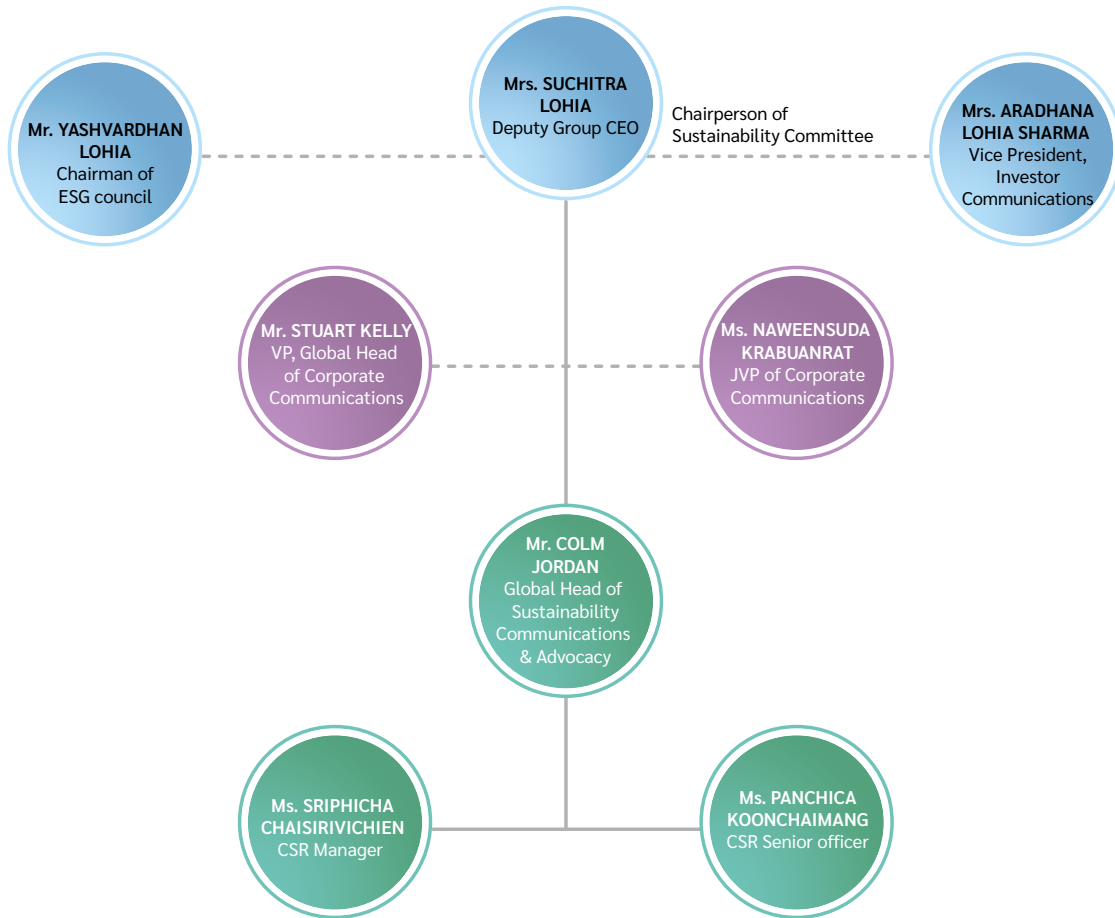


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IVL's Corporate Social Responsibility's committee



The Committee Roles

- **Oversee the creation, communication, and implementation** of its Group-wide Corporate Social Responsibility Policy, associated frameworks, processes, and practices of the company
- **Make recommendations to the Sustainability and Risk Management Committee** on issues related to CSR activities
- **Promote group-wide CSR activities**
- **Provide guidance and recommendations to Local CSR Working Group** to ensure CSR activities are aligned to the Group-wide Corporate Social Responsibility Policy and overall sustainability objectives
- **Ensure the adequacy and effectiveness of the Company's** internal controls and systems in relation to CSR
- **Monitor, report progress and outcome of various** CSR activities at a corporate level and unit level and make appropriate disclosure on a periodic basis
- **Oversee and gather data** for both internal and external audiences

Creating Shared Value – leading IVL’s Corporate Social Responsibility (CSR) strategy

IVL’s CSR activities are aligned to meet with the Shared Value concept by facilitating and engaging the global community, leveraging strengths in collaboration, raising awareness, and developing the value chain. In deciding our CSR priorities, we continue to create value and remain sustainable by benefiting society, our environment, the economy, as well as the company and the communities we operate in.

Global CSR Targets under its three Focus Areas

This year we announced our global 2030 CSR targets.

CSR Focus Area	Our Targets	Our Actions
Knowledge	By 2030 , IVL’s recycling awareness projects will have educated 1 million people globally	Encourage recycling awareness projects in different communities and countries and make our recycling educational materials accessible to people worldwide.
Well-being	By 2030 , reach at least 100,000 beneficiaries/people in the community with direct or indirect benefits from IVL’s well-being initiative (improve quality of life, make people healthier and wealthier)	Develop our engagement with local communities to improve quality of life, and better living and health.
Environment	By 2030 , enable the cumulative sorting of at least 100 tons of post-consumer PET bottles for recycling	Ensure a clean environment, improve awareness of plastic waste separation, minimize the impacts from business operations, and support the circular economy through PET recycling and conserving natural resources.

Public-Private collaboration to collect and recycle post-consumer PET bottles into Personal Protective Equipment (PPE) for Healthcare Workers

Harnessing our knowledge of PET plastic as a hygienic and recyclable material, IVL collaborated with more than 10 partners to collect and recycle post-consumer PET bottles into PPEs for healthcare workers. In 2021, IVL supplied 8,000 reusable PPEs and 1,000 bedding sets to hospitals and medical institutions not only in Thailand but also to hospitals in India and Brazil.

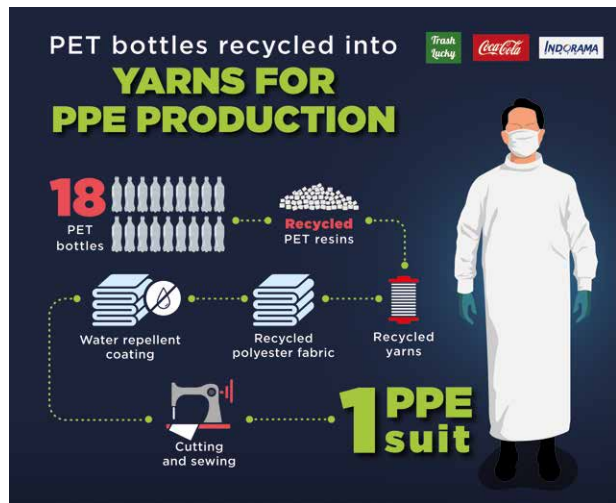
The PPE coveralls are of high quality, offering better protection to users, and are suitable to be used while treating low and medium-risk patients. Our producer of PPE coveralls is certified by Thailand’s Food and Drug Administration and the Thailand Textile Institute and has made the PPE coveralls to be reused and washed up to 20 times. This initiative has raised public awareness about PET recycling while also enhancing IVL’s visibility and image as a leading PET recycler. It has also secured our supply chain and ensured long-term strategic involvement and partnership with our stakeholders in creating mutual business benefits.



Coca-Cola Thailand “Recycle Me” campaign with Trash Lucky

As part of IVL’s Corporate Social Responsibility (CSR) focus to promote PET recycling, waste separation, and reduction, the company has collaborated with Coca-Cola Thailand and Trash Lucky in the “Recycle me” campaign. Launching a “Recycle Me” message on Coca-Cola’s package labels that are designed to encourage consumers to be aware of recyclable packaging separation in Thailand.

IVL plays an important role in creating a truly circular economy by turning post-consumer PET bottles into fibers and recycled products, including the production of reusable Personal Protective Equipment (PPE suits) for frontline healthcare workers and hospitals still battling the COVID-19 pandemic.



IVL’s Shared Value Awards Showcase

At IVL, we aim to implement CSR practices to meet with the Shared Value concept. We encourage our employees to uplift their CSR activities through “IVL’s Shared Value Awards” to create an impact on society while adding value to the business.

Integrated Oxides and Derivatives in the US **supplied 15,860 gallons of hand sanitizing solution** globally to different communities, facilities, and institutions to help **relieve its shortage during the pandemic**.



JSC “Orion Global PET” in Lithuania, **encouraged school students to pursue engineering studies** at their local university, where they could get local **job opportunities** in the future.



Indorama Ventures Polímeros S.A. in Suape, Brazil, **improved the vulnerable Gaibu Community through education on PET collection and recycling, environment, and literature**. This also aligned with the company’s global commitment to **recycling 50 billion bottles by 2025**.



Glanzstoff Bohemia in Lovosice, Czech Republic, **designed a new crystallization unit** to reduce its **consumption of water from rivers and streams**. Advanced technology is applied through **collaboration and technical knowledge sharing** between **employees and university students**.



Recycling Education 2021

IVL has been increasing awareness about recycling with our partner institutions through our Recycling Education Project in Thailand since 2018. We continue to educate people on the circular and recyclable qualities of PET, and their important role in recycling and preventing the mismanagement of PET waste.

In the second year of the COVID pandemic, it was a challenge for us to arrange onsite education programming given the closure of many schools. Moreover, with the tight online class schedules for students, it became a challenge for us to coordinate virtual education training.

This forced us to work with teachers to better adapt our training ensuring that students were engaged. We worked with a kindergarten teacher and together, created a worksheet covering waste separation and the types of plastic geared to kids providing a useful tool which they enjoyed using together with their parents who provided positive feedback. We also sent our recycling materials to high school and college teachers increasing awareness about the reusability of plastic, its proper management, and how recycling has both environmental and economic benefits.



As we were also unable to arrange any onsite roadshows in Thailand, we instead released educational video content for kids and the public which makes the case for increasing recycling. We hope these materials can serve as important tools for teachers to educate their students, or provide opportunities for independent self-studies, and

we have plans to later translate and upload our content on YouTube with free distribution to additional schools.

For university students in Thailand, we provided both onsite (adhering to COVID health and safety guidelines) and virtual learning sessions. Many universities in the country implemented their own SDGs in support of a circular economy so it was an opportune time to highlight the importance of recycling PET and how it contributes to circularity by helping reduce waste. Our collaboration with Valaya Alangkorn Rajabhut University allowed us to engage with residents in the Baan Pang and Baan Klueng communities discussing the benefits of managing plastic and how it plays a valuable role in the circular economy.

We were proud to support and assist public and private companies by arranging virtual training sessions to support their efforts in achieving their sustainability objectives by reducing waste and increasing environmental awareness among their employees. Our collaborations with these companies involved jointly collecting PET bottles which were upcycled into PPE suits and donated to hospitals for use by all frontline medical staff providing much needed protection from COVID-19.

Following our training sessions, some of the companies distributed our recycling education materials in their communities confirming that “knowledge has a beginning but no end.” And we were pleased to further extend the reach of our materials conveying the importance of recycling PET.

In 2021, we also had the opportunity to share our expertise and experience on recycling and circularity with officers of the Bangkok Metropolitan Administration supporting the city’s approach towards improved plastic waste management and to increase efforts to engage more municipalities in Thailand to recycle.

We were very pleased to join forces with Trash Lucky, an innovative startup that encourages people to separate waste through lucky raffle draws. We share their vision of plastic-free oceans and incentivizing people to recycle and divert waste from landfills. Our recycling team joined Trash Lucky on a roadshow at the Asian Institute of Technology meeting with students and residents in the community talking about recycling PET, and arranging activities to separate waste and win the lucky draw.

Scaling Recycling Education Globally

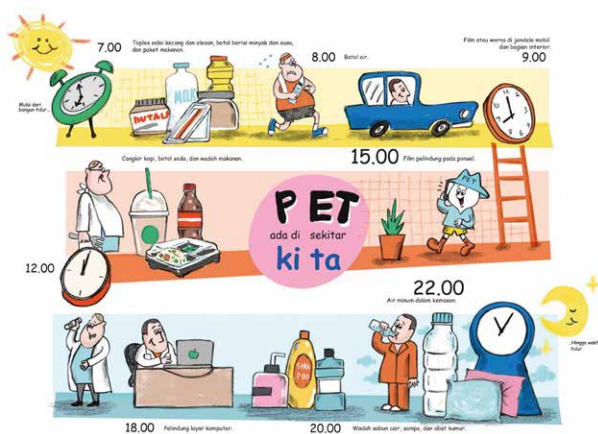
To meet our 2030 target, we are engaging with Yunus Thailand and several educational networks to scale up our “Global Recycling Education” project. To enhance recycling awareness worldwide, we are developing IVL’s recycling education materials for a global

audience. The materials will be designed for different educational levels with a variety of interesting topics. The program will integrate an Educator Advisory Group (EAG) and independent third-party validation to ensure quality content and international recognition for this far-reaching initiative.

Building on our corporate global partnership with external organizations, we also facilitate and engage locally with IVL's site-based Corporate Social Responsibility (CSR) representatives across the globe to promote recycling education.

In 2021, we expanded to Brazil, Ghana, Indonesia, and Poland where we are working with teams who are exploring potential collaborations with local communities. To localize content, the local CSR representatives have developed materials aligned with the national context, including translation into local languages.

Finally, we developed new handbook on solid waste and plastic management for municipalities to complement our existing recycling education materials geared to universities, cities, communities and the general public. To localize our content, our recycling materials were translated last year into Bahasa Indonesia, with the country dealing with a challenging waste problem.



Global Recycling Education Activities

We were also pleased to continue our recycling education activities globally in the past year.

In Brazil, 10 of our employees volunteered organizing recreational activities and educational games on how to manage plastic waste allowing children and adolescents to better understand why we need to protect the environment in the scenic city of Gaibu. Our actions helped to clean the city's beach and with our partner, we collected 60 tones of PET for recycling redirecting waste from landfill.

In Ghana, we teamed up with the IVL Foundation for a special initiative training teachers across the country on how to better manage waste and plastic, which they shared in their classes highlighting the importance of recycling and proper waste management in their curriculums broadening awareness among students.

In Poland, we conducted a competition called the "New Life of a PET Bottle" for students in grades 1-3 at Wloclawek elementary school, who created imaginative objects using PET bottles showing that recycling does matter and that every bottle can be given a second life.

In the US, we continued our recycling partnership with the Rocket City Trash Pandas Baseball Team in Huntsville, Alabama, where we joined their annual "Sprocket Sprint" 5k race, fun run and Easter Egg Hunt, distributing 600 sets of education materials to promote recycling waste and separation. Our site in Decatur, Alabama, kicked-off the successful 5th Annual Recycle Education Program, "Think Outside the Trash," with Austin Middle School, our partner in education. The full-day activity was held in the school's auditorium in adherence to COVID regulations, and consisted of the merits of recycling: what it is all about, why it's important, how to recycle, and how students can become "Recycling Ambassadors" in their homes, schools and communities. The program also incorporated several competitions and challenges to engage the students by creating a "Recycle Ambassador Club," consisting of a team of teachers and students who help promote recycling at school events as well as collect, weigh, and log weekly recyclable materials collected at the school. Together, they organized three friendly competitions collecting over 331 pounds of PET. Their "End of the Year" goal reached close to 4,000 pounds of recyclable materials.

IVL believes in the importance of recycling as part of the circular economy but we need everyone to help make our combined efforts a success. This cannot happen unless people understand how different PET is from other types of plastic and how crucial recycling is to making our world a better place. This is the reason the Recycling Education Program is one of our key initiatives, helping instill a sense of responsibility and a recycling culture among children, the next generation of leaders in our society.





Environment, health and safety (EHS)

EHS Policy

In 2021, IVL evaluated and revised its EHS policy and made revisions that to more fully align with the company’s vision and values and guiding principles and the critical strategies that support them. The revision also allowed the company to incorporate both the environmental and health and safety policies, which were managed as separate documents, into a single cohesive policy that truly reflects IVL’s values. The new policy provides a more succinct and simplified statement and includes five EHS guiding principles. Figure 1 below depicts the policy.

Figure 1

Our guiding principles will be the basis of our success
Focused on risk, compliance, employee engagement, transparency and improvement “We are Responsible”.

<p>Know our Risks</p> <p>IVL relentlessly seeks to learn, deeply understand performance barriers and risk mitigations</p>	<p>Employee empowerment</p> <p>IVL empowers all employees to stop work that they feel is unsafe and elevate risk concerns to supervisors without fear of reprisal</p>	<p>Compliance</p> <p>IVL will fully comply with all applicable government statutes in areas where it operates</p>	<p>Transparent Risk & Incident Reporting</p> <p>IVL assures all incidents and known risks are properly reported and classified</p>	<p>Continuous Improvement</p> <p>IVL is committed to continually improving systems and execution of EHS programs</p>
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Our EHS Vision is to “Protect our people, our planet, which enables our prosperity”.

Consistent with our corporate value, “We are Responsible”, Indorama Ventures Public Company Limited* (IVL) places the well-being of our employees, customers, environment and the communities in which we operate are at the forefront of everything we do and every decision we make. IVL is committed to operating in a safe and environmentally compliant manner while maintaining environmental, safety and product stewardship as integral aspects of our business and in providing our stakeholders and other interested parties with the information necessary to manage our products in a safe and environmentally responsible manner.

We are committed to preventing all harm through achieving excellence in Environmental, Health, and Safety (EHS) performance in all aspects of our business worldwide. To achieve this commitment, EHS is integrated into all

business management processes. We ensure that all employees and contractors are aware of our policies and values and have been trained in their specific responsibilities for achieving EHS excellence.

Everyone has a responsibility to:

- Maintain constant vigilance to identify unsafe acts and conditions and bring these hazards to the attention of management and coworkers to help secure their safety.
- Ensure that our products and operations meet or exceed applicable government and IVL standards.
- Incorporate environmental, health and safety considerations into all job functions and business decisions.
- Use process hazard management systems, procedures and practices to identify and prevent hazardous conditions that have the potential to cause unplanned events.

Mr. Aloke Lohia
Group Chief Executive Officer

The new policy was approved by the IVL Board of Directors in August. The policy has also been translated into all of the IVL operating languages and typeset with graphics creating a one-page document that can be framed and displayed in IVL facilities globally.

In addition to the new EHS Policy, IVL created the Golden Safety Rules.



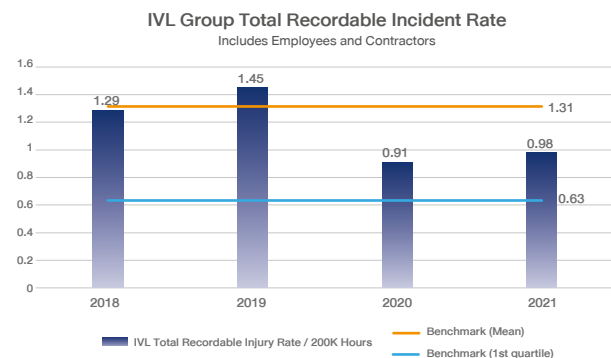
These rules were put into place to increase awareness and reduce the risk of life threatening or impacting events. The intent is for sites to elevate the importance of these activities above other safety activities. Each of these rules is being accompanied by full prescriptive procedures that fully define the company standard.

EHS Operating Results

Occupational Safety & Health Performance

From an Injury and Illness frequency perspective, IVL measures Total Recordable Incident Rate (TRIR) per 200,000 work hours. Although slightly higher than 2020, Indorama’s TRIR for 2021 continues to be substantially lower than previous years, supporting an overall downward trend over the past 4 years. From a benchmarking standpoint, Indorama falls between the industry mean and first quartile. See Figure 2 for depiction.

Figure 2

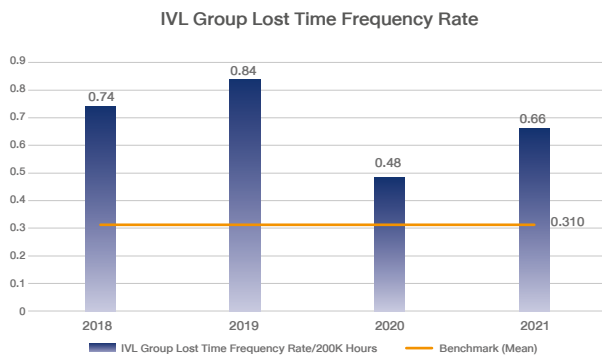


Benchmarks determined by calculating weighted average of peer sectors from Bureau of Labor Statistics TRIR data

From an incident reporting perspective, it is believed that 2021 incident reporting was better, likely driving incident counts higher than previous years due to better focus at the site level and due to new Corporate EHS oversight.

In examining more severe injuries and illnesses, IVL uses two metrics: Lost Time Incident Frequency Rate (LTIFR) and count of LIFE incidents. A LIFE incident is defined as a work-related incident involving a fatality or permanent partial disability. LTIFR performance is depicted below in Figure 3

Figure 3



Benchmark determined by calculating weighted average of peer sectors from Bureau of Labor Statistics LTIFR data

In addition to the LTIFR data, IVL had 6 LIFE events in 2021. They are:

- Contractor sustaining a punctured torso from high pressure water blasting resulting in a permanent disability
- Fatality involving a contractor being overrun by another contractor driving a forklift in a warehouse yard
- Fatality involving an employee entering a tank used to wash PET flakes. The vessel was not de-energized prior to entry
- Three instances of finger amputations from fingers caught in equipment

As indicated by the chart and the number of LIFE impacting incidents, IVL has work to do in improving 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 second quarter 2021, IVL launched its 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.



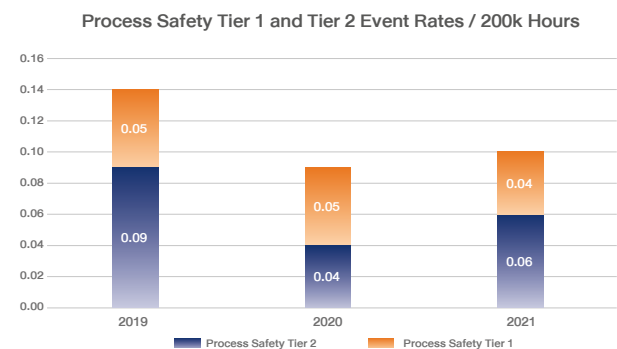
In addition, the aforementioned Golden Rules were established and launched to prevent serious incidents such as those identified above as LIFE incidents. Both of these initiatives should improve frequency and severity rates over time.

Standardization efforts were launched centered on creating governing standards for reporting incidents and managing risks. Time will be needed for the benefits of these standardization efforts to be realized.

Process Safety Performance

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. Figure 4 illustrates IVL's performance in 2021 compared to the two previous years.

Figure 4



While the 2021 Tier 2 rate is slightly higher than 2020, it should be noted that 2021 includes events that were not previously captured in the reporting, as IVL has learned more about API reporting since the inception of the Corporate EHS team and executed training in support of enhanced reporting.

Significant process safety events/process fires include the following for 2021:

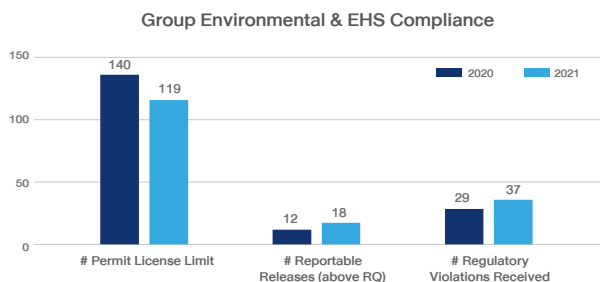
- Fire due to a heat exchanger gasket leak in Port Neches, TX
- Fire due to a failed vessel support resulting in a leak in Suape, Brazil
- An exhaust duct fire in the Obernburg, Germany fibers plant. This event does not meet the definition of a process safety event due to not originating from a Loss of Primary Containment but is included in this list as a significant process fire.

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 statutes, the more rigorous standard will apply. The standards developed by IVL are being deployed beginning in 2022 and will be a multi-year process for full implementation.

Environmental Performance

IVL measures Regulatory Compliance by tracking the number of permit exceedances, the number of releases that exceed governmental statute reportable quantities and the number of regulatory violations. Figure 5 illustrates these values in 2021 compared to 2020.

Figure 5



Corp EHS follow up efforts have looked at single failure events but focused on reoccurring exceedances/violations. Work completed by IOD in 2021 has had a significant impact on reducing exceedances and consequently violations. Their efforts included revising a boiler permit to provide operational flexibility and enhancing process monitoring to react to upset conditions before permit limits are exceeded. Outside of IOD, the main contributor to violations is wastewater exceedances. In most cases, it will require capital to address ongoing wastewater system upsets. The Regional Directors and Environmental Director have been working with these sites to evaluate options and ensure an effective corrective action plan.

Regulatory Violations of significance (>\$10,000 USD) include:

Month	Location	Description of Violation	Penalty
January	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$16,964
February	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$14,566
April	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$20,879
May	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$25,053
June	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$47,261
October	GIVL - China	Exceedance of Ammonia /Total Nitrogen limit in Wastewater	\$16,000
October	Fibervisions – Covington, GA	Exceedance of Oil and Grease limit in Wastewater	\$16,155

As noted in the table all except one of the regulatory violations occurred at a single site. That site has an capital project planned to provide additional treatment capacity and has since implemented an interim solution of hauling the effluent to an approved treatment facility.



General Information

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 5,666,010,449 divided into 5,666,010,449 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	: 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 Registrar and Debenture Holders' Representative (For IVL Debenture No.1/2020 and No.1/2021)	: 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 Holders' Representative (For IVL Debenture No.1/2012, 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
Debenture Holders' Representative (For Subordinated Perpetual Debentures of Indorama Ventures Public Company Limited No.1/2019)	: Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: 0-2-230-1136 Fax: 0-2-626-4545-6
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 26th, 2021)¹

Top Ten Major Shareholders

No.	Shareholders	No. of Shares	%
1.	Indorama Resources Ltd. ²	3,504,991,318	62.427
2.	Thai NVDR Ltd.	388,273,294	6.915
3.	Bangkok Bank Public Company Limited	270,905,264	4.825
4.	South East Asia UK (TYPE C) Nominees Limited.	89,202,645	1.589
5.	Social Security Office	81,182,100	1.446
6.	Credit Suisse AG, Singapore Branch	75,270,900	1.341
7.	Canopus International Limited ²	55,000,000	0.980
8.	State Street Europe Limited	54,708,328	0.974
9.	SE Asia (TYPE B) Nominees LLC.	32,008,907	0.570
10.	VAYU 1 by MFC	27,028,200	0.481
11.	VAYU 1 by KTB	27,028,200	0.481
12.	Other Shareholders	1,008,952,752	17.970
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.

Group of Lohia Family	No. of Shares	%
• Indorama Resources Ltd.*	3,504,991,318	62.43
• Canopus International Limited**	130,000,000***	2.32
• Mr. Aloke Lohia****	1,000,010	0.02
• Mr. Anuj Lohia	10	0.00

* Owned by Canopus International Limited 99.98%

** Mr. Aloke 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 in Canopus International Limited are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.

*** 75,000,000 shares out of 130,000,000 shares are in the custodian of Credit Suisse AG, Singapore Branch.

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



Other Material Information

Securities of the Company

As of 31st December 2021, Indorama Ventures Public Company Limited (the “**Company**” or “**IVL**”) had the Registered Capital of Baht 5,666,010,449 divided into 5,666,010,449 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 64.77 percent

Remarks:	¹ Group of Lohia Family		
		No. of Shares	%
	• Indorama Resources Ltd.*	3,504,991,318	62.43
	• Canopus International Limited**	130,000,000***	2.32
	• 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 in Canopus International Limited are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.		
	*** 75,000,000 shares out of 130,000,000 shares are in the custody of Credit Suisse AG, Singapore Branch.		

The Ultimate Shareholders of the Company

Indorama Resources Limited* holds 62.43 percent and Canopus International Limited** holds 2.32 percent in the Company’s shares respectively.

Remarks:	* 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 in Canopus International Limited are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.

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 issue of debentures totally not exceeding Baht 150,000 million.

During year 2021, the Company had issued unsubordinated and unsecured sustainability-linked debentures with debenture holders’ representative on 3 November 2021 in the amount of Baht 10,000 million. And the Company had redeemed unsubordinated and unsecured debentures on maturity date, for 3 series on 8 June 2021, 19 October 2021 and 20 October 2021 in the amount of Baht 3,000 million, Baht 3,200 million and Baht 300 million, respectively.

As of 31 December 2021, the Company had outstanding unsubordinated and unsecured debentures totalling Baht 57,970 million and the subordinated perpetual debentures totalling Baht 15,000 million as follows:

Debentures issued on 5 April 2012:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL224A	Debentures of INDORAMA VENTURES No. 1/2012 Tranche 2	1,250.50	Year 1-3: 5.10% Year 4-7: 5.60% Year 8-10: 6.00%	10 years	5 April 2022
IVL224B	Debentures of INDORAMA VENTURES No. 1/2012 Tranche 5	2,649.50	5.52%	10 years	5 April 2022
Total		3,900			

Debentures issued on 14 December 2012:

Symbol	Name of Debenture	Amount (MB)	Interest Rate per year	Term of Issue	Maturity Date
IVL22DA	Debentures of INDORAMA VENTURES No. 2/2012 Tranche 3	1,645	5.11%	10 years	14 December 2022
IVL24DA	Debentures of INDORAMA VENTURES No. 2/2012 Tranche 4	1,475	5.28%	12 years	14 December 2024
Total		3,120			

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
IVL220A	Debentures of INDORAMA VENTURES No. 1/2015 Tranche 1	500	4.00%	7 years	13 October 2022
IVL250A	Debentures of INDORAMA VENTURES No. 1/2015 Tranche 2	1,100	4.20%	10 years	13 October 2025
Total		1,600			

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
IVL225A	Debentures of INDORAMA VENTURES No. 1/2017 Tranche 2	500	3.24%	5 years	4 May 2022
IVL245A	Debentures of INDORAMA VENTURES No. 1/2017 Tranche 3	1,000	3.75%	7 years	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		5,500			

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			

2. Debentures of IVL Singapore PTE Ltd.

The resolution of IVL Singapore 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, IVL Singapore 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 2021, Avgol, an indirect subsidiary of IVL, had outstanding unsecured debentures totalling USD 123.9 million, as follows:

No.	Amount (M USD)	Interest Rate per year	Term of Issue	Maturity Date
1/2014-C	80.8	4.75%	10 Years	31 December 2024
1/2017-D	43.1	3.90%	8 Years	31 December 2025
Total	123.9			

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).

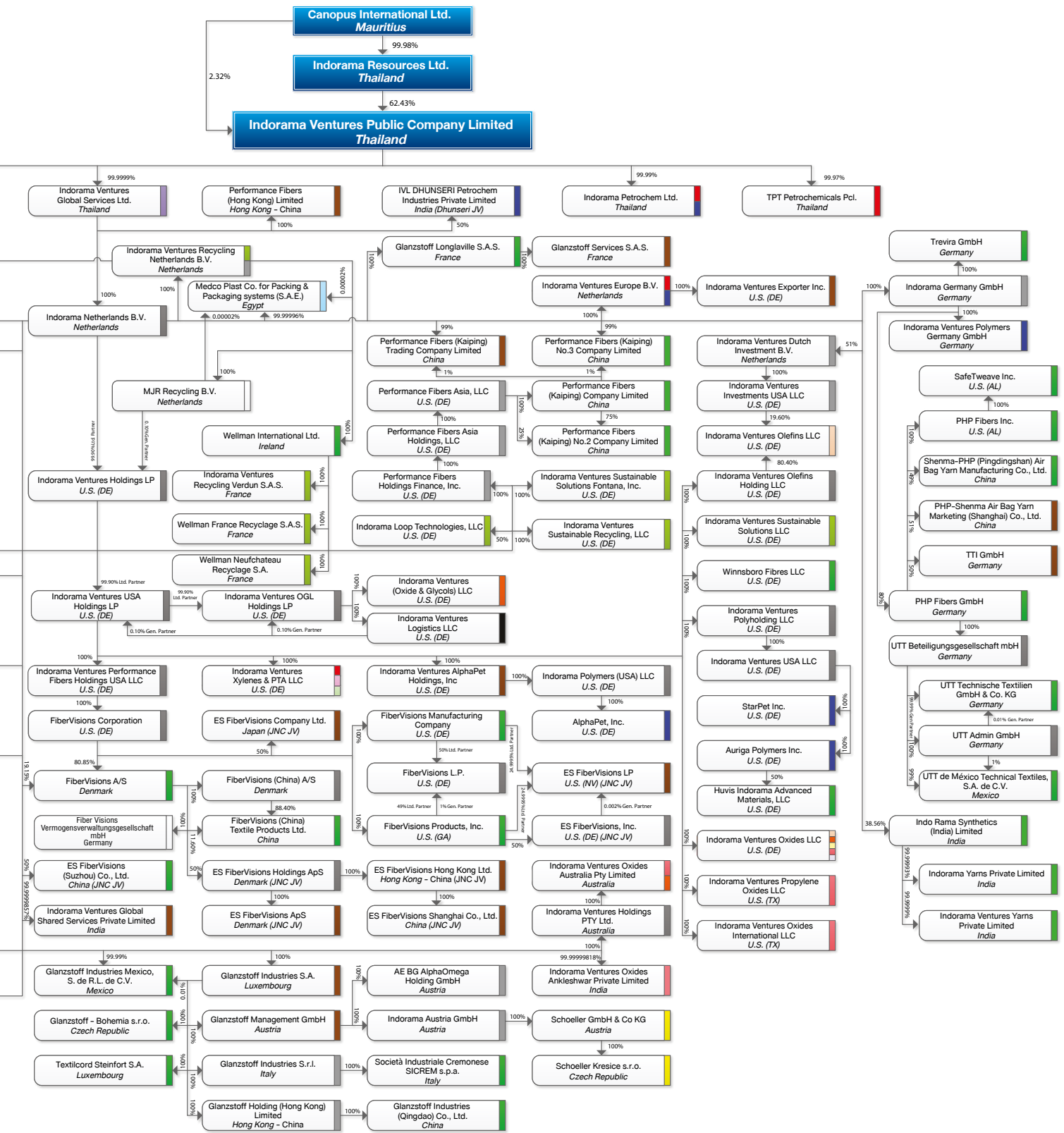
On 12 September 2019, IVGSL issued senior unsecured bonds to foreign institutional investors for the total amount of USD 300 million. The debenture is guaranteed by the Company.

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 2021, 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 or as support in case of changing market conditions or to manage future cash flows as required.



Corporate Governance Report 2021

The Company has continued to implement and practice good corporate governance in every region, guided by its board of directors and management. Its corporate values promote ethics and integrity among employees and influences both customers and suppliers. By promoting close adherence to good governance policies globally, the company continues to advance its long-term sustainability goals. The Corporate Governance Code for Listed Companies 2017 and all the recommendations of the Securities Exchange Commission (SEC), Stock Exchange of Thailand (SET), Institute Directors, Thailand (IOD) and others have a powerful influence on its treatment of stakeholders. To ensure that all are aware of, and following, our CG policies and practices, we distribute our Corporate Governance Manual (the Manual), which was approved by the Board in August 2019, to everyone, including directors, managers, employees, and other stakeholders. The Company has a Corporate Governance Department

that provides ongoing, and often mandatory, education for employees to ensure not only do they understand our good governance position but that they have the opportunity to raise questions to gain a deeper grasp of the issues.

Corporate Governance Principles

In the Manual, the Corporate Governance Policy was renamed the Corporate Governance Principles which follow the guidelines set out by the SET and the Corporate Governance criteria under the OECD Principles. It covers the following: a) the rights of shareholders; b) equitable treatment of shareholders; c) the role of stakeholders; d) disclosure and transparency; and e) the responsibility of the Board of Directors. The Corporate Governance Principles provide the basic foundation for sound, long-term oriented governance, and balance the interests of the Company's many stakeholders.

Furthermore, the Board of Directors performs its duties as suggested in the Corporate Governance Code for listed companies 2017 (the Code) issued by the SEC. It consists of eight principles: 1) Establish clear leadership roles and responsibilities of the Board; 2) Define objectives that promote sustainable value creation; 3) Strengthen the Board's effectiveness; 4) Ensure an effective CEO and people management; 5) Nurture innovation and a responsible business; 6) Strengthen effective risk management and internal controls; 7) Ensure disclosure and financial integrity; 8) Ensure engagement and communication with shareholders. We have implemented 97% of the SEC's recommendations.

In addition, the Board oversees and enforces the Company's adherence to the rules and regulations of listed companies issued by the SEC and Capital Market Supervisory Board (CMSB) and implements the recommendations as stated in the Corporate Governance Report of Thai Listed entities (CGR) issued by the IOD, ASEAN Corporate Governance Scorecard and Transparency International.

Highlighted Corporate Governance Practices in 2021

IVL has adopted and consistently complied with 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, as mentioned above, was introduced to all IVL entities globally in September 2019. The Corporate CGPAC Team provided various support to units to ensure its effective implementation. Every three years, the Manual is reviewed, and the next revision will be in 2022. Details are further explained below in the IVL Corporate Governance Policy Awareness Campaign 2021.
2. IVL has a Chairman of the Board who is a Non-executive Director and a major shareholder, who was chosen because of his vast 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 a Lead Independent Director (LID) since February 2018. The roles and responsibilities of the LID were further 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 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 Whistleblower Privacy Statement was reviewed for updates to comply with the Personal Data Protection Act 2012 (PDPA). Further details are provided in the Whistleblower Policy.

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 2021:

1. **A score of 100 percent for the 2021 Annual General Meeting** of shareholders, judged by the Thai Investors Association. This was our tenth consecutive year with a 100% score.
2. An **"Excellent - 5 Star" CG score** in the practice of **Corporate Governance of Thai Listed Companies** conducted by the Thai Institute of Directors (IOD) in conjunction with the Stock Exchange and Security Exchange Commission of Thailand. The excellent CG score is the highest possible rating and is awarded to firms with a score of 90-100 percent. We again scored 94 percent. This is the ninth consecutive year that we received the "5 star" rating.
3. Successfully renewed our certification for **Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)** in March 2021. We received our first certification in October 2014.
4. Recognized as a **Sustainability Yearbook Member in the S&P Global Sustainability Yearbook 2022** and listed in the **Dow Jones Sustainability Indices (DJSI) - World and Emerging Markets for the third and fifth consecutive year, respectively**, in the Chemicals sector, and **ranked in the 97th percentile** among the top 139 global chemical companies.
5. Participated in the **CDP's Climate Change Assessment** for the sixth consecutive year and achieved a **"B"** Rating in 2021.
6. Remain a constituent of the **FTSE4Good Index Series** having achieved **an ESG score of 4.1 out of 5 ranked in the 95th percentile**.
7. **Platinum Recognition for sustainability from EcoVadis**. This achievement places IVL as one of **the top 1% of companies (99th percentile)** in the **manufacture of basic chemicals**.
8. The **2021 Thailand Sustainability Investment (THSI)** award from the SET for the **seventh consecutive year**.
9. The **Best Sustainability Award at the SET Awards 2021**.
10. Awarded first rank in **the Leading SET Index Bloomberg ESG Disclosure Scores** in 2020.
11. A **"BBB"** rating in **the MSCI ESG Rating** in 2021.
12. Awarded **"Best Sustainability-Linked Transaction & Best ESG-Linked Financing Deal of the Year"** for our THB 10 billion Sustainability-Linked Bond (SLB) at the **15th Annual Best Deal & Solution Awards 2021** organized by Alpha Southeast Asia.
13. Ranked by **Global Child Forum in 7th place among 28 chemical companies** in the category of basic materials.

- 14. **1st place in the ChemScore Ranking** with a grade of B among the world's top 50 global chemical companies.

IVL Corporate Governance Awareness Campaign 2021

IVL has had a Corporate Governance Policy Awareness Campaign (CGPAC) since 2013. The CGPAC Team in Bangkok has, through a dedicated resource, continuously monitored progress and provided guidance and support to establish strong awareness among all IVL associates in not only understanding all corporate governance-related policies but their implementation through training in the spirit in which they were created. The CGPAC is a continuous program that communicates, trains, reviews and monitors implementation.

In 2021, the CGPAC Team continued to support the effective implementation of the CG Manual at all IVL units by:

- Developing a Conflict of Interest Assistance Package (the Assistance Package) as a guideline for units on how to effectively implement the Conflict of Interest Policy. Further details are provided in the Conflict of Interest section.
- In view of travel restrictions due to the pandemic, the team intensified their online training and Follow-up sessions and meetings with local teams who are responsible for communicating and implementing the Manual. Based on the requirements of each unit, the CGPAC Team used both lectures and in-depth discussions in delivering the online sessions, ensuring consistency and a clear understanding.

Online CG Manual-related training session statistics conducted by the CGPAC Team during the year across IVL units globally.

Number of Sessions	82
Number of Attendees	1,019

The training session introduced the Manual to employees to provide guidance on how they can take part in creating good governance in the Company. The session began with an introduction of the concept of corporate governance and how it applies to IVL. It then discussed IVL's Code of Conduct with examples of ethical dilemmas that employees may face. To encourage the reporting of any wrongdoing that they may come across, the session concluded by informing employees about the Company's whistleblower reporting channels.

In the Follow-Up sessions, the CGPAC Team held in-depth discussions with local teams in Asia, Europe, the Middle East and Africa (EMENA) and the Americas on:

- how the units rolled out the Manual.
- how they communicated and conducted trainings and tested the understanding of employees during the pandemic.

- how their employees should raise concerns locally if they faced potential non-compliance situations.

Upon understanding their implementation of the Manual, the CGPAC Team provided suggestions and examples from other units for the local team to further enhance their implementation.

- In 2020, a new set of quiz questions was developed and circulated in June 2021 to further support the units in evaluating their employees' understanding of the CG Manual. These new quiz questions aim to broaden the question pool for the team at the respective units which they can select for their quiz.
- From discussions with the above-mentioned units, Covid-19 has accelerated their training to a digital-based format. To support this transition, the CGPAC Team continued to develop more subtitles for the "within-15-minute-long" videos which were launched in 2020. In addition to Dutch, Polish, Portuguese (Brazil), Spanish and Turkish subtitles, the training videos are now available in Arabic, Portuguese and Danish.

In 2021, the CGPAC Team also created an experimental training video set with Chinese computer-generated narration and subtitles to test the feasibility of creating training videos with computer-generated narration in local languages. The CGPAC Team also sent samples of the voices to all units in which local language options are available. The experimental videos and voice samples received positive feedback from the units. The CGPAC Team aims to make more videos with local language narration available in 2022.

- With an e-Book version of the Manual and other training materials that rolled out in the previous year, IVL employees are now well aware of the Manual. The CGPAC Team will update the current English, Thai, Chinese and Spanish e-Books and develop more e-Books in other languages after the revision of the Manual is finalized in 2022.

All site heads are responsible for the implementation of the Manual and report their results to the CGPAC Team which forwards the findings to the Nomination, Compensation and Corporate Governance Committee and the Board.

Site/HR heads ensure that employees are informed about the CG Manual as soon as they join the Company and new employees must acknowledge that they have read and understood the Manual. This initiative has ensured that all new employees are aware of the program.

The CGPAC Implementation Report for 2021 revealed that **87%** of all employees attended corporate governance training in the past three years, increasing from the 86% reported last year.

To maintain this momentum in 2022, the CGPAC Team is officially launching the CG Database which will serve as a corporate governance-related knowledge sharing platform for local teams at all units. The teams will have access to relevant information on internal CG practices.

The CGPAC Team also plans to develop a new set of training toolkits for units to provide training locally, which will focus on case studies relating to policies in the CG Manual.

The Corporate Governance Manual and related policies are reviewed annually. The CGPAC Team submits their recommendations to the Board for any changes to policies each year as required. Unless particularly important, the Manual will be revised every three years.

Rights and Equitable Treatment of Shareholders

IVL's utmost priority is to protect the rights of shareholders, irrespective of their shareholdings, and encourage them to exercise their rights as specified in relevant laws.

We recognize the basic legitimate right of shareholders, whether major or minor, local, foreign or institutional, to participate in shareholders' meetings; to appoint a proxy to participate and vote at the meeting; to vote for the appointment or removal of Individual Directors; to vote on the annual appointment of statutory auditors and fix their remuneration, and to vote on various other businesses of the Company. IVL implemented all of these shareholder rights at the Annual General Meeting of Shareholders No. 1/2021 held on April 27, 2021.

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.

Apart from the above, IVL also recognizes the equal rights of all shareholders to obtain accurate, adequate and timely information from the Company for their decision-making and will always strive to provide the same.

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 cross-holding of shares. Information on IVL Group's structure is available under the "Our Company" section of our 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 7, 2021. The notification clearly mentioned the procedures and criteria. We have not received any proposal from any shareholder and this was conveyed to the Board in February 2022.

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 2020 annual audited financial statements and the three reviewed quarterly financial statements of 2021 on the same day of their approval by the Board of Directors and/or Audit Committee on 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 Annual Report, Form 56-1, 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 informed on a timely and adequate basis.

We strongly support the participation of our shareholders and the important need for them to understand our operations and business activities and those of our subsidiaries, and to interact with management. To facilitate this process, we organize visits by shareholders to our plant in Thailand every year. In 2021, we could not organize a plant visit due to the COVID-19 pandemic. Such annual visits shall continue to be organized in the future as and when the situation improves.

Normally, shareholders are notified more than 30 days before the shareholders' meeting. Each shareholder receives complete and adequate information on the criteria and procedures of the meeting. Due to Covid restrictions, the Annual General Meeting of Shareholders No. 1/2021 was held on April 27, 2021, through an electronic platform and the notice was issued on March 26, 2021.

All information sent to shareholders was posted on our website both in English and in Thai on March 11, 2021. Shareholders were able to download the relevant information including the proxy forms.

The notice of the meeting was also communicated through the SET on March 11, 2021, and in local newspapers to remind shareholders to participate in the meeting.

Shareholders were given the opportunity to submit questions in advance regarding the agenda, together with comments, if any, from the date they were notified of the meeting. The procedure for submitting such questions was clearly mentioned in the notice to the meeting.

In view of the lockdown measures imposed by the government and to support measures issued by the Ministry of Public Health's Department of Disease Control to reduce any risks from the COVID-19 outbreak, we shifted from a proposed physical shareholders' meeting to an electronic meeting platform (E-AGM). Shareholders were informed well in advance of the change and the process for joining the meeting electronically was explained through the stock exchange and uploaded on our website on April 19, 2021.

All Directors joined the meeting from their respective locations and a total of 1,558 shareholders registered to join the meeting.

Shareholders were given the opportunity to appoint anyone of the four Independent Directors as their proxy and the profiles of the Independent Director(s) were attached to the notification of the meeting.

On the meeting date, we arranged for the shareholder registration to start more than two hours before the meeting. The meeting was held at 2.00 pm in the afternoon. The electronic arraignments were made from our registered office and a recognized third-party vendor was engaged to undertake the various formalities. 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 the 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. To cast their vote during the meeting, a shareholder could 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), who retired, opted against re-election due to the mandatory retirement age criteria as specified in the Board Charter.

The Board, on the recommendation of the NCCG Committee, recommended the appointment of Mr. Michael George DeSombre as a new Independent Director in place of Mr. Chakramon Phasukavanich who opted against reelection due to the age criteria. However, due to professional reasons, Mr. DeSombre resigned from the Board on October 31 and Dr. Harald Link was appointed as the new Independent Director in his place on November 1, 2021.

Profiles of the new Director and five Directors retiring and offering themselves for reappointment include the following information, in order to facilitate voting by 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 director of the Company, shareholdings, legal disputes, meeting attendance and the opinion of the Board.

The NCCG Committee selects candidates with the highest personal and professional integrity, with demonstrated and exceptional abilities and judgment and who shall be the most effective, in conjunction with the other candidates and serving directors, in properly serving the long-term interest of shareholders.

In addition, the Committee considers the appropriate mix of skills, education, experiences, independence, knowledge, as well as diversity in gender, age, race and nationality, to match with the Company's requirements and enhance Board diversity.

IVL's Board Competency and Diversity Matrix, which shows the diversity of directors in terms of demographics and skills, can be found at the bottom of the Board of Directors page on our website. No Director of the Board was proposed by major shareholders.

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

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) Approving Directors Remuneration

Independent and Non-Executive Directors

The Board reviewed and recommended to shareholders the remuneration of Independent and Non-Executive Directors for 2021 and the annual bonus for all IVL Directors payable for 2020 performance as recommended by the NCCG Committee.

The policy followed by the NCCG Committee to recommend to the Board and shareholders the compensation and benefits of Independent and Non-Executive Directors are as follows:

- 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 previous year's Company performance.
- Additional compensation will be paid to directors serving on various sub-committees.

To implement the policy, the NCCG Committee designs an appropriate compensation package based on comparable listed companies with 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 profit of the Company and uses a point system to allocate among the directors as approved by the Board. There was no change in the retainer fee in 2021. No retainer fee was paid to Executive Directors on the Board of IVL.

Details of the remuneration paid in 2021 to Independent Directors and Non-Executive Directors and the bonus for 2020 performance to all Directors is 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 2021 Annual General Meeting.

Executive Directors and Management

The policy and criteria for Executive Directors and Management is elaborated in the Board of Directors Performance in a subsequent part of this report.

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 2019 and 2020 and separately, the Company audit fee proposed in 2021, 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 2020 performance at 0.70 baht per share. Out of the said final dividend, an interim dividend of 0.175 baht per share was paid on June 11, 2020, 0.175 baht per share was paid on September 10, 2020 and 0.175 baht per share was paid on December 9, 2020 by the Company respectively; and the Company paid the remaining dividend of 0.175 baht per share on May 20, 2021.

e) Shareholders' Meeting

IVL's policy is to conduct shareholders' meetings in accordance with the Articles of Association of the Company 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 2020, to reduce any risk from the Covid-19 outbreak, the Company changed the proposed physical shareholders' meeting to an electronic platform (E-AGM), the E-AGM was held on April 27, 2021. The meeting started with 1,457 shareholders in person or proxy and representing 84.22% of the total shares sold. At the close of the meeting there were 1,558 shareholders in person or proxy representing 84.23%. The meeting started at 2.00 pm and ended at 3.35 pm.

Sixteen out of 16 Directors attended the meeting. 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 internal auditor of the Company, and the legal counsel of the Company were present in person at the registered office to conduct the meeting.

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.

Prior to starting the meeting, the Chairman and his representative 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 that the meeting was conducted in accordance with the laws and the article of association of the Company. Before starting with the agenda items, Mr. Rathian Srimongkol explained the proceeding of the meeting, including the voting method and submission of questions or opinions. The Annual General Meeting of Shareholders No. 1/2021 was held through an electronic meeting platform using the service of Quidlab Company Limited, which is an ETDA certified service provider for arranging electronic meeting platforms. 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 as there was no special resolution that would require three fourths of the eligible votes.

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

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

The Chairman provided shareholders with sufficient 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 99% of the total eligible votes. The resolution of the meeting, including

the number of votes cast, was disclosed on the SET's website on the same day of the meeting.

Comprehensive minutes of the meeting 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 at the same time.

f) Reporting of and Trading in IVL Securities

The Company has a written 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 15 working days prior to, and two working days subsequent to, the date of filing with the SET of the Company's quarterly and annual financial statements. 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 is a connected party and what constitutes a connected transaction, the various types of connected transactions and their threshold criteria/values for approval and disclosure purpose, and what procedures to follow when there is a new connected transaction. The guideline is circulated at the beginning of each year in order to remind all concerned about the compliance requirements regarding connected transactions. The Internal Audit Department ensures that all connected transactions follow the rules and regulations as prescribed by the SEC/SET and internal policy guidelines. Any proposed new connected transaction is brought to the notice of the Internal Audit Department which, after their verification, forwards their recommendation to the Audit Committee through the Secretary of the Audit Committee. The Audit Committee, after their review, will in turn, provide their recommendation to the Board. Without IVL Board approval, no new connected transaction can be made effective. At every quarterly meeting of the Audit Committee and Board of Directors, a statement of all the continuing connected transactions of the Company and its subsidiaries is submitted for acknowledgement.

However, IVL and its subsidiaries may have connected transactions with their Directors, management or potential connected persons. As a result, the Board of Directors Meeting approves, in principle, that management is empowered to approve such transactions under reasonable, transparent and non-corrupt conditions, provided that such a transaction is categorized as one with the same commercial

terms as those an ordinary person would agree to with any unrelated counterparty under similar circumstances, on the basis of commercial negotiations (general trading conditions) and without any dependent interest resulting from the status of director, management 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 Annual Report.

Role of Stakeholders

IVL gives equal importance to all of our stakeholders, both internal and external, such as shareholders, personnel, business partners, customers, competitors, creditors, communities, the environment and society. We are fully aware that support from each stakeholder will sustain and reinforce our competitive advantage and profitability.

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

IVL's stakeholder policies are now part of the new Corporate Governance Manual. Some of the policies which previously addressed groups of stakeholders separately were reviewed and integrated to avoid redundant provisions and elaborate on the more precise treatment of each group of key stakeholders.

IVL's policies relating to its Directors, employees and stakeholders in the Manual are:

- Use of Internal Information
- Anti-Corruption Policy
- Environment Health and Safety Policy*
- Intellectual Property Policy
- Human Rights Policy
- HIV-AIDS Policy
- Diversity Policy
- Treatment of Stakeholders:
 - Shareholders
 - Customers
 - Suppliers
 - Creditors
 - Competitors
 - Government
 - Media
- Whistleblower Policy
- Supplier Code of Conduct

* Two policies – the Environment Policy and the Health and Safety Policy were consolidated into the Environment, Health and Safety Policy (EHS policy) on May 14, 2021.

All of the above policies, though included in the Manual, are separately disclosed on the website for reference and are all uniformly structured.

As part of the CGPAC initiative and to develop and improve the relationship with our stakeholders, management will, on a continuous basis, reinforce that everyone working at IVL is aware of and understands all stakeholder-related policies; and that they are implemented in the spirit in which they were created through a continuous program of training, seminars and monitored implementation.

We also communicate the Manual and Suppliers Code of Conduct with key stakeholders to ensure that they are aware of, and have a clear understanding, of our corporate policies. Key stakeholders include, for example, the employees of contractors, suppliers, customers, local administrations or authorities and external auditors. On average, 69% of units directly communicated with key groups of stakeholders in 2021.

The Manual and related policies will be reviewed periodically, and changes will be implemented as required.

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:

We are strongly focused, together with our subsidiaries, in maintaining and strengthening long-term and loyal relationships with customers and ensuring customer satisfaction by providing high quality products and services that best fit customer needs at competitive prices, supported by a high standard of service and accurate information regarding our operations and products.

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 2020 was 86.16. Though no survey was conducted in 2021, it will resume in 2022.

c) Personnel:

All of our personnel, including those at subsidiaries, are valuable assets critical to our growth and profitability. We strive to provide a

conducive and quality-oriented work environment with the utmost focus on safety together with fair and equitable compensation compatible with similar businesses.

We prioritize the development of new skills, knowledge and potential in our employees, and are building a work environment that is rich in diversity and attracts and retains high performance employees. All new employees attend an orientation program and development programs thereafter to further develop and refresh their skills.

As a global operation, each of our facilities has its own employee benefits policy, which is in line with local laws and regulations.

We have comprehensive policies on compensation and benefits for employees throughout our global locations. These follow the local rules and regulations of the country where operations are based.

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

d) Suppliers:

Together with our subsidiaries, we foster beneficial, long-standing and growing relationships with all of our suppliers, based on mutual benefits and guided by good business ethics. We also want to work with our suppliers who operate in a fair, honest, and socially responsible manner. We have a responsibility to ensure that consumers can trust the safety and quality of our products. Suppliers are expected to, therefore, provide goods and services that meet all government and agreed-upon quality and safety standards.

Just as we have set standards for our business through our policies, we expect our suppliers, in addition to complying with all environmental regulations, to share our commitment to use resources responsibly; eliminate and reduce waste; minimize their carbon footprint; offer a selection of natural, organic and eco-friendly products; and develop facilities that align with environmental, community, and business needs.

They should ensure that they adopt and implement acceptable safety, product quality, labor, and human rights policies, and social and legal principles in line with our own policies and effectively 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.

The Supplier Code of Conduct was implemented to encourage our supply chain to acknowledge and implement universal standards. The

CGPAC Committee receives periodic reports from business units on the implementation status.

e) Creditors:

Together with our subsidiaries, we attempt to provide our creditors with full and accurate information about our progress, as required for smooth business dealings and to comply with all our obligations.

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 as a whole.

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 general 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 also participate in activities that support the environment and communities, and which promote and celebrate cultural diversity.

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

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

- A consistent supply of high-quality products and services to our customers
- That we create value for our investors
- That we provide a favorable work environment
- That we are a good community neighbor
- That 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 for our employees so they have a clearer understanding of environmental issues related to our business and can help reduce our 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 Company, through the Code of Conduct, adheres to ethical practices, honesty, and accountability, as well as a responsibility to all stakeholders and external agencies. The new CG Manual, effective from September 2019, now has one unified code for IVL directors and employees. Prior to this, there was a separate code of conduct for directors and employees. All of the Company's governance policies are now reflected through the Code of Conduct which eliminated overlap and duplication which existed previously and better ensures that our values are realized on a day-to-day basis. The training of the code is embedded in the training of the new Manual.

Prior to the new Manual, all directors and employees were made aware of their respective codes.

The Manual consists of, first, IVL's Vision, Mission and Values, which describe our commitment to being a responsible industry leader, and instilling pride and purpose in the workplace ensuring our position as a world-class chemical company. Second, the Corporate Governance Principles provide the foundations for sound, long-term oriented governance balancing the interests of a company's many stakeholders. Third, the Code of Conduct consists of specific and relevant policies grouped under four sections: 1) Ethical Practices; 2) Fair Business Practices; 3) Workplace Values; and 4) 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, among other things, IVL's strong position against bribery and corruption. As a global company, we must follow the highest standards of governance and for this reason; we have stipulated that we will abide by strict policies regarding corruption and bribery.

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 where appropriate.

The Collective Action Against Corruption (CAC) certification was first received by IVL in 2014 and successfully renewed in March 2021 for another three years. This was the second renewal. 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 created a strong anti-corruption culture and became a CAC certified company in Thailand.

An Anti-Corruption Assistance Package (the Assistance Package) was developed and shared with all units in 2020. Based on anti-corruption frameworks that are widely accepted, both in Thailand and internationally, the Assistance Package consists of a checklist and guidelines to streamline IVL's Anti-Corruption Policy, and complement and assist units in further building out their existing anti-corruption systems. This Assistance Package has been warmly received by the units and will help further reinforce the anti-corruption culture across IVL. Respective management at the local units were provided with detailed explanations of the Assistance Package, including trainings and short videos, to ensure there was a well-rounded understanding.

In 2021, the information on the Assistance Package along with the Anti-Corruption System Checklist and Corruption Risk Assessment provided by the units were included in the CG Database mentioned in the earlier section. This will allow all units to easily access and reference anti-corruption-related information. The CG Database also provides some good examples of how anti-corruption is being put into practice at various units which can allow other local teams to further improve their own systems.

We continuously hold training sessions in local languages providing employees with an easy communications option about our zero tolerance approach to corruption and to address practical guidelines and specific forms of corrupt activities that may arise in the course of our operations.

The Anti-Corruption Policy and education materials were uploaded on the Company's intranet and disseminated to overseas units to ensure that our policy is well-communicated, and the same standards and practices are made available worldwide. The CGPAC Team continuously monitors the progress of the training and awareness at all IVL sites and receives periodic feedback. To support these

continued efforts and to monitor the implementation of the Anti-Corruption Policy, the Internal Audit Department conducts checks across all units and functions and reports their findings to the Audit Committee.

l) Human Rights Policy:

IVL strongly respects all human rights. We are committed to both protecting and embracing human rights as embodied in the Universal Declaration of Human Rights and its two corresponding covenants, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights. We avoid any form of infringement on human rights, avoid complicity in human rights abuses by others, and comply with the laws of the countries where we operate.

We have zero tolerance for human rights violations and encourage all of our employees and stakeholders to report any form of human rights violations through available channels, e.g. whistleblower reporting channels or others. Any person who is in breach of this policy, including but not limited to, illegal employment of child labor, slave labor, acts of prejudice, discrimination, bullying and harassment, will be subject to internal disciplinary actions as per local laws and regulations.

In 2021, to continuously improve the implementation of the Human Rights Policy, IVL introduced the Declaration on Human Rights to be signed by all Business Heads and Site Heads, who are key players in implementing systems and processes to prevent and address any violation or potential violation to the Human Rights Policy. The declaration will provide evidence on the compliance level at all of IVL's operations and highlight areas where improvement is needed. If there is a non-compliance issue found at the site or business, the Business Heads and Site Heads have to disclose details of the issue and the actions taken to resolve it. The Internal Audit Department will examine the human rights practices based on the information provided in the declaration, which is made once each year with the results reported to the NCCG Committee and the Board. The Company will take all necessary and reasonable remediation steps to assist an employee if their human rights are violated by a third-party or an outsider.

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 either of their interests conflict, directly or indirectly, with those of the Company.

Directors also must neither be a partner in an ordinary partnership or with unlimited liability in a limited partnership, nor hold a directorship in a private or public company operating 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 of company securities holdings as required by the regulations.

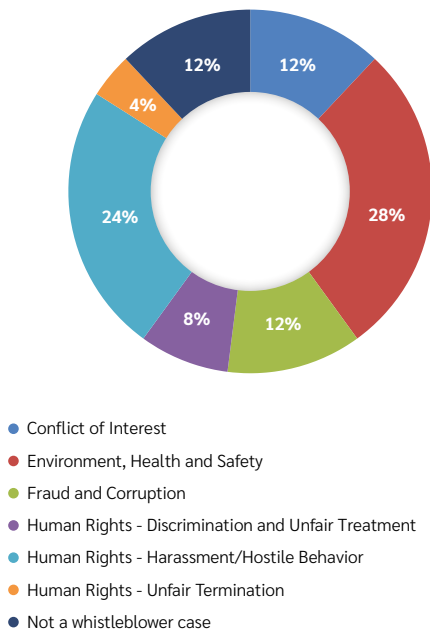
To support the implementation of the Conflict of Interest Policy at IVL's subsidiaries, the Conflict of Interest Assistance Package was developed and circulated to all units in June 2021. The CGPAC Team conducted three online communication sessions for local teams who are responsible for implementing the Assistance Package. To ensure they had a good understanding, the team also shared video recordings of the sessions to all units for their future reference.

n) Whistleblower Policy:

IVL has a "Whistleblower" policy that provides all employees the opportunity to raise issues on any unethical practice (whether or not a violation of law) to the Whistleblower Committee without necessarily informing their line managers and without revealing their identity. The policy has been communicated to all employees globally and uploaded on our website. Employees may contact the committee by e-mail to ethics@indorama.net, conventional mail directed to the Whistleblower Committee at IVL's Head Office in Bangkok, or by an independent website, whistleblower.indoramaventures.com. The main objective of these reporting channels is to provide anonymous reporting options for whistleblowers who can choose the channel they feel is most convenient and secure for them to report and communicate with IVL's Whistleblower Committee. In return, the committee guarantees the protection of whistleblowers whose identities remain confidential under all circumstances and that no action will ever be taken against a whistleblower for any reason whatsoever. This information has been strongly communicated to all business units.

In 2021, the Whistleblower Committee received 25 complaints. Seventeen cases have been resolved and five are still under an investigation while three are not whistleblower cases. The Whistleblower Committee, based on the findings and conclusions of the investigation, decided on appropriate corrective actions as needed with support from relevant parties. All cases carried over from 2020 have been resolved. The chart below depicts the categories of cases in 2021. A summary of the investigations and the actions taken were reported to the NCCG Committee and the Board of Directors.

Category of Cases Received in 2021



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 increase in the number of reportings reflect the awareness of the whistleblower mechanism which has been reinforced through numerous trainings. This will continue going forward.

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 2012 (PDPA).

o) Complaint Filing Channel for Stakeholders

The Company has opened a channel for all stakeholders to bring their concerns to independent directors by e-mail at independentdirectors@indorama.net. Internal and external stakeholders may also use this channel to raise complaints or comments on any issues.

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

p) Non-compliance with policies and guidelines:

Any individual who disregards or willfully breaches the Manual including, but not limited to, illegal behaviors that may not be

explicitly stated in the Manual, will be subject to local laws and regulations. The Company shall take appropriate actions against the individual as deemed fit and permitted by law.

Disclosures and Transparency

Our policy is to deliver all important and relevant Company information, both financial and non-financial, that may have an impact on the interests of shareholders or investment decisions. All such information is disclosed sufficiently, accurately, on a timely basis and transparently through easy-to-access channels that are fair and trustworthy, and complies with the relevant rules of the SEC/SET.

The communications channels used are the Form 56-1 One Report, management discussion and analysis (MD&A), press releases, the SET’s website, 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 and the Investor Relations and Corporate Communications Department. They provide information to interested parties on various occasions such as 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 Nomination, Compensation and Corporate Governance Charter defines the policy for the nomination of Directors of the Company and the policy on remuneration of Directors and management of the Company which is followed by the NCCG Committee and management team.

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

- Board Charter, January 26, 2021
- Audit Committee Charter, August 16, 2021
- Environment, Health and Safety Policy, May 14, 2021

The revised Charters were uploaded on our website.

The Board reviewed IVL's Vision, Mission and Values Statement and made changes as deemed necessary and approved by the Board in August 2021.

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

In 2021 and all previous years, the Company has never been accused by the SEC/SET of breaching any 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, annual 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 shareholdings. IVL maintains a calendar of all major events that investors or shareholders may wish to attend.

The individual shareholdings of Directors, Management including their spouses and minor children for the period January 1, 2021 to March 1, 2022 is as follows:

No.	Name	As at 31 Dec. 2020 No. of Shares	Ordinary Shares (Shares)			
			Changes in 2021	As at 1 March 2022		%
			No. of Shares	No. of Shares		
1.	Mr. Sri Prakash Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
2.	Mr. Alope Lohia	1,000,010	Acquisition/Disposition	-	1,000,010	0.018
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
3.	Mrs. Suchitra Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	1,000,010	Acquisition/Disposition	-	1,000,010	0.018
4.	Mr. Amit Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
5.	Mr. Yashovardhan Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
6.	Mr. Dilip Kumar Agarwal	439,981	Acquisition/Disposition	124,792	564,773	0.010
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
7.	Mr. Udey Paul Singh Gill	141,949	Acquisition/Disposition	44,532	186,481	0.003
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
8.	Mr. Sanjay Ahuja	101,033	Acquisition/Disposition	34,098	135,131	0.002
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
9.	Mr. Rathian Srimongkol	991,400	Acquisition/Disposition	-	991,400	0.018
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-

The Company implements recommendations made by the SEC, SET and IOD.

IVL has a designated department for investor relations to disclose essential information to investors on matters relating to financial reporting and others. An annual investor relations plan is established and the executive in charge engages in various investor relations activities, including, but not limited to periodic plant visits for the benefits of shareholders, investors and analysts, etc. Regular investor meetings are also organized.

To contact the Company's Investor Relations Department, the public may call (+66) 2 661 6661 ext. 134 or email ir@indorama.net. Details are provided on our website.

A statement of the Board's responsibility concerning the Company's financial report is disclosed in the Annual Report, which mentions, among other things, that the Company complies with generally accepted accounting principles and that accounting standards and practices used are appropriate and consistent to the nature of the business. It also states 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.

No.	Name	Ordinary Shares (Shares)				
		As at 31 Dec. 2020	Changes in 2021		As at 1 March 2022	
		No. of Shares		No. of Shares	No. of Shares	%
10.	Mr. William Ellwood Heinecke	4,534,932	Acquisition/Disposition	-	4,534,932	0.081
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
11.	Dr. Siri Ganjarende	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
12.	Mr. Kanit Si	300,000	Acquisition/Disposition	-	300,000	0.005
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
13.	Mr. Russell Leighton Kekuewa	750,000	Acquisition/Disposition	-	750,000	0.013
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
14.	Mr. Tevin Vongvanich	-	Acquisition/Disposition	100,000	100,000	0.002
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
15.	Mrs. Kaisri Nuengsigkapan	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
16.	Dr. Harald Link	-	Acquisition/Disposition	-	2,000,000*	0.036
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
17.	Mr. Alastair Mark Port	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
18.	Mr. Christopher Anthony Kenneally	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
19.	Mr. Klaus Holz	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
20.	Mr. Manoj Kumar Sharma	39,434	Acquisition/Disposition	10,803	28,631	0.001
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-

* Acquired ordinary shares before the appointment date

Reporting

IVL has a reporting policy in place for all directors and management, who must report their shareholdings every quarter to the Company Secretary, who in turn, writes a summary for the Board. The shareholdings include themselves, their spouses and minor children and any trading in IVL securities must be reported immediately to the Company Secretary. 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.

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 also 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 strategy as 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 for the year is thereafter approved by the Board of Directors. At the Board meetings and the many 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. Based on such meetings, the Board provides their thoughts and recommendations. The management updates are based on the regular Executive Committee meeting that each business segment holds on its operating performance.

The detailed roles and responsibilities of the Board are clearly set out in the Board of Directors Charter which is uploaded on the Company's website.

Board Approvals

The average attendance for Board meetings held in 2021 was approximately 98.15%. 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 the plans to improve performance. The Board follows up on the action 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 using several tools such as customer and supplier surveys, the results of employee training feedback surveys and others.

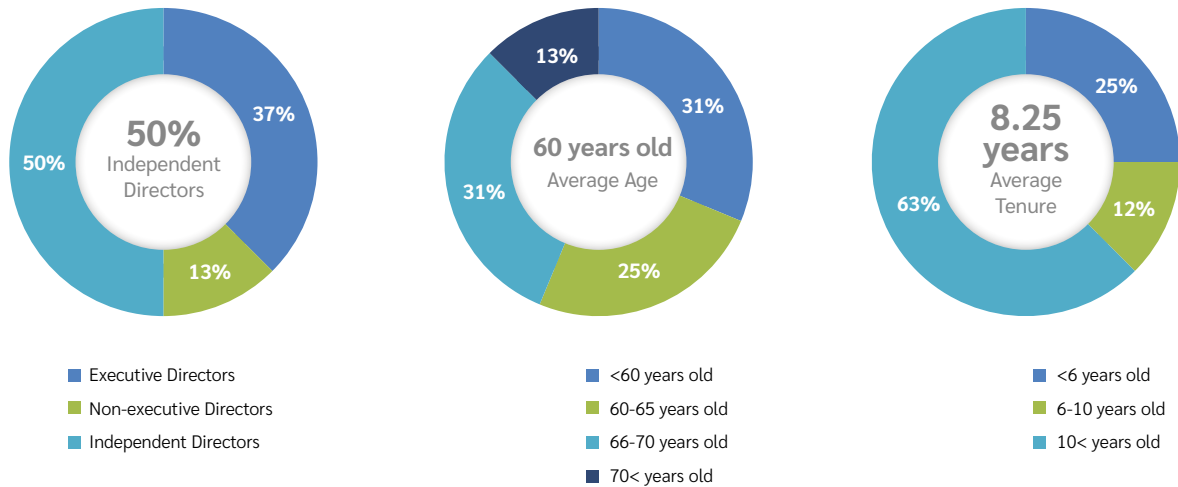
The Board, through the Audit Committee, internal auditor, and Corporate Compliance Department, reviews potential conflicts of interest. IVL's internal guidelines on related party transactions and the relevant rules and regulations of the SET/SEC provide a basis for avoiding conflicts of interest. Details 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 Board evaluates the efficacy and sufficiency of the Company's internal controls by reviewing the Evaluation Form – Sufficiency of Internal Control Systems for IVL and its subsidiaries which is reviewed by the Audit Committee and forwarded to the Board.

The Board, at the Strategic Business Plan meet in January, has the opportunity to meet and interact with senior executives from around the world including executives from new acquisitions.

The Company held its annual Capital Markets Day on February 10, 2021 to apprise 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



There are 16 Directors on the IVL Board comprising of six Executive Directors, two Non-Executive Directors and eight 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 in relation 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 to seek 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 its tasks of setting and implementing the Company's direction and strategy.

The Chairman plays a pivotal leadership role in ensuring that the Board works effectively. The key roles of the Chairman are:

- Determining the composition, size and structure of the Board to create a balance between executive directors and independent directors.
- Ensuring the Board and its committees are properly established, composed and operated.
- Ensuring the effective operation of the Board and its committees in conformity with the highest standards of corporate governance.

- Ensuring the participation of the executive, non-executive and independent directors in the Board's decision-making processes and activities.
- Ensuring the whole Board plays a constructive part in developing and determining the Company's strategy and objectives.
- Ensuring comprehensive induction programs for new directors.
- Acting in the key role of governing the Board and fostering teamwork and mutual dedication for the sustainable success of the organization.
- Engaging the Board regularly by assessing and developing its performance and communicating expectations to directors and managing the performance of directors.
- Ensuring that the Company has succession plans for senior executives.
- Acting as Chair at Board and shareholders meetings together with setting the agenda in consultation with directors, management and the Company Secretary.
- Ensuring that Board members receive accurate, timely, and sufficient information for Board meetings.
- Ensuring that there are sufficient channels for effective communications between Board members, management and shareholders.
- Providing independent advice to management and the Board.
- Appointing the Company Secretary to assist with Board functions.

In the 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 via the Annual Report and website. 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 meet the requirements and regulations of the SEC/SET. The Company Secretary is responsible for matters connected with meetings of the Board and shareholders and to advise and apprise the Board of relevant laws and regulations to effectively perform its duties, to administer the Board's activities and ensure the compliance of Board and shareholders' resolutions. The role and responsibility of the Company Secretary is available on the Company's website.

c) Charters

The Company has in place the following Charters:

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

The Charters are all uploaded on the Company website under the "Corporate Governance" section. During the year, the format of the Charters was standardized.

d) 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 2021.

e) Retirement of Directors

One third of the Directors retire by rotation at every Annual General Meeting as specified in the Articles of Association of the Company. 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, has acknowledged that the industry is extremely complex and requires many years of study in order 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 an important role in the Company. Replacing 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 and play their role as an independent director.

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

However, the NCCG Committee and the Board will take into consideration the IOD recommendation of independent directors' term of service as published from time to time 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. The Board approved in 2018 to fix the retirement age of Independent Directors at 72.

f) Evaluation of Performance

The Board and sub-committee members conducted a self-evaluation of the Board and sub-committee's performance in 2021. The results were summarized and discussed at the Board meeting held in February 2022. The Board and subcommittee members were evaluated as having given a particularly good performance rating in 2021.

For the self-evaluation of the Board, the Company follows the guideline prescribed by the SET which is based on the following six criteria, namely: 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.

A similar evaluation is conducted by the sub-committees.

The Chairman of the Board, through the NCCG Committee, conducts an individual assessment of all Directors based on the following criteria.

- Supports the mission, vision and aims/objectives of the organization.
- Understands IVL's main business and does not intervene in the objectives or work for any competitor.
- Understands the role of the Board and the legal and ethical responsibilities of a Board member.
- Usually attends regular and special board meetings and other events requiring board participation.
- Studies the agenda items before attending the meeting and ensures that information is sufficient to proactively consider the agenda.
- Carefully reviews all of the minutes of each Board of Directors and shareholder meetings.
- Examines all documents relating to all matters that concern the Board. If something is not clear, he/she asks management to explain as quickly and clearly as possible.
- Raises questions on important matters and gives suggestions and recommendations to management.
- Fulfills other committee responsibilities in an effective and timely manner.
- Ensures management's accountability to shareholders; preserves their rights and interests; clearly and fully discloses information.

- Attends all Board meetings and makes decisions on significant activities by the Company concerning the acquisition and disposition of assets, investment project expansion, policy implementation, and/or risk management, etc.
- Avoids participation in Board issues where it may be perceived there is a conflict of interest.
- Avoids other positions or jobs that may lead to conflicts of interest with the Company.
- Accepts only those positions as director or non-executive director on the Board of listed companies that allow sufficient time to attend meetings.
- Willing to participate in development opportunities, including workshops, information sessions and conferences, and in taking on new roles.
- Enjoys their service as a Board member in the organization or actively works to change issues or activities which are a barrier.

For Independent Directors

- Demonstrates independence of thought and judgment in order to protect the interests of all shareholders.

g) Functional Performance

The Board of Directors held eight meetings in 2021. The Company generally 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 well in advance and to also ensure maximum participation.

Under the Chairmanship of Mr. Rathian Srimongkol, Lead Independent Director, all the independent Directors met on January 26, 2021 to

review and discuss the Company’s performance and other matters. A similar meeting of the Independent Directors will be held on February 8, 2022. The Lead Independent Director updated the Group CEO on the outcome of their meeting and management initiated required actions.

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 Board member to express his or her views and management to answer all queries in full. If desired, Directors can request additional information from a designated person.

Detailed minutes are prepared for each meeting, which includes:

- the meeting date
- time of the meeting’s commencement and completion
- name of Directors who attended or were absent from the meeting
- summary proposals to the Board on each issue
- a brief report of the discussion
- Director’s observations
- the person authorizing the minutes

The minutes are circulated within 14 days of the Board meeting.

The summary of the minutes of subsidiary companies are provided to Board members as requested.

For 2021, the average attendance of all Directors was 98.15%.



The following are the details of attendance of the Board of Directors' meeting in 2021.

Name	Attendance/ Physical/ Online Meetings	Percentage (%)
1. Mr. Sri Prakash Lohia	8/8	100%
2. Mr. Alope Lohia	8/8	100%
3. Mrs. Suchitra Lohia	8/8	100%
4. Mr. Amit Lohia	8/8	100%
5. Mr. Yashovardhan Lohia	8/8	100%
6. Mr. Dilip Kumar Agarwal	8/8	100%
7. Mr. Udey Paul Singh Gill	8/8	100%
8. Mr. Sanjay Ahuja	8/8	100%
9. Mr. Rathian Srimongkol	8/8	100%
10. Mr. William Ellwood Heinecke	8/8	100%
11. Dr. Siri Ganjarerndee	8/8	100%
12. Mr. Kanit Si	8/8	100%
13. Mr. Russell Leighton Kekuewa	8/8	100%
14. Mr. Chakramon Phasukavanich	3/3	100%
15. Mr. Tevin Vongvanich	8/8	100%
16. Mrs. Kaisri Nuengsigkapien	8/8	100%
17. Mr. Michael George DeSombre*	2/3	66.67%
18. Dr. Harald Link**	1/1	100%

Remark:

* Mr. Michael George DeSombre was appointed as an IVL Director in place of Mr. Chakramon Phasukavanich on April 27, 2021, but resigned from the Board on Oct 31, 2021.

** Mr. Harald Link was appointed as an IVL Director in place of Mr. Michael George De Sombre on November 1, 2021.

h) 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 by the NCCG Committee.

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 will follow the same principles when evaluating their staff.

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

i) 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 2021, the total annual remuneration approved at the Annual General Meeting of Shareholders No. 1/2021 held on April 27, 2021 was an amount not exceeding 22,000,000 baht.

The actual remuneration paid in 2021 was 21,220,000 baht against the approved amount of 22,000,000 baht. The details of the remuneration paid are hereunder:

As Directors of the Company

No.	Independent/Non-Executive Directors	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Sri Prakash Lohia	75,000 per month	900,000
2.	Mr. Rathian Srimongkol	50,000 per month	600,000
3.	Mr. William Ellwood Heinecke	50,000 per month	600,000
4.	Mr. Chakramon Phasukavanich*	50,000 per month	200,000
5.	Mr. Amit Lohia	50,000 per month	600,000
6.	Dr. Siri Ganjarerndee	50,000 per month	600,000
7.	Mr. Kanit Si	50,000 per month	600,000
8.	Mr. Russell Leighton Kekuewa	50,000 per month	600,000
9.	Mr. Tevin Vongvanich	50,000 per month	600,000
10.	Mr. Kaisri Nuengsigkapien	50,000 per month	600,000
11.	Mr. Michael George DeSombre*	50,000 per month	300,000

No.	Independent/Non-Executive Directors	Amount Approved (Baht)	Actual Paid (Baht)
12.	Dr. Harald Link**	50,000 per month	100,000
Total			6,300,000

Remark: * Mr. Chakramon Phasukavanich's remuneration was paid up to April 2021 and Mr. Michael George DeSombre's remuneration was paid up to October 2021.

** Mr. Harald Link's remuneration was paid effective November 2021.

As Audit Committee Members

No.	Members	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Rathian Srimongkol	75,000 per month	900,000
2.	Dr. Siri Ganjarerndee	50,000 per month	600,000
3.	Mr. Tevin Vongvanich	50,000 per month	600,000
Total			2,100,000

As Nomination, Compensation and Corporate Governance Committee Members

No.	Members	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Russell Leighton Kekuewa	35,000 per month	420,000
2.	Mr. William Ellwood Heinecke	25,000 per month	300,000
3.	Dr. Siri Ganjarerndee	25,000 per month	300,000
4.	Mr. Kanit Si	25,000 per month	300,000
5.	Mr. Chakramon Phasukavanich*	25,000 per month	100,000
6.	Mrs. Kaisri Nuengsigkapan*	25,000 per month	200,000
Total			1,620,000

Remark: * Mr. Chakramon Phasukavanich's remuneration was paid up to April 2021 and Mrs. Kaisri Nuengsigkapan's remuneration was paid effective May 2021.

As Sustainability and Risk Management Committee Members

No.	Members	Amount approved (Baht)	Actual Paid (Baht)
1.	Mr. Rathian Srimongkol	25,000 per month	300,000
2.	Mr. Russell Leighton Kekuewa	25,000 per month	300,000
3.	Mr. Kanit Si	25,000 per month	300,000
4.	Mr. Tevin Vongvanich	25,000 per month	300,000
Total			1,200,000

Bonus to Directors for Performance in 2020

No.	Directors	Actual Paid (Baht)
1.	Mr. Sri Prakash Lohia	869,570
2.	Mr. Alope Lohia	869,570
3.	Mrs. Suchitra Lohia	579,710
4.	Mr. Amit Lohia	434,780
5.	Mr. Dilip Kumar Agarwal	579,710
6.	Mr. Udey Paul Singh Gill	579,710
7.	Mr. Sanjay Ahuja	579,710
8.	Mr. Rathian Srimongkol	869,570
9.	Mr. Maris Samaram	144,930

No.	Directors	Actual Paid (Baht)
10.	Mr. William Ellwood Heinecke	579,710
11.	Dr. Siri Ganjarerndee	579,710
12.	Mr. Kanit Si	579,710
13.	Mr. Russell Leighton Kekuewa	579,710
14.	Mr. Chakramon Phasukavanich	579,710
15.	Mr. Yashovardhan Lohia	579,700
16.	Mr. Tevin Vongvanich	579,710
17.	Mrs. Kaisri Nuengsigkapan	434,780
Total		10,000,000

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

j) Remuneration of Executives

The key principles followed by the NCCG Committee in determining the compensation are:

- To review and approve, on an annual basis, the evaluation process and compensation structure for the Company's Executive Directors. The Committee evaluates the performance of the Company's executive directors and approves the annual compensation, including salary, bonus and non-equity incentive compensation for them based on initial recommendations from the Group CEO. Moreover, the Committee maintains regular contact with IVL's leadership.
- To review and approve, on an annual basis, the corporate goals and objectives (KPIs) with respect to compensation for the Group Chief Executive Officer. The Committee shall evaluate, at least once a year, 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 incentive compensation (if any).
- To review and approve, on an annual basis, the evaluation process and compensation structure for the senior executives.

The Committee shall approve or may assign the Human Resources department to approve the annual compensation, including salary, bonus and 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 for the year and the percentage change from the prior year's bonus for senior executive officers are determined after an evaluation of the overall performance of the Company, the performance of the business or function 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 2021 was approximately 349 million baht.

a. Details of remuneration paid to the Group CEO and the CEO's are as follows:

(Million Baht)

No.	Name/ Position	2019			2020			2021		
		Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
1.	Mr. Alope Lohia, Group CEO	39.58	31.19	70.77	39.77	26.84	66.61	42.80	53.07	95.87
2.	Mr. Dilip Kumar Agarwal, Chief Executive Officer of Combined PET, IOD and Fiber business and Chief Financial Officer (Ad Interim)	39.18	29.43	68.61	39.32	25.45	64.77	60.75	41.50	102.25

b. Details of the remuneration to other Executive Board and Indorama Management Council (IMC) members consisting of Mrs. Suchitra Lohia, Mr. Udey Paul Singh Gill, Mr. Sanjay Ahuja, Mr. Roberto Bettini and Mr. Yashovardhan Lohia are as follows:

(Million Baht)

2019			2020			2021		
Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
78.10	62.93	141.03	80.98	61.28	142.26	82.23	68.53	150.76

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 and CEO of Combined PET, IOD, and Fibers business.

No compensation was paid to Directors in the form of shares.

k) 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, potentiality 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.

l) 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 free and frank discussions on the future direction of the Company. The Group Management Conference for 2021 was held virtually from January 28-29.

m) Professional Development of Directors and Management

Directors who join the Company during the year are given a Directors Orientation folder with complete information about the Company and its subsidiaries to assist them in getting well acquainted with the business, practices and procedures of the Company and their rights, duties and obligations as 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 Board members, 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 members of the Board to undergo applicable training programs.

In 2021, the following Board members attended the training programs below:

Name	Position	Program
Mr. Sanjay Ahuja	Executive Director and Interim Executive President Combined PET	E-Learning: Fundamentals Course - Young accountants should know, an accounting training institute, conducted by CPD Tutor
Mr. Michael George DeSombre	Independent Director	Director Certification Program (DCP) 183/2021

In addition, at the November 2021 Board meeting, the Global Risk Management and Business Continuity (BC) team gave a presentation to the Board on the existing and emerging risks that could affect IVL and advised they are organizing a training session by a third party in 2022.

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: 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 2021:



Program	CFO Mr. Dilip Kumar Agarwal*	Head of Accounting Mr. Manoj Kumar Sharma
Development course as prescribed by the SET	12 hours of e-Learning: CFO's Orientation Course (English Version) - Accounting and Financial Preparation (CFO's Orientation Course), Thailand Securities Institute (TSI), Stock Exchange of Thailand (SET)	7 hours of e-Learning: Fundamentals Course - Young accountants should know, an accounting training institute, conducted by CPD Tutor

Remark: Mr. Dilip Kumar Agarwal was appointed in place of Mr. Sanjay Ahuja effective January 1, 2022.

The Board also encourages senior management to attend training courses on corporate governance to enhance good governance within the Company.

Sub-Committees

The IVL Board has appointed the following three sub-committees: (a) Audit Committee; (b) Nomination, Compensation and Corporate Governance Committee; and (c) Sustainability and Risk Management Committee.

Audit Committee

The Audit Committee consists of three members with 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 Audit Committee held six meetings during the year with the attendance of members as follows:

Name	Attendance
Mr. Rathian Srimongkol*	6/6
Dr. Siri Ganjarerndee*	6/6
Mr. Tevin Vongvanich	6/6

Remark: * Mr. Rathian Srimongkol and Dr. Siri Ganjarerndee have accounting knowledge to review financial statements.

The role and responsibility of the Audit Committee are specified in the Audit Committee Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

The Chairman of the Audit Committee reported on the Committee's activities to the Board, immediately following its meetings. Between meetings, the Committee reviewed 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 Annual 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 is entrusted to conduct internal audit activities of the Company and its subsidiaries under the supervision of the Chief of Internal Audit. The Internal Audit Department reports functionally to the Audit Committee. A detailed plan for the year is formulated for units and approved by the Audit Committee which then periodically reviews the work of the Internal Audit Department against the plan and makes recommendations to management. In 2021, audits were conducted for all Thai units and several overseas units. The Secretary of the Audit Committee follows up on the implementation of recommendations and reports on progress to the Audit Committee and undertakes periodic checks to ensure compliance with statutory and regulatory requirements.

Nomination, Compensation and Corporate Governance Committee

The NCCG Committee consists of five members with Mr. Russell Leighton Kekuewa as Chairman. Other members of the Committee are Mr. William Ellwood Heinecke, Dr. Siri Ganjarerndee, Mr. Kanit Si and Mrs. Kaisri Nuengsigkapan. Mrs. Kaisri Nuengsigkapan was appointed in place of Mr. Chakramon Phasukavanich, who retired from the Board in April 2021. All members on the Committee are independent directors. The Board, at its meeting No. 4/2020 held on May 13, 2020, approved the reappointment of the NCCG Committee. The current term of the committee expires in May 2022.

Mr. Aloke Lohia, Group CEO, is an advisor to the NCCG Committee.

The Nomination, Compensation and Corporate Governance Committee held three meetings during 2021 with the attendance of members as follows:

Name	Attendance
Mr. Russell Leighton Kekuewa	3/3
Mr. William Ellwood Heinecke	1/3
Dr. Siri Ganjarerndee	3/3
Mr. Kanit Si	3/3
Mr. Chakramon Phasukavanich*	1/1
Mrs. Kaisri Nuengsigkapien*	2/2

Remark: * Mrs. Kaisri Nuengsigkapien was appointed in place of Mr. Chakramon Phasukavanich effective April 2021.

The role and responsibility of the NCCG Committee is specified in the NCCG Committee Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

A report from the NCCG Committee is separately disclosed in the Annual Report.

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 SRMC Committee held three meetings during the year with the attendance of members as follows:

Name	Attendance
1. Mr. Alope Lohia	4/4
2. Mr. Rathian Srimongkol	4/4
3. Mr. Dilip Kumar Agarwal	4/4
4. Mr. Udey Paul Singh Gill	4/4
5. Mr. Russell Leighton Kekuewa	4/4
6. Mr. Kanit Si	4/4
7. Mr. Tevin Vongvanich	4/4
8. Mr. Yashovardhan Lohia	4/4

The role and responsibility of the SRMC Committee is specified in the SRMC Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

A report from the SRMC Committee is separately disclosed in the Annual Report.

Selection and Appointment of Directors and Group CEO

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 shareholder shall vote for the election of each director in turn, person by person;
 - (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 persons 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 the 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 and Qualification of Independent Directors, available on the website.

Lead Independent Director

In continuation of good governance recommendations and practices, the Board, at its meeting in February 2018, approved the appointment of a Lead Independent Director. Mr. Rathian Srimongkol, Independent Director, Chairman of Audit Committee and Member of the Sustainability and Risk Management Committee, is the Lead Independent Director.

Details of the role and responsibilities of the Lead Independent Director are available on the Company's website under "Role and Responsibilities" in the Leadership section.

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 and have knowledge in the industry in which IVL operates.

Role and Responsibilities of the Group CEO

- Designated as the authorized person in administering the Company's business and/or day-to-day operations to be in line with the objectives, articles of association, policies, rules, regulations, instructions and resolutions of the Board of Directors Meeting and/or resolutions of the Shareholders' Meeting.
- Arrange and prepare the Company's business policies, business plans and budget to be proposed to the Board of Directors for approval and has a duty to report the progress of such approved business plans and budget to the Board of Directors according to the period specified by the Board of Directors.
- Manage the Company's business operations in line with business policies, business plans and budgets, and to meet the financial goals as approved by the Board of Directors.
- Establish performance goals, allocate resources and comply with policies for management.
- Ensure overall business growth in accordance with the Company's objectives and business plans.
- Maintain good relationships with the Company's stakeholders.
- Ensure compliance with the law and ethical standards and maintain transparency.
- Ensure the organization's public standing.
- Be the leader in marketing strategy.
- Determine, monitor and strengthen the organization's standards that are essential to maintain its competitive edge and create organizational value by continuously working to support the Company's people and products.
- Analyze current and potential overall global industrial conditions for hints of future changes within the industry and adjust the Company's strategy accordingly.

- Ensure appropriate returns to all stakeholders.
- Work closely with Chief Executive Officers, Chief Financial Officers and Chief Operating Officers of various business groups to deliver organizational value.
- Set up employee performance evaluation standards and review such standards periodically.
- Ensure effective implementation of the Board of Directors' resolutions.
- Recruit, appoint, remove, relocate, adjust, reduce or deduct salary or wages, impose disciplinary sanctions on officers and employees as well as dismiss officers and employees from their positions in accordance with the rules prescribed by the Board of Directors, except for executive officers or those in comparable or higher positions, which require prior approval from the Board of Directors.
- Approve the Company's normal financial transactions and debt restructuring transactions of short-term debts in the amount of not exceeding 500 million baht or long-term debts in the amount of not exceeding 250 million baht.
- Authorized to delegate authority to others to perform specific duties on his behalf. Such delegation of authority shall be within the scope of and in accordance with the power of attorney granted and/or shall be in accordance with the internal regulations, rules or instructions given by the Board of Directors and/or the Company. The authorization of duties and responsibilities of the GCEO shall not constitute an authorization or sub-authorization which may cause the GCEO or his authorized person(s) to be able to approve any transaction in which they, or any person who may have a conflict of interest (as defined in the notification of the Securities and Exchange Commission or the notification of the Capital Markets Supervisory Board), may have an interest or may gain benefit in any manner, or in which they may have any other conflict of interest with the Company or its subsidiaries, unless the approvals of such transactions are consistent with the policies and criteria approved by the Shareholders' Meeting or the Board of Directors Meeting.

Governance in Subsidiary 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, who has the requisite qualification suitable for such a business with no conflict of interest directly with the business of those subsidiaries. Such a representative shall manage and administer the business of such subsidiaries according to the regulations and procedures provided in the Articles of Association of the Company and of such subsidiaries and relevant

laws and also implement the policies, procedures, guidelines and recommendations of IVL.

The Corporate Secretarial Department keeps a summary of the corporate by-laws of all IVL subsidiaries and regularly monitors their compliance with those laws.

Moreover, key information of each subsidiary and associate company is maintained by the Corporate Secretarial Department with regular updates taken and changes to records made as required.

Every quarter, confirmation and updates are taken from all units on their compliance with various regulations and litigations, if any. A summary of the same is presented to the Audit Committee.

The Corporate Secretarial Department in Thailand has a dedicated senior staff 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 546 Board and shareholders' meetings in 2021 which are summarized below:

Region	No. of Companies	No. of Meetings
Asia	48	200
Europe	65	186
Americas	60	121
Africa and the Middle East	6	31
Australia	2	8

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.

Use of the Company's Internal Information

The Company has a written policy in place on the use of confidential and/or internal information so as to prevent any illegal use. The statement is prominently displayed at IVL's head office and at the offices and workplaces of all our subsidiaries, for the knowledge of all employees.

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 financial statements of the Company are required to make a declaration of their movement in shareholdings, including their spouse and minor children, to the Company Secretary. A summary

of the shareholdings is presented to the Board on a quarterly basis.

Each year, IVL Directors and executives submit to the Company Secretary a ‘Declaration of Interest’ form in a format approved by the Board, on their interest or a related person’s interest in the Company or its subsidiaries.

Details of IVL’s policy on the use of internal information can be found on the Company’s website under the “Corporate Governance” section and under the CG Manual and Policies section.

Audit Fee

The total audit fee and non-audit fee paid during 2021 for IVL and all its subsidiaries, jointly controlled entities and associates globally are as follows:

Particulars	Unit: Million Baht	
	2020	2021
1. The total audit fees for IVL and all its subsidiaries, jointly controlled entities and associates globally	208	211
a. Payment to KPMG Phoomchai Audit Ltd. and other member firms of KPMG Phoomchai Audit Ltd.	179	178
b. Other Audit firms	29	33
2. The total non-audit fees paid to member firms of KPMG International other than KPMG Phoomchai Audit Ltd. *	73	65

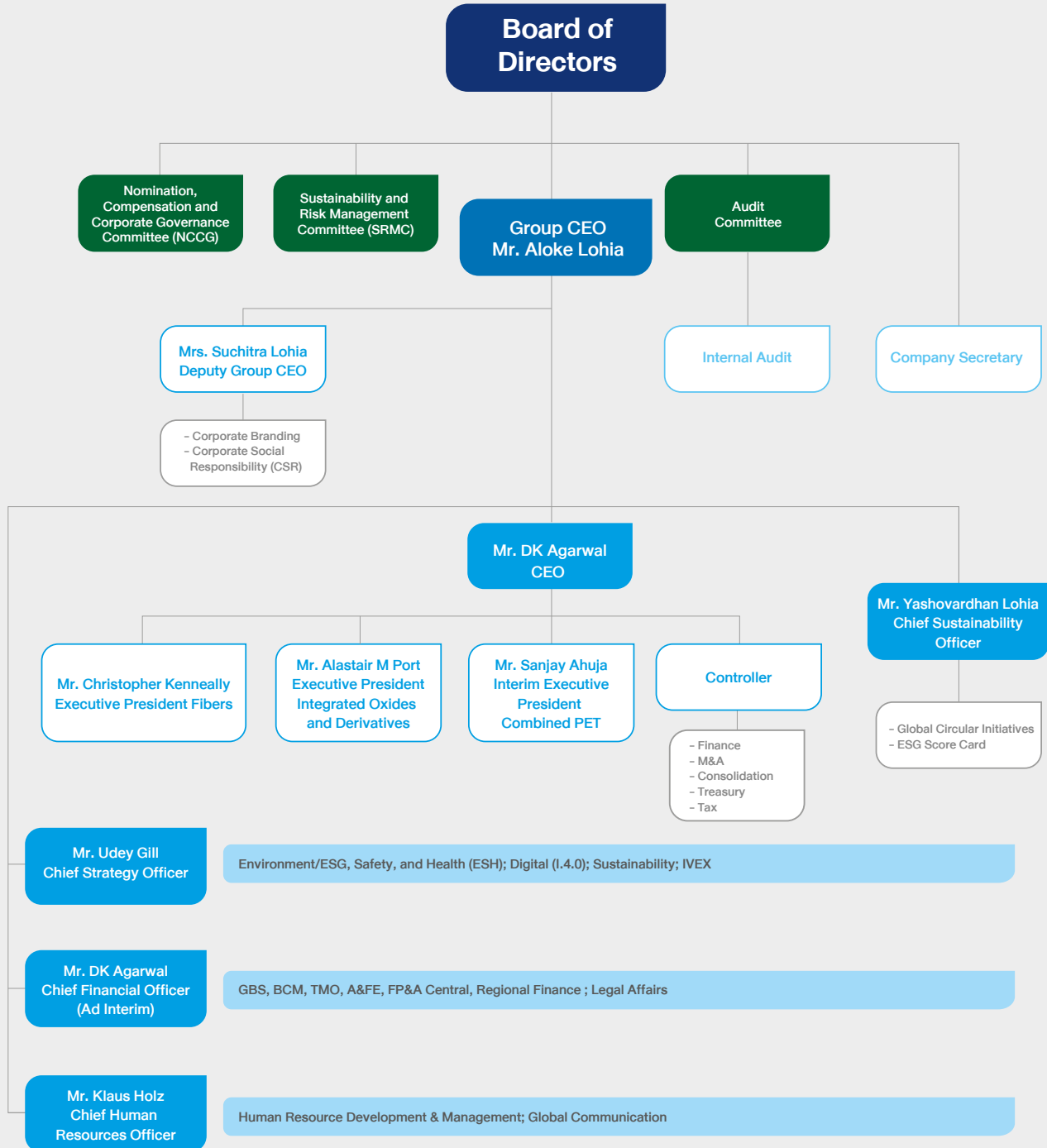
Remark: * The amount of non- audit fees relates to tax advice, due diligence in relation to the acquisitions, restructure, and other advisory services.

Our Company’s policies, integrity, ethics and disclosures always seek to emulate the best practices in corporate governance.





Management Structure



The Board of Directors

As of 31st December 2021, 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. Alope 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 Chairperson of the Corporate Social Responsibility Committee Deputy Group CEO 	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 Chief Sustainability Officer 	24 April 2019
6. Mr. Dilip Kumar Agarwal	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Chief Executive Officer of Combined PET, IOD and Fibers Business 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 Chief Strategy Officer 	27 April 2011
8. Mr. Sanjay Ahuja	<ul style="list-style-type: none"> Executive Director Interim Executive President Combined PET 	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. Mr. William Ellwood Heinecke	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	19 September 2009
11. Dr. Siri Ganjarende	<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
12. 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

Name	Position	Appointment Date of Directorship
13. 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
14. 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
15. Mrs. Kaisri Nuengsigkapien*	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	30 June 2020
16. Dr. Harald Link**	<ul style="list-style-type: none"> Independent Director 	1 November 2021

* Mrs. Kaisri Nuengsigkapien was appointed as a member of the Nomination, Compensation and Corporate Governance Committee in place of Mr. Chakramon Phasukavanich who retired by rotation at the Annual General Meeting no.1/2021, effective from 27th April 2021.

** Dr. Harald Link was appointed as an IVL Director in place of Mr. Michael George DeSombre at the Board Meeting no.7/2021, effective from 1st November 2021.

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 8 independent directors, (1) Mr. Rathian Srimongkol, (2) Mr. William Ellwood Heinecke, (3) Dr. Siri Ganjarende, (4) Mr. Kani Si, (5) Mr. Russell Leighton Kekuewa, (6) Mr. Tevin Vongvanich, (7)

Mrs. Kaisri Nuengsigkapien, and (8) 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".

Board Meetings

Meetings in 2021						
Name	Board of Directors (8 times)	Audit Committee (6 times)	Nomination, Compensation and Corporate Governance Committee (3 times)	Sustainability and Risk Management Committee (4 times)	Independent Directors (1 time)	AGM 2021
1. Mr. Sri Prakash Lohia	8/8	-	-	-	-	1/1
2. Mr. Alope Lohia	8/8	-	-	4/4	-	1/1
3. Mrs. Suchitra Lohia	8/8	-	-	-	-	1/1
4. Mr. Amit Lohia	8/8	-	-	-	-	1/1
5. Mr. Yashovardhan Lohia	8/8	-	-	4/4	-	1/1
6. Mr. Dilip Kumar Agarwal	8/8	-	-	4/4	-	1/1

Meetings in 2021						
Name	Board of Directors (8 times)	Audit Committee (6 times)	Nomination, Compensation and Corporate Governance Committee (3 times)	Sustainability and Risk Management Committee (4 times)	Independent Directors (1 time)	AGM 2021
7. Mr. Udey Paul Singh Gill	8/8	-	-	4/4	-	1/1
8. Mr. Sanjay Ahuja	8/8	-	-	-	-	1/1
9. Mr. Rathian Srimongkol	8/8	6/6	-	4/4	1/1	1/1
10. Mr. William Ellwood Heinecke	8/8	-	1/3	-	1/1	1/1
11. Dr. Siri Ganjarerndee	8/8	6/6	3/3	-	1/1	1/1
12. Mr. Kanit Si	8/8	-	3/3	4/4	1/1	1/1
13. Mr. Russell Leighton Kekuewa	8/8	-	3/3	4/4	1/1	1/1
14. Mr. Chakramon Phasukavanich*	3/3	-	1/1	-	1/1	1/1
15. Mr. Tevin Vongvanich	8/8	6/6	-	4/4	1/1	1/1
16. Mrs. Kaisri Nuengsigkapien**	8/8	-	2/2	-	1/1	1/1
17. Mr. Michael George DeSombre*	2/3	-	-	-	-	-
18. Dr. Harald Link***	1/1	-	-	-	-	-

* Mr. Michael George DeSombre was appointed as an IVL Director in place of Mr. Chakramon Phasukavanich who retired by rotation at the Annual General Meeting no.1/2021, effective from 27th April, 2021

** Mrs. Kaisri Nuengsigkapien was appointed as a member of the Nomination, Compensation and Corporate Governance Committee in place of Mr. Chakramon Phasukavanich who retired by rotation at the Annual General Meeting no.1/2021, effective from 27th April 2021

*** Dr. Harald Link was appointed as an IVL Director in place of Mr. Michael George DeSombre at the Board Meeting no.7/2021, effective from 1st November, 2021

Executives

As of 18th March 2022, IVL's executives are:

Name	Position
1. Mr. Alope Lohia*	Group Chief Executive Officer
2. Mrs. Suchitra Lohia*	Chairperson of Corporate Social Responsibility Committee and Deputy Group CEO
3. Mr. Yashovardhan Lohia	Chief Sustainability Officer
4. Mr. Dilip Kumar Agarwal*	Chief Executive Officer of Combined PET, IOD and Fibers Business and Chief Financial Officer (Ad Interim)
5. Mr. Udey Paul Singh Gill*	Chief Strategy Officer
6. Mr. Sanjay Ahuja*	Interim Executive President Combined PET
7. Mr. Alastair Mark Port*	Executive President Integrated Oxides and Derivatives
8. Mr. Christopher Anthony Kenneally*	Executive President Fibers
9. Mr. Klaus Holz*	Chief Human Resources Officer
10. 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.

Education

- Chartered Accountant, The Institute of Chartered Accountants of India, India
- Chartered Institute of Management Accountants London – Intermediate
- Bachelor of Commerce, University of Calcutta, India

Working Experience

- 2010 – Present: Indorama Ventures PCL

Duties and Responsibilities of the Company Secretary

The Company Secretary must perform the duties as prescribed in Section 89/15 and Section 89/16 of Securities and Exchange Act (No.4) B.E.2551, effective 31st August 2008 with responsibility, care and integrity and must comply with the laws, objectives, Articles of Association, resolutions of the Board of Directors as well as resolutions of Shareholders. The duties of Company Secretary prescribed by the laws are as follows:

1. Preparation and maintenance the following documents:
 - a. Registration of Directors
 - b. Notice of Board of Directors' Meetings, Minutes of Board of Directors' Meetings and annual reports
 - c. Notice of the Shareholders' Meetings and Minutes of Shareholders' Meetings
2. Keeping reports on interest filed by Directors or Executives and submitting a copy of such report on interest under Section 89/14 to the Chairman of the Board and Chairman of the Audit Committee for acknowledge within 7 business days from the date on which the Company has received such report;
3. Performing any other acts as specified in the notification of the Capital Market Supervisory Board.

In addition, the Company Secretary has the following additional duties as assigned by the Company:

- Providing basic advice pertaining to the securities laws and regulations and Articles of Association, monitoring compliance on a regular basis, and reporting any significant changes to the Board.
- Arranging Shareholders' Meetings and Board of Directors' Meetings in accordance with the laws, regulations and related best practices.
- Preparing minutes of the Shareholders' Meetings and the Board of Directors' Meetings, and monitoring subsequent compliance with the resolutions of those Meetings.
- Preparing and maintaining registrations of directors, annual reports, Notice of the Shareholders' Meetings, Notice of Board of Directors' Meetings, Minutes of the Shareholders' Meeting and the Board of Directors' Meetings.
- Maintaining reports of interest filed by directors and executives, and presenting such reports as specified by the relevant laws.
- Ensuring statutory compliances across all subsidiaries.
- Ensuring that corporate information disclosures to regulatory agencies are in accordance with the laws and regulations (both in Thai and English).
- Timely reporting of all necessary disclosures to the Securities and Exchange Commission (SEC) and Stock Exchange of Thailand (SET).
- Assisting with board activities including provide preliminary advice and recommendations pertaining to legal, regulatory, corporate governance issues and best practices related to the board and committees.
- Supporting directors to ensure that they all have sufficient information and knowledge to effectively fulfill their roles and responsibilities and reporting on these developments in the annual report.
- Frequently develops and updates the information relating to company secretary's duties.

Remuneration of Directors and Management

Please see the details under "Corporate Governance Report"

Personnel

- **Number of Employee**

As of 31st December 2021, the Company, including its affiliates and in accordance with its business structure, has total 25,760 employees as outlined below:

Type of Businesses	Numbers of Employees
Combined PET	8,354
Fibers (including Wool)	15,090
Integrated Oxides and Derivatives	1,589
Corporate Supports	727

- **Employee Benefits paid out in 2021**

Items	Amount (in Million Baht)
Wages, Salaries, Bonuses and Staff Welfare	33,690
Provident Funds	35
Long-term Employee Benefits	3,423
Other Long-term Benefits (EJIP)	22





IVL’s strategic HR priorities are listed in the CHRO letter to stakeholders. The following report highlights the key interventions and achievements in 2021.

2021 HIGHLIGHTS



88.58%
Retention Rate



82
Nationalities



22%
Female



708,106
Total Training Hours



29.92
Average Training Hours

2021 Employee Engagement Survey results

- Survey participation – **82.87%**
- Engagement score (Employee Net Promoter Score) – **76.20%**

IVL Leadership Development

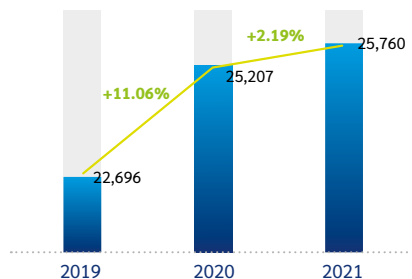
- **822 leaders** were trained in leadership development programs.
- **1,607 leaders** completed the e-Learning leadership training.

HR Function Capabilities

- Delivering value to the business and a positive employee experience by being integrated and digitally enabled.
- Contributing to professionalism and building HR function capabilities ensuring sustainable improvements in people practices.

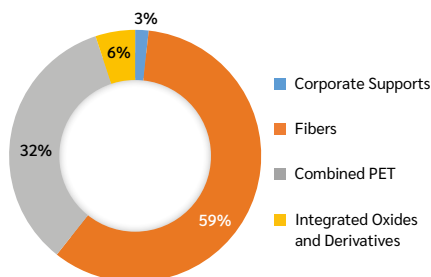
1. Our Global Workforce is Making a Difference

At IVL, we value our people. We have become a diverse and inclusive organization that continuously reinforces our team’s capabilities through individual, collective, and organizational development programs, ensuring their sustainable growth and capacity development. In a world that continues to be complex and uncertain, our employees continue to succeed and thrive in their work as part of the IVL family.

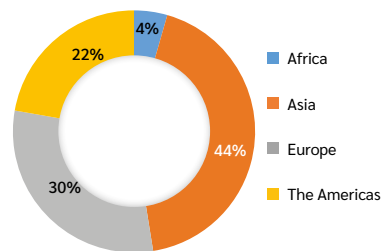


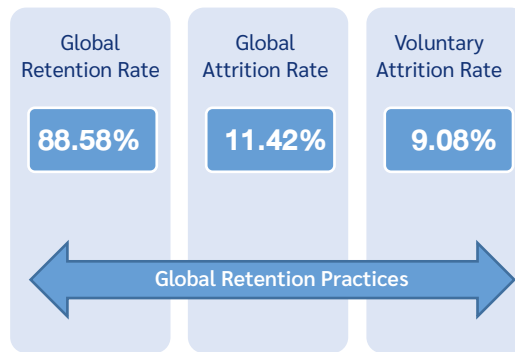
Our headcount grew by **2.19%** to **25,760**. We hired **3,295 employees** to reinforce our capabilities.

Permanent employees by segment



Permanent employees by continent

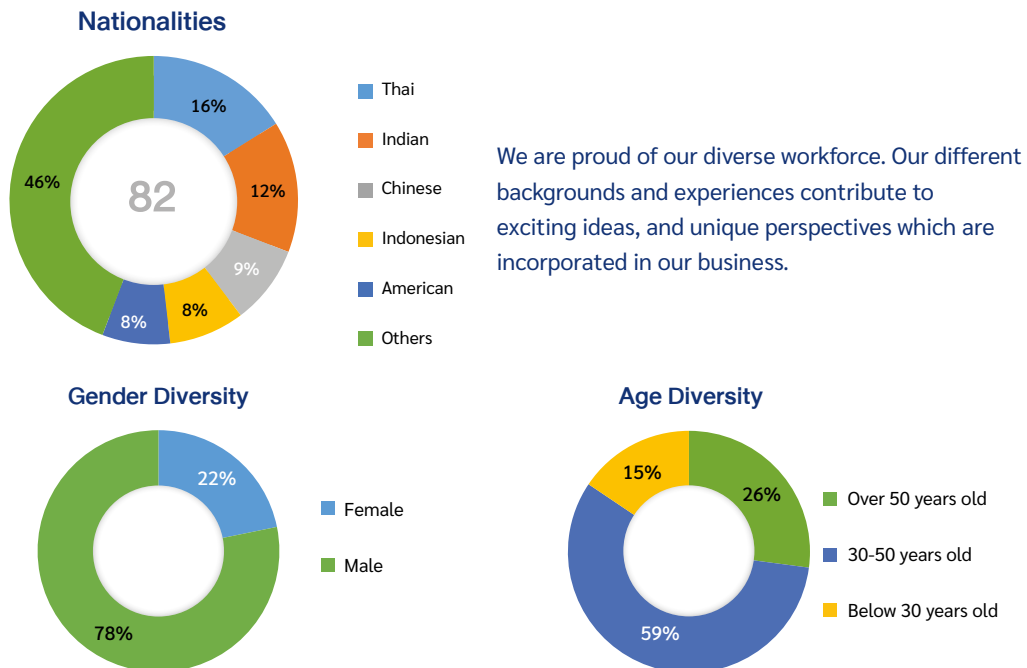




Since the global pandemic began in 2020, people throughout the world have been concerned about their health, well-being, jobs, and the impact that COVID-19 can have on their futures. Companies were having to deal with lockdowns, huge impacts to their finances and staffing concerns whether due to layoffs or employee turnover. In addition, as the pandemic progressed, many in the workforce decided to change their lifestyles or even locations due to the new way of working.

We developed retention programs through useful information gathered from various analytical resources. In 2021, we continued using these programs in units with the highest turnover rate in the last two years. A local assessment was conducted through our Global Employee Engagement Survey, geographic data and exit interview analyses, focus group discussions, and inputs from our senior leadership team. Local action plans were then developed based on shared best practices to retain qualified employees within those units.

2. Diversity is our Strength



IVL values diversity, and this is reflected in the membership of our top management group. The Indorama Management Council (IMC) includes representatives from the US, Europe, and Asia who bring a wide range of knowledge, skills and professional experiences. We also promote diversity and inclusion at all levels of the organization, including the disabled, by providing equal opportunities in sourcing and selection, learning and development, career development, and promotions. We take pride in our ability to connect the best from different cultures, backgrounds and experiences allowing our team to contribute exciting ideas and unique perspectives which are incorporated in our business for sustainable growth.

3. Engaged People

We launched our first Global Employee Engagement (GEE) Survey in 2015. Year-on-year, we have achieved high participation rates and improvements in our engagement scores.

In 2020, we redesigned the IVL Employee Engagement approach which expands employee experience touchpoints and other feedback channels allowing for a broader experience base while strengthening the evaluation's reliability.

The new approach also ensures closer collaboration of local HR and site management units to gain a common understanding of the new EE approach and to better drive our common goals.

The GEE survey is conducted every two years to allow for a thorough execution and follow-up of planned improvements. The last survey was conducted in 2021 with the results reflecting healthy engagement levels and positive trends:

- Survey participation 82.87%
- Employee engagement 73.90% (Actively engaged employees)
- Employee Net Promoter Score 76.20%
- Key engagement drivers
 1. Objectives and aspirations 75.68%
 2. Accountabilities and collaborations 78.77%
 3. People manager capabilities and interactions: 73.24%
 4. Performance management and recognition 63.88%
 5. Leadership 72.98%

Following the survey, the focus is on identifying improvement areas and executing actions at every site and plant through a collaboration between site/plant management and employees, facilitated by local HR.

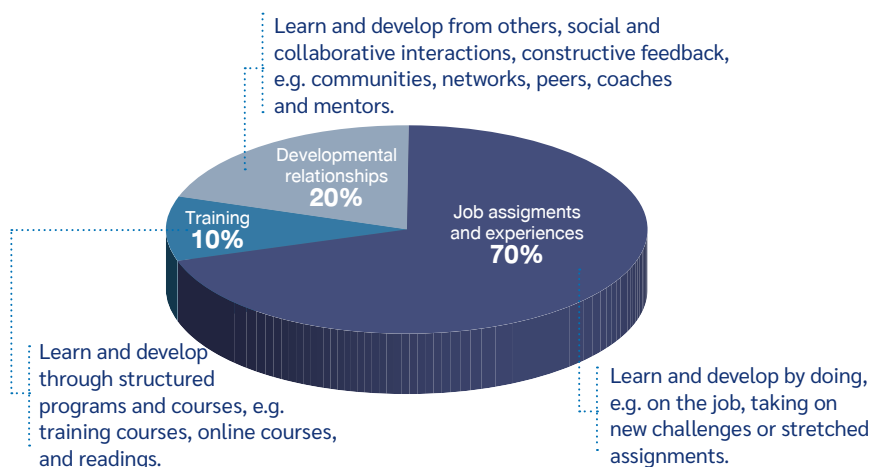
We disclose any misconduct or views about our processes and practices. In addition to local channels, an email address is provided on our website for employees to report potential breaches of Indorama Ventures' Values and Code of Conduct. The Ethics Council takes immediate action on these cases by maintaining the confidentiality of the whistleblower, and at the same time reports on such disclosures to the Nomination, Compensation & Corporate Governance (NCCG) Committee, which comprises Independent Board of Directors members.

4. People Development Opportunities

We promote a learning culture and a growth mindset where development is ongoing:

- Employees take ownership and drive their development.
- Managers facilitate, encourage and support the development of their employees.
- IVL, through our leaders, collectively create a dynamic, experiential and innovative environment for growth and learning.

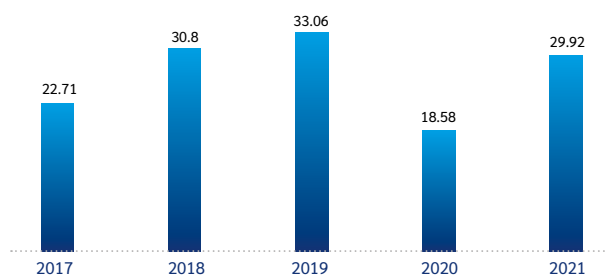
We recognize that there are different ways to learn and grow, depending on the development needs and an individual's learning style. Therefore, we promote a holistic learning and development approach, guided by a 70-20-10 ratio with the following types of development activities:



2021 highlights

Sr.	Initiatives	Outcomes
1	<p>IVL Leadership Development</p> <p>a. Leadership development is a strategic priority for IVL as quality leadership enables sustained business performance and high employee engagement.</p> <p>b. The IVL Leadership curriculum is designed to strengthen the Company by focusing on the IVL Leadership Skills Profile.</p> <p>c. Development is targeted by leadership level – Junior Management, Middle Management and Senior Leadership.</p> <p>d. The leadership curriculum consists of a portfolio of programs including leadership training, coaching, mentoring, internal mobility and other assignment/experience-based programs.</p>	<ul style="list-style-type: none"> 822 leaders were trained through virtual and in-person leadership training programs. 1,607 leaders completed e-learning leadership training. 12 junior and middle management leaders took part in a global mentoring program while 12 senior leaders were trained as mentors. We will expand the mentoring program to support leadership development and build our internal pool of quality mentors. The executive coaching program was extended to senior leaders to support career transitions and accelerate leadership development.
2	<p>HR Functions and Capabilities</p> <p>a. HR is recognized for delivering value to the business and a positive employee experience by being integrated and digitally-enabled.</p> <p>b. Contributing to professionalism and building HR functions and capabilities ensuring sustainable improvements in people practices.</p> <p>c. Setting regular meetings of HR Management as the governance, review and decision-making body on group-level HR matters and the status of HR projects.</p>	<ul style="list-style-type: none"> Key subjects were discussed, and decisions taken at regular monthly and ad hoc HR Management meetings. Timely and purpose-driven engagement of local HR through webinars and workshops to ensure improved communications, engagement and alignment. Ongoing development of HR capabilities: <ul style="list-style-type: none"> Basic petrochemical industry knowledge Fundamental project management for HR Heads at every IVL site/entity M&A for representatives in each area IVL Group HR policies and processes SAP SuccessFactors adoption
3	<p>Customized training/programs</p> <p>a. Pre-assignment training for new expatriates to support assimilation and cultural awareness.</p> <p>b. A new global English language training campaign to support employee development and adoption of systems platforms.</p> <p>c. Training based on client-specific needs.</p> <p>d. IVL Thailand's Top Talent Project.</p>	<ul style="list-style-type: none"> Pre-assignment training was rolled out for 13 new expatriates. English language training was designed and ready for implementation in 2022. IVL Thailand's Top Talent Project was initiated to foster learning and development of our high potential employees. A total of 59 talents were selected and are going through targeted programs to support and accelerate their development.

Number of training hours per employee



Training hours by categories

Categories	Training hours
Leadership curriculum	27,573
Mandatory programs	301,340
Functional/Technical trainings	379,193
Total	708,106

5. Succession planning

The global succession planning process was designed and launched in 2019 to meet the organization's needs by building a robust pipeline of competent candidates ready to fill critical positions. Our ambition is to have two successors ready in two years for every position in scope. Every successor has a targeted and active individual development plan to support their readiness.

In 2019, we started with 39 senior management positions and validated 68 successors. In 2021, the process was successfully implemented for middle management level positions which expanded to 266 with 516 validated successors. We also deployed the new ERP (SAP SuccessFactors) to manage the process. Our continued focus on diversity and building a young and talented pool also resulted in solid progress over the past year.

Going forward, we will continue to expand this process to the positions with our site and plant management teams.

In consultation with the NCCG committee, the Board reviews both the adequacy of the succession planning process and the plan for the Group CEO and Executive Board positions. For other key positions, IVL ensures successful leadership transitions through a constant process of developing the next generation of leaders.

6. Compensation and Rewards

Our 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 at the Company, business unit, and individual levels. In 2021, we conducted job evaluations for site leadership positions and are rolling out a pay review process in 2022 in our compensation system (which is in SuccessFactors) with the implementation of market benchmarking for site leadership positions across all plants in IVL Group.

The **IVL Performance Excellence Award** is a significant initiative to sustain and improve employee engagement and is meant to inspire our employees to challenge all boundaries and produce outstanding results. Underway since 2017, this award is based on stellar performance across 10 criteria based on: Financial Performance, Operational Performance, and Sustainability Performance (environment, health and safety). The best Business Units are identified by benchmarking their performance across these criteria and awarded at the IVL Group Management Conference (GMC) while cash incentives are also provided to employees of these units to recognize their excellent teamwork.

The **IVL Culture Award** is a significant initiative to build a shared understanding of the behaviors associated with our values by celebrating employees and teams that exemplify our core principles. We value the results we deliver together and the way they are delivered. Our culture and values reflect the behaviors each of us brings to work every day, and they are the foundation of our success – in the past, today, and in the future. The awards are focused on five categories: Customer-centric, Responsibility, Driving Diversity, Change Enabler, and Leadership. Two program categories, Change Enablers and Leadership, were piloted for the first time in 2021. Employees worldwide nominated their colleagues to HR and the selection process committees at both the Site and Vertical levels, and the Group winners were finalized and awarded at the IVL Group Management Conference (GMC).

GCEO remuneration to average employee remuneration ratio:

	Remuneration 2021
GCEO (in THB 000)	95,876.19
Average Employee Remuneration (in THB 000)	1,566.55
Ratio	61.20

7. Human Rights

IVL respects the human rights of all of 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 survey in 2015 on human rights, continue to work on action plans to mitigate perceived risks, and also engage with our suppliers on their commitment to address human rights issues. Our respective units have taken the 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 2021:-

Connected Party & Relationship	Type of Transaction	(Amount in MB)		
		2019	2020	2021
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. 	<ul style="list-style-type: none"> Sale of raw materials/ products/ services/utilities 	1,547.92	2,587.95	3,718.1
	<ul style="list-style-type: none"> Purchase of raw materials/ products/ services/utilities 	2,552.35	346.19	617.57
PT. Indorama Petrochemicals, Indonesia (PTIP)*	<ul style="list-style-type: none"> Sale of raw materials/ products/rendering of services 	0.00	0.00	0.00
* From January 2019, PTIP has become an indirect wholly-owned subsidiary of IVL and thus no longer a connected party.	<ul style="list-style-type: none"> Purchase of raw materials/ products/ services 	0.00	0.00	0.00
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	54.78	54.68	133.48
Pacific Resources Ltd. Thailand Mr. Anuj Lohia, son of Mr. Alope Lohia ² , is a major shareholder of Pacific Resources Ltd..	Service expense (Office Lease)	8.40	7.61	7.61
Cryoviva (Thailand) Ltd., Thailand Mr. Alope Lohia ² 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 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 of IU 	Service expense (Office Lease)	1.02	1.02	1.05

Connected Party & Relationship	Type of Transaction	(Amount in MB)		
		2019	2020	2021
Lohia Global Holdings Limited, Hong Kong-China Lohia Global Holdings Limited is owned by Ms. Shruti Lohia, a daughter of Mr. Sri Prakash Lohia ¹ , and Mr. Krishan Kumar Aggarwal.	Service expense (Royalty Fee for Indorama trade name)	175.44	204.86	228.42
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)	77.61	78.23	83.53
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	8.43	10.11	42.03
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)	9.29	3.82	7.93
PT. Tigadya Minergy, Indonesia The majority shareholding of PT. Tigadya Minergy is ultimately controlled by Mr. Sri Prakash Lohia ¹ .	Purchase of coal	235.24	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.	<ul style="list-style-type: none"> Sale of raw materials/ products/ services/utilities Sale of raw materials/ products/ services/utilities 	48.52	9.64	0.87
		39.51	26.80	58.89
Indorama Synthetics (India) Limited (IRSL) Mr. O.P. Lohia, a major shareholder of Indorama Synthetics India Ltd. is brother of Mr. Alope Lohia.	Sale of Yarn	0.00	0.00	428.30
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.	20.00	11.50	23.00

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. All connected transactions are reviewed and confirmed by the Internal Audit department.



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 in accordance with generally accepted and consistently applied accounting standards in-line with the rules and regulations of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET), as well as any other relevant legislation. The responsibilities of the AC include reviewing the Company's performance in compliance with Corporate Governance principles, maintaining suitable, effective, and adequate internal control and audit systems, the selection and recommendation of an external auditor, and any other tasks as assigned by the Board of Directors.

The Company's in-house Internal Audit Department (IAD) reports to the AC. The IAD is responsible for reviewing the adequacy and effectiveness of the internal control systems for Indorama Ventures Public Company Limited (IVL) and its subsidiaries. The department

reports its findings and recommendations to management and the AC. The assurance reviews are performed regularly to ensure the existence and management of an effective system of internal controls at all levels of the Company and their documentation in IVL's Sufficiency of Internal Control System Evaluation Form.

The Board of Directors, at Meeting No. 1/2022 held on January 26, 2022 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 2021 and observed the internal control systems to be adequate. 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 arriving at employee performance goals and objectives at all of the operating entities as well as the steps to be followed to achieve the Company's objectives, which are periodically reviewed. The Company has a well-structured organization in place that delineates the individual's responsibility for key businesses and other functions. All employees have been provided with the IVL Policy Handbook, which contains all of the policies that facilitate an improved control environment. IVL has a detailed Code of Conduct, namely the Code of Conduct for Directors, and the Code of Conduct for Employees. These Codes of Conduct apply to all directors and employees of Indorama Ventures PCL and its subsidiaries and affiliates. All new employees sign-off on the Code of Conduct, which is provided to them as part of their orientation program. The Code of Conduct for Employees and Directors 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 that such information is not divulged 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 global business operations honestly, fairly, 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). The SRMC 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 to ensure the implementation of robust business processes, procedures and policies. In addition, there is an effective process to evaluate and advise the Board of significant risks and uncertainties 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 by reference to its charter and current best practices. The SRMC also reviews the sensitivity analysis of the business plan, and 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) which was established in early 2021. The primary role of the council is to serve as the central platform to assist the IMC, SRMC or Board in identifying and deliberating about principal risks, key emerging risks and other pertinent risk matters including high investment value risk assessments, reviewing governing documents at the Group level and

providing assurance on enterprise risk, and implementing crisis & business continuity management group-wide to protect, safeguard and drive IVL's interests.

Control Activities

IVL's operating entities have policies and procedures with regard to general management, procurement, sales and marketing, and financial activities. These, together with the financial authority manual, ensure that adequate controls and checks are exercised by management to operate efficiently and mitigate the risk of fraud or misappropriations. There is an adequate segregation of duties with respect to the authorizations, recording and custody of assets at all the entities. There is an internal policy on connected transactions which very clearly stipulates what constitutes a connected transaction, who falls under the definition of a connected/related party and the procedures to be followed in case the Company enters into a connected transaction. All connected transactions have to follow the rules and regulations of the SEC/SET, whereby, depending on the size of the transaction, 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 the overall objectives of IVL. The IVL Board is regularly briefed on the performance of its subsidiaries. The minutes of subsidiary entities are provided at each quarterly meeting of the Board. Compliance confirmation is obtained from the respective Plant Head confirming the status of compliance with all 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.

Information and Communications

The Company and management ensures that adequate and sufficient 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, covering all aspects of the discussions, and are reviewed by all directors and signed-off by the Chairman of the Meeting. The Company Secretary and the AC Secretary fulfill any requirements and provide information needed to assist the Directors. IVL has a Whistleblower Policy which provides different ways for employees to report anonymous complaints. The Legal & Secretarial Department of the Company 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 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 consideration and approval. IVL's management evaluates the capability of the internal control system on an annual basis and updates it accordingly to reflect the evolving needs of the business.

The Company's in-house IAD formulates the annual internal audit plan which is approved by the AC. The risk-based audit plan considers several risk factors and the results of previous internal audit business process reviews. The annual Internal Audit plan is also discussed with the Company's senior management and ultimately 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 to the personnel responsible for implementation through the 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. The IAD has completed the Control Self-Assessment Questionnaires (CSAs)

for six business processes at IVL and its subsidiaries and affiliates and is in the process of rolling out the seventh CSA on the "Human Resource and Payroll" process. The IAD reviews the completed CSAs by the business entities and periodically reports on their compliance to the AC. The CSA approach facilitates a "Risk Awareness Culture" among employees working across IVL's entities globally.

Head of Internal Audit and Head of Corporate Compliance

1. Head of Internal Audit

The Company has its own IAD. The Internal Audit Manual, a document governing the activities of the IAD, describes the International Professional Practices Framework, Standards and Internal Audit planning and execution process. The AC has the authority to approve the appointment, transfer and dismissal of the Head of Internal Audit. Mr. Narayanaswamy Subramanian heads the IAD at IVL.

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, regulations and Company policies.



Details of Head of Internal Audit, Company Secretary and Head of Corporate Compliance

Information	Head of Internal Audit	Company Secretary and Head of Corporate Compliance
Name-Surname	Mr. Narayanaswamy Subramanian	Mr. Souvik Roy Chowdhury
Position	Head of Internal Audit	<ul style="list-style-type: none"> Company Secretary Head of Corporate Compliance
Education	<ul style="list-style-type: none"> Chartered Accountant, The Institute of Chartered Accountants of India Chartered Institute of Management Accountants London – Intermediate Bachelor of Commerce University of Madras, India 	<ul style="list-style-type: none"> Chartered Accountant, The Institute of Chartered Accountants of India Chartered Institute of Management Accountants London – Intermediate Bachelor of Commerce University of Calcutta, India
Working Experience	<ul style="list-style-type: none"> 2009 – Present Indorama Ventures PCL 2007-2009 Standard Chartered Bank Scope International 1996-2007 Indorama Polymers PCL 	<ul style="list-style-type: none"> 2010 – Present Indorama Ventures PCL 2019 – Present Director IVL Foundation 2020 – 2021 Co Chair Trade and Investment Committee The American Chamber of Commerce in Thailand 2020 – 2021 Director Irish-Thai Chamber of Commerce 2015 – 2019 Vice President of India Thai Chamber of Commerce
Relevant Training Program	None	<ul style="list-style-type: none"> Director Certification Program Class No.113/2010, Thai Institute of Directors, Thailand



Financial Statement



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 2021, 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 2021 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 issued by the Federation of Accounting Professions that is relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. 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.

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 2021, the Group had goodwill of Baht 17,411 million.</p> <p>The cash generating units (“CGU”) to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (discounted cash flow (“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 CGU 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 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, related safeguards.

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.



(Sumate Jangsamsee)
 Certified Public Accountant
 Registration No. 9362

KPMG Phoomchai Audit Ltd.
 Bangkok
 26 February 2022

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

Assets	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Current assets					
Cash and cash equivalents	6	16,215,255	18,948,524	220,032	999,041
Current investments		240,503	441,859	-	-
Trade accounts receivable	5, 7	53,171,894	33,421,605	-	-
Other receivables	5	3,294,585	1,969,144	763,186	643,880
Short-term loans to related parties and interest receivable from related parties	5	30,229	126,685	6,598,283	6,896,962
Inventories	8	88,978,968	53,938,487	-	-
Other current financial assets	37	913,843	1,079,238	1,157	223,189
Other current assets	9	14,013,833	9,909,126	99,338	78,287
Total current assets		176,859,110	119,834,668	7,681,996	8,841,359
Non-current assets					
Other non-current financial assets	37	983,276	2,192,993	-	-
Investments in subsidiaries	10	-	-	66,587,539	66,587,539
Investments in joint ventures	11	3,488,727	2,954,889	-	-
Other long-term investments		114,348	108,547	-	-
Long-term loans to related parties	5	-	165,888	103,003,840	89,816,840
Property, plant and equipment	14	291,676,937	264,290,944	-	-
Right-of-use assets	15	11,450,241	11,865,311	-	-
Goodwill	17	17,410,642	15,385,817	-	-
Intangible assets other than goodwill	18	33,869,300	31,230,646	-	-
Deferred tax assets	34	2,657,019	2,611,676	-	-
Other non-current assets	5, 19	3,318,640	2,530,127	-	-
Total non-current assets		364,969,130	333,336,838	169,591,379	156,404,379
Total assets		541,828,240	453,171,506	177,273,375	165,245,738

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	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Current liabilities					
Bank overdrafts and short-term loans from					
financial institutions	20	26,618,760	20,725,611	-	-
Trade accounts payable	5, 21	90,264,934	57,782,561	-	-
Current portion of long-term loans from					
financial institutions	20	9,587,605	8,919,764	771,511	112,274
Current portion of debentures	20	7,783,798	7,583,570	6,532,924	6,487,787
Current portion of lease liabilities	20	1,831,286	1,713,584	-	-
Income tax payable		3,029,659	1,448,921	-	-
Other current financial liabilities	37	237,517	356,500	-	-
Other current liabilities	5, 22	21,767,174	18,630,862	452,241	392,697
Total current liabilities		161,120,733	117,161,373	7,756,676	6,992,758
Non-current liabilities					
Long-term loans from financial institutions	20	101,076,195	99,448,030	8,439,452	8,876,390
Long-term loans from related party	5	-	-	6,000,000	-
Lease liabilities	5, 20	8,511,974	8,944,466	-	-
Debentures	20	68,816,685	64,625,428	51,372,709	47,924,444
Deferred tax liabilities	34	19,902,549	16,685,868	152,642	131,575
Non-current provisions for employee benefits	23	7,499,690	7,658,473	-	-
Other non-current financial liabilities	37	2,331,901	1,485,726	61,999	136,321
Other non-current liabilities		1,565,085	1,554,357	-	-
Total non-current liabilities		209,704,079	200,402,348	66,026,802	57,068,730
Total liabilities		370,824,812	317,563,721	73,783,478	64,061,488

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	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Equity					
Share capital:					
Authorised share capital					
<i>(5,666,010 thousand ordinary shares, par value at Baht 1 per share)</i>		5,666,010	5,666,010	5,666,010	5,666,010
Issued and paid-up share capital					
<i>(5,614,552 thousand ordinary shares, par value at Baht 1 per share)</i>		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		812,566	(400,807)	619,770	571,397
Translation reserve		(6,036,111)	(16,361,922)	-	-
Excess of cost over book value					
of acquired subsidiaries		(4,115,246)	(3,758,268)	-	-
Differences arising from common					
control transactions		(1,235,562)	(1,235,562)	-	-
Retained earnings					
Appropriated					
Legal reserve	24	6,508,016	5,303,490	566,601	566,601
Unappropriated		81,984,265	62,257,320	21,452,782	19,195,508
Subordinated perpetual debentures	25	14,904,758	14,904,758	14,904,758	14,904,758
Equity attributable to owners					
of the parent		158,768,672	126,654,995	103,489,897	101,184,250
Non-controlling interests	13	12,234,756	8,952,790	-	-
Total equity		171,003,428	135,607,785	103,489,897	101,184,250
Total liabilities and equity		541,828,240	453,171,506	177,273,375	165,245,738

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	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Revenue					
Revenue from sales of goods	5	468,108,318	331,512,907	-	-
Dividend income	5, 10	-	-	7,363,503	6,372,694
Net foreign exchange gain		-	119,441	14,043	45,123
Gain on bargain purchase	4	-	1,806,350	-	-
Other income	5, 27	4,748,889	3,031,480	552,665	626,182
Total revenue		472,857,207	336,470,178	7,930,211	7,043,999
Expenses					
Cost of sales of goods	5, 8, 28	383,127,953	287,881,873	-	-
Distribution costs	5, 29	27,849,597	21,161,682	-	-
Administrative expenses	5, 30	19,172,671	17,542,282	497,765	469,329
Management benefit expenses	5, 31	321,021	309,319	17,720	23,220
Net foreign exchange loss		297,183	-	-	-
Total expenses		430,768,425	326,895,156	515,485	492,549
Profit from operating activities		42,088,782	9,575,022	7,414,726	6,551,450
Finance income	5	215,744	192,039	3,285,548	2,975,661
Finance costs	33	(7,120,662)	(7,673,861)	(2,481,582)	(2,231,194)
Impairment loss of property, plant and equipment and right-of-use assets	14, 15	(290,031)	(624,946)	-	-
Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net	5, 7	(97,072)	(54,126)	10,671	(8,866)
Share of net profit of joint ventures accounted for using equity method	11	160,235	142,812	-	-
Profit before tax expense (income)		34,956,996	1,556,940	8,229,363	7,287,051
Tax expense (income)	34	6,703,254	(1,243,122)	28,628	40,486
Profit for the year		28,253,742	2,800,062	8,200,735	7,246,565
Profit attributable to:					
Owners of the parent		26,288,027	2,414,276	8,200,735	7,246,565
Non-controlling interests	13	1,965,715	385,786	-	-
		28,253,742	2,800,062	8,200,735	7,246,565
Earnings per share					
Basic earnings per share <i>(in Baht)</i>	35	4.55	0.30	1.33	1.16

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	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Profit for the year		28,253,742	2,800,062	8,200,735	7,246,565
Other comprehensive income					
<i>Items that will be reclassified subsequently to profit or loss</i>					
Exchange differences on translating financial statements		14,916,277	(706,763)	-	-
Net gain (loss) on cash flow hedges		1,420,286	(1,188,316)	74,323	(64,027)
Net gain (loss) on hedges of net investments in foreign operations		(2,845,836)	862,462	(13,857)	(99,307)
Income tax relating to items that will be reclassified subsequently to profit or loss		(109,952)	90,772	(12,093)	32,667
Total items that will be reclassified subsequently to profit or loss		13,380,775	(941,845)	48,373	(130,667)
<i>Item that will not be reclassified subsequently to profit or loss</i>					
Gain (loss) on remeasurements of defined benefit plans	23	755,641	(797,166)	-	-
Income tax relating to item that will not be reclassified subsequently to profit or loss		(157,271)	180,259	-	-
Total item that will not be reclassified subsequently to profit or loss		598,370	(616,907)	-	-
Other comprehensive income (expense) for the year, net of tax		13,979,145	(1,558,752)	48,373	(130,667)
Total comprehensive income for the year		42,232,887	1,241,310	8,249,108	7,115,898
Total comprehensive income attributable to:					
Owners of the parent		38,414,116	1,053,986	8,249,108	7,115,898
Non-controlling interests	13	3,818,771	187,324	-	-
		42,232,887	1,241,310	8,249,108	7,115,898

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

Note	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 of the Company	Subordinated perpetual debentures acquired by subsidiary	Transition 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 parent	Non-controlling interests	Total equity
	5,614,552	60,331,434	4,146,586	66,262,042	14,905,569	(679,600)	(16,655,311)	664,806	(3,778,116)	(1,235,562)	(21,004,183)	129,576,400	8,455,366	138,031,766
Year ended 31 December 2020														
Balance at 1 January 2020														
Transactions with owners, recorded directly in equity														
<i>Distribution to owners of the parent</i>														
Dividends	-	-	-	(3,930,186)	-	-	-	-	-	-	-	(3,930,186)	(185,981)	(4,116,167)
<i>Total distribution to owners of the parent</i>	-	-	-	(3,930,186)	-	-	-	-	-	-	-	(3,930,186)	(185,981)	(4,116,167)
<i>Changes in ownership interests in subsidiaries</i>														
Acquisition of non-controlling interests without a change in control														
<i>Total changes in ownership interests in subsidiaries</i>	-	-	-	-	-	-	-	19,848	19,848	-	19,848	19,848	496,081	515,929
<i>Total transactions with owners, recorded directly in equity</i>	-	-	-	(3,930,186)	-	-	-	19,848	19,848	-	19,848	(3,910,338)	310,100	(3,600,238)
<i>Comprehensive income (expense) for the year</i>														
Profit	-	-	-	2,414,276	-	-	-	-	-	-	-	2,414,276	385,786	2,800,062
Other comprehensive income (expense)	-	-	-	(588,066)	-	-	293,389	(1,065,613)	-	-	(772,224)	(1,360,290)	(198,462)	(1,558,752)
<i>Total comprehensive income (expense) for the year</i>	-	-	-	1,826,210	-	-	293,389	(1,065,613)	-	-	(772,224)	1,053,986	187,324	1,241,310
Sale of subordinated perpetual debentures of the Company														
acquired by subsidiary	-	-	-	-	-	679,600	-	-	-	-	-	679,600	-	679,600
Issuance expense of subordinated perpetual debentures	-	-	-	-	(811)	-	-	-	-	-	-	(811)	-	(811)
Coupon payment on subordinated perpetual debentures	-	-	-	(743,842)	-	-	-	-	-	-	-	(743,842)	-	(743,842)
Transfer to legal reserve	-	-	-	(1,156,904)	-	-	-	-	-	-	-	-	-	-
Balance at 31 December 2020	5,614,552	60,331,434	5,303,590	62,257,320	14,904,758	-	(16,361,922)	(400,807)	(3,758,208)	(1,235,562)	(21,756,559)	126,654,995	8,952,790	135,607,785

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 parent	Non-controlling interests	Total equity
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													
<i>Distribution to owners of the parent</i>	-	-	-	(5,193,461)	-	-	-	-	-	-	(5,193,461)	(410,879)	(5,604,340)
Dividends	-	-	-	(5,193,461)	-	-	-	-	-	-	(5,193,461)	(410,879)	(5,604,340)
<i>Total distribution to owners of the parent</i>	-	-	-	(5,193,461)	-	-	-	-	-	-	(5,193,461)	(410,879)	(5,604,340)
Changes in ownership interests in subsidiaries													
Acquisition of non-controlling interests without a change in control	-	-	-	-	-	-	-	(356,978)	-	(356,978)	(356,978)	(125,926)	(482,904)
<i>Total changes in ownership interests in subsidiaries</i>	-	-	-	-	-	-	-	(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)	(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	-	-	-	-	-	-	-	-	-
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

	Separate financial statements							Total equity
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated	Subordinated perpetual debentures	Hedging reserve	Other component of equity	
Year ended 31 December 2020								
Balance at 1 January 2020	5,614,552	60,331,434	566,601	16,631,184	14,905,569	702,064	98,751,404	
Transaction with owners, recorded directly in equity								
<i>Distribution to owners</i>								
Dividends	-	-	-	(3,930,186)	-	-	(3,930,186)	
Total distribution to owners	-	-	-	(3,930,186)	-	-	(3,930,186)	
Comprehensive income (expense) for the year								
Profit	-	-	-	7,246,565	-	-	7,246,565	
Other comprehensive income (expense)	-	-	-	-	-	(130,667)	(130,667)	
Total comprehensive income (expense) for the year	-	-	-	7,246,565	-	(130,667)	7,115,898	
Issuance expense of subordinated perpetual debentures	-	-	-	-	(811)	-	(811)	
Coupon payment on subordinated perpetual debentures	-	-	-	(752,055)	-	-	(752,055)	
Balance at 31 December 2020	5,614,552	60,331,434	566,601	19,195,508	14,904,758	571,397	101,184,250	

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	<i>(in thousand Baht)</i>							
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</i>								
Dividends	-	-	-	(5,193,461)	-	-	(5,193,461)	
Total distribution to owners	-	-	-	(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 cash flows

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Cash flows from operating activities					
Profit for the year		28,253,742	2,800,062	8,200,735	7,246,565
<i>Adjustments to reconcile profit to cash receipts (payments)</i>					
Tax expense (income)	34	6,703,254	(1,243,122)	28,628	40,486
Finance costs	33	7,120,662	7,673,861	2,481,582	2,231,194
Depreciation	14, 15	18,633,764	17,757,183	-	-
Amortisation of intangible assets and other assets		3,102,925	2,730,013	-	-
Impairment loss (reversal of impairment loss)					
determined in accordance with TFRS 9, net	5, 7	97,072	54,126	(10,671)	8,866
Employee benefits expense related to defined benefit plans	23	926,374	623,455	-	-
Unrealised foreign exchange (gain) loss, net		(798,026)	219,382	(42,782)	22,431
Unrealised (gain) loss on fair value adjustment of derivatives, net		(24,850)	8,613	-	-
Share of net profit of joint ventures accounted for using equity method, net of tax	11	(160,235)	(142,812)	-	-
Impairment loss on property, plant and equipment and right-of-use assets	14, 15	290,031	624,946	-	-
Provision for losses on inventories devaluation, net	8	238,108	118,677	-	-
Gain on bargain purchase	4	-	(1,806,350)	-	-
Loss (gain) on disposal of property, plant and equipment, net		51,190	(32,866)	-	-
Loss on written-off of property, plant and equipment, net		91,252	161,342	-	-
Finance income		(215,744)	(192,039)	(3,285,548)	(2,975,661)
Dividend income	10	-	-	(7,363,503)	(6,372,694)
		<u>64,309,519</u>	<u>29,354,471</u>	<u>8,441</u>	<u>201,187</u>
Changes in operating assets and liabilities					
Trade accounts receivable		(19,559,418)	4,631,370	-	-
Inventories		(35,706,176)	10,732,174	-	-
Other current assets		(5,464,840)	(155,068)	105,092	(331,810)
Other non-current assets		(853,720)	892,139	-	-
Trade accounts payable		31,260,369	(3,049,237)	-	-
Repayment of employee benefits related to defined benefit plans		(752,953)	(432,484)	-	-
Other current liabilities		3,006,541	2,390,195	30,632	21,624
Other non-current liabilities		53,709	386,051	-	-
Net cash generated from (used in) operating activities		<u>36,293,031</u>	<u>44,749,611</u>	<u>144,165</u>	<u>(108,999)</u>
Taxes paid		<u>(2,521,157)</u>	<u>(1,313,557)</u>	<u>(19,654)</u>	<u>(27,805)</u>
Net cash from (used in) operating activities		<u>33,771,874</u>	<u>43,436,054</u>	<u>124,511</u>	<u>(136,804)</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 financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
<i>Cash flows from investing activities</i>					
Net cash outflow on acquisitions of businesses	4	(2,363,140)	(59,942,145)	-	-
Cash outflow on payment of payable for acquiring joint operation	22	(151,460)	-	-	-
Cash outflow on additional investment in joint ventures	11	(216,605)	(252,121)	-	-
Cash outflow on acquisition of non-controlling interest	5	(624,293)	(23,009)	-	-
Proceeds from sale (purchase) of other investments		193,184	(501,869)	-	-
Proceeds from sale of property, plant and equipment		330,541	49,206	-	-
Acquisition of property, plant and equipment		(19,959,090)	(16,788,808)	-	-
Proceeds from sale of intangible assets		15,643	7,792	-	-
Acquisition of intangible assets		(3,239,199)	(1,340,193)	-	-
Dividend received	10	-	-	7,363,503	6,372,694
Dividend received from joint ventures	11	27,214	-	-	-
Finance income received		220,092	189,032	713	1,200
Net cash from (used in) investing activities		(25,767,113)	(78,602,115)	7,364,216	6,373,894
<i>Cash flows from financing activities</i>					
Proceeds from short and long-term loans from financial institutions		29,038,109	86,557,641	4,341,910	11,132,500
Repayment of short and long-term loans from financial institutions		(26,654,261)	(32,815,175)	(4,458,206)	(10,093,500)
Proceeds from debenture, net of debenture issuance costs		9,980,766	8,983,581	9,980,766	8,983,581
Proceeds from sale of subordinated perpetual debenture acquired by subsidiary		-	679,600	-	-
Payment of issuance expense of subordinated perpetual debentures		-	(811)	-	(811)
Repayment of debentures		(7,705,824)	(4,157,555)	(6,500,000)	(3,400,000)
Payment of lease liabilities		(2,304,875)	(2,265,080)	-	-
Loans to subsidiaries, net		-	-	(6,912,892)	(9,284,838)
Loans to joint ventures, net		(61,328)	(93,026)	-	-
Dividends paid to owners of the Company	36	(5,193,309)	(3,930,070)	(5,193,309)	(3,930,070)
Dividends paid to non-controlling interests		(410,879)	(185,981)	-	-
Finance income received		-	-	3,640,483	4,327,111
Finance costs paid		(6,787,341)	(7,549,448)	(2,416,488)	(2,197,022)
Deferred financing cost paid		(45,319)	(742,718)	-	(27,000)
Coupon payment on subordinated perpetual debentures	25	(750,000)	(743,842)	(750,000)	(752,055)
Net cash from (used in) financing activities		(10,894,261)	43,737,116	(8,267,736)	(5,242,104)
Net (decrease) increase in cash and cash equivalents, before effect of exchange rates		(2,889,500)	8,571,055	(779,009)	994,986
Effect of exchange rate changes on cash and cash equivalents		156,231	(69,242)	-	-
Net (decrease) increase in cash and cash equivalents		(2,733,269)	8,501,813	(779,009)	994,986
Cash and cash equivalents at 1 January		18,948,524	10,446,711	999,041	4,055
Cash and cash equivalents at 31 December	6	16,215,255	18,948,524	220,032	999,041

The accompanying notes form an integral part of the financial statements.

Notes to the financial statements

For the year ended 31 December 2021

Indorama Ventures Public Company Limited and its Subsidiaries

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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 26 February 2022.

1 General information

Indorama Ventures Public Company Limited, the “Company”, 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 and its subsidiaries (“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, joint ventures and joint operation as at 31 December 2021 and 2020 are given in notes 5, 10, 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 are 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 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 (together referred to as the “Group”) and the Group’s interests in 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.

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 do 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 are accounted for as other surpluses/deficits 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.

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 joint ventures using the equity method in the consolidated financial statements in which the equity method is applied. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements in which the equity method is applied include the Group's dividend income and share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which 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 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 assess 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 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, liabilities incurred by the Group to the previous owners of the acquiree, any contingent consideration and equity interests issued by the Group.

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. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognised in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate 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 qualifying cash flow hedges to the extent the hedge is effective are recognised in other comprehensive income.

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 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 a joint venture while retaining 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 that the Group/Company issued 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, taking into account for transaction costs that are directly attributable to its acquisition or issue of the securities, except for financial assets and financial liabilities measured at FVTPL, which are initially and subsequently measured at fair value, and any transaction costs that are directly attributable to its acquisition or issue of the securities are recognised in profit or loss.

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value through other comprehensive income (FVOCI); or fair value through profit or loss (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.

(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 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 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.

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 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.

When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the 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 is designated as the hedging instrument, the effective portion of changes in the fair value of the hedging instrument 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, lease receivables, 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.

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 to actions 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 has a maturity 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 ECLs rate. 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.

(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	3-20	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, is 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.

(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 the 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	2-40	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 is recognised as an expense on a straight-line basis over the lease term.

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 Group's 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.

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).

(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.

Impairment losses of assets 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.

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.

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 principle 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.

(s) Revenue from contracts with customers

(1) Revenue recognition

Revenue is recognised when a customer obtains control of the goods 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, 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.

Guarantee and royalty income is recognised over time as the services are provided.

Long-term advances received from customers is recognised as revenue when the Group transferred control over the goods 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 uses practical expedient which is 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 are the obligation to transfer goods to the customer. The contract liabilities are recognised when the Group/Company receives or has an unconditional right to receive non-refundable consideration from the customer before the Group/Company 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 make 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 they relate 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.

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 EPS is calculated by dividing the profit or loss attributable to owners of the parent 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.

(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 are under common control or under the same significant influence as the Group/Company; or the Group/Company has direct or indirect control or joint control or has significant influence over the financial and managerial decision-making of a person or entity.

(w) Segment reporting

Segment results that are reported to the Group's CEO (the 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 e.g., corporate assets (primarily the Company's headquarters), head office and international business center expenses, and tax assets and liabilities, etc.

4 Acquisitions of businesses

Gain on bargain purchase and goodwill

The excess of the Group's interest in the net identified assets and liabilities of the companies acquired over cost during the year ended 31 December 2020 is considered by management as gain on bargain purchase. The gain on bargain purchase and goodwill recognised in the consolidated statement of income for the year ended 31 December 2020 and the consolidated statement of financial position as at 31 December 2021 and 2020 respectively, are as following:

	Note	2021	2020
		<i>(in thousand Baht)</i>	
<i>Gain on bargain purchase</i>			
Integrated Oxides and Derivatives business/assets of Huntsman Corporation, USA	4(i)	-	1,806,350
Total gain on bargain purchase		-	1,806,350
<i>Goodwill</i>			
AG Resinas Ltda., Brazil	4(ii)	-	75,036
Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland	4(iii)	-	27,857
Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries, USA	4(v)	274,524	-
Total goodwill		274,524	102,893

(i) ***Integrated Oxides and Derivatives business/assets of Huntsman Corporation, USA***

On 3 January 2020, IVL, through its indirect subsidiaries, Indorama Ventures Holdings LP (“IVHLP”) and Indorama Netherlands B.V. (“INBV”), completed the acquisition of Integrated Oxides and Derivatives businesses/assets from Huntsman Corporation (“Seller”), USA, a listed entity on New York Stock Exchange and/or the Seller’s subsidiaries, located in: (i) Port Neches, TX, USA (“Port Neches Facility”); (ii) Dayton, TX, USA (“Dayton Facility”); (iii) Alvin (Chocolate Bayou), TX, USA (“Chocolate Bayou Facility”); (iv) Botany, New South Wales, Australia (“Botany Facility”); and (v) Ankleshwar, India (“Ankleshwar Facility”), which manufacture the following key products: Ethylene Oxide (EO), Propylene Oxide (PO), Glycols, Ethanolamines (EOA), Surfactants, Linear Alkylbenzene (LAB), and Methyl Tertiary-butyl Ether (MTBE), including certain R&D Centers, patents and technology, as per Equity and Asset Purchase Agreement on 7 August 2019 for a cash consideration of USD 1,962.0 million (Baht 59,116.1 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	<i>Note</i>	Fair values as at 3 January 2020 <i>(in thousand Baht)</i>
Cash and cash equivalents		5
Inventories		4,191,658
Trade receivables		4,085,811
Property, plant and equipment	14	51,374,792
Right-of-use assets	15	2,421,990
Intangible assets	18	7,583,330
Accounts payable		(2,772,390)
Lease liabilities		(2,381,303)
Deferred tax liabilities, net	34	(555,188)
Other assets/(liabilities), net		(3,026,223)
Total identifiable net assets received		60,922,482
Gain on bargain purchase		(1,806,350)
Purchase consideration transferred		59,116,132
Cash acquired		(5)
Net cash outflows		59,116,127

The trade receivables comprise gross contractual amounts due of Baht 4,110.8 million, of which Baht 25.0 million was expected to be uncollectible at the acquisition date.

(ii) ***AG Resinas Ltda., Brazil***

On 8 June 2020, IVL, through its indirect subsidiary, Indorama Ventures Polimeros S.A. (“IVBRZ”), completed the acquisition of 100% equity stake in the PET recycling facilities business of AG Resinas Ltda. (“AG Resinas”), Brazil, as per definitive share purchase agreement dated 25 March 2020 for a cash consideration of BRL 45.6 million (Baht 291.0 million). The transaction is accounted for as a business combination.

Subsequent to the completion of the acquisition, AG Resinas Ltda. was renamed to Indorama Ventures Soluções Sustentáveis Brasil Ltda.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 8 June 2020 (in thousand Baht)
Cash and cash equivalents		17
Inventories		3,048
Trade receivables		4,960
Property, plant and equipment	14	327,980
Intangible assets	18	15,128
Accounts payable		(1,780)
Deferred tax liabilities, net	34	(79,274)
Other assets/(liabilities), net		(54,163)
Total identifiable net assets received		215,916
Goodwill		75,036
Purchase consideration transferred		290,952
Cash acquired		(17)
Net cash outflows		290,935

The trade receivables comprise gross contractual amounts due of Baht 5.0 million which the entire amount was expected to be collectible at the acquisition date.

(iii) *Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland*

On 29 October 2020, IVL, through its indirect subsidiary, Indorama Netherlands B.V. (“INBV”), completed the acquisition of 100% stake in the PET recycling facilities business of Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością (“IMP Polowat”), Poland, as per definitive Share Purchase Agreement dated 3 August 2020 for a cash consideration of PLN 58.7 million (Baht 465.3 million). The transaction is accounted for as a business combination.

Subsequent to the completion of the acquisition, Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością was renamed to Indorama Ventures Recycling Poland Sp. z o.o.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 29 October 2020 (in thousand Baht)
Cash and cash equivalents		67,185
Inventories		63,079
Trade receivables		79,149
Property, plant and equipment	14	240,469
Right-of-use assets	15	53,872
Accounts payable		(30,396)
Lease liabilities		(17,924)
Deferred tax liabilities, net	34	(29,294)
Other assets/(liabilities), net		11,312
Total identifiable net assets received		437,452
Goodwill		27,857
Purchase consideration transferred		465,309
Cash acquired		(67,185)
Net cash outflows		398,124

The trade receivables comprise gross contractual amounts due of Baht 79.1 million which the entire amount was expected to be collectible at the acquisition date.

(iv) *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. During the period from acquisition date to 31 December 2021, the business contributed revenue of USD 3.7 million (Baht 120.2 million) and net loss of USD 1.0 million (Baht 33.1 million) to the Group’s results. If the acquisition had occurred on 1 January 2021, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 18.3 million and decreased by Baht 15.1 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2021.

The acquiree’s net assets at the date of obtaining control comprised of the following:

	<i>Note</i>	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	<i>14</i>	679,791
Right-of-use assets	<i>15</i>	9,269
Intangible assets	<i>18</i>	159,158
Deferred tax assets, net	<i>34</i>	40,013
Short-term loans from financial institution		(75,750)
Short-term loans from related parties		(174,820)
Accounts payable		(51,651)
Lease liabilities		(5,410)
Long-term loan from financial institution		(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

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 comprise gross contractual amounts due of Baht 1.4 million which the entire amount was expected to be collectible at the acquisition date.

The payment of consideration payable is subject to the conditions shall have been satisfied according to the Equity quotas sale and purchase agreement.

(v) ***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. During the period from acquisition date to 31 December 2021, the business contributed revenue of USD 14.1 million (Baht 463.6 million) and net loss of USD 7.7 million (Baht 254.6 million) to the Group’s results. If the acquisition had occurred on 1 January 2021, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 163.9 million and decreased by Baht 411.0 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2021.

Identifiable assets acquired and liabilities assumed

	<i>Note</i>	Fair values as at 11 June 2021 <i>(in thousand Baht)</i>
Inventories		21,335
Trade receivables		93,626
Property, plant and equipment	<i>14</i>	1,655,520
Right-of-use assets	<i>15</i>	254,875
Intangible assets	<i>18</i>	43,537
Deferred tax assets, net	<i>34</i>	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 comprise gross contractual amounts due of Baht 93.6 million which the entire amount was expected to be collectible at the acquisition date.

During the years ended 31 December 2021 and 2020, the Group incurred acquisition-related costs of Baht 303.3 million and Baht 689.2 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 2021 and 2020, respectively.

5 Related parties

Relationships with subsidiaries, joint ventures, joint operation and other related parties that the Group/Company had significant transactions with during the year were as follows:

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect 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	-	99.91	-	-	✓	-
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	-	-	✓	-
Perform (Thailand) Limited	Thailand	-	-	59.94	-	✓	-
Asia Pet (Thailand) Limited	Thailand	-	-	99.90	-	✓	-
Guangdong IVL PET Polymer Co., Ltd.	China	-	-	99.91	-	✓	-
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	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect 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	-	-	65.30	-	-	-
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	-	-	99.98	-	✓	-
PT. Indorama Polychem Indonesia	Indonesia	-	-	99.99	-	-	-
PT. Indorama Polypet Indonesia	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Petrochemicals	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Ventures 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	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
PETVALUE PHILIPPINES CORPORATION	Philippines	-	-	69.99	-	-	-
IVL Singapore Pte. Ltd.	Singapore	-	-	99.91	-	✓	-
Indorama Ventures Oxides Anklshwar Private Limited (Formerly Indorama Ventures Strategic Projects Private Limited)	India	-	-	99.98	-	✓	-
Indorama Ventures Global Shared Services Private Limited	India	-	-	99.98	-	-	-
Avgol India Private Limited	India	-	-	65.96	-	-	-
Avgol Nonwovens India Private Limited	India	-	-	65.96	-	-	-
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	-	-	-
Indorama Ventures Recycling Verdun S.A.S.	France	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
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	-	-	79.99	-	-	-
Schoeller Stüssen GmbH (Completion of dissolution process in 2021)	Germany	-	-	99.99	-	-	-
UTT Beteiligungsgesellschaft mbH	Germany	-	-	79.99	-	-	-
UTT Technische Textilien GmbH & Co. KG	Germany	-	-	79.99	-	-	-
UTT Admin GmbH (Formerly UTT Technische Textilien Geschäftsführung GmbH)	Germany	-	-	79.99	-	-	-
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 SICREM s.p.a.	Italy	-	-	99.99	-	-	-
Sinterama S.p.A.	Italy	-	-	99.99	-	-	-
Glanzstoff Industries S.A. (Former name is Glanzstoff Industries A.G.)	Luxembourg	-	-	99.99	-	✓	-
Textilcord Steinfort S.A.	Luxembourg	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Glanzstoff Management GmbH	Austria	-	-	99.99	-	-	-
Schoeller GmbH & Co KG	Austria	-	-	99.99	-	-	-
Indorama Austria GmbH	Austria	-	-	99.99	-	-	-
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	-	-	99.91	-	✓	-
UAB Indorama Polymers Europe	Lithuania	-	-	99.91	-	✓	-
UAB Indorama Holdings Europe	Lithuania	-	-	99.81	-	✓	-
Indorama Netherlands B.V.	The Netherlands	-	-	99.99	-	-	-
Indorama Ventures Europe B.V.	The Netherlands	-	-	99.99	-	✓	-
Indorama Polymers Rotterdam B.V.	The Netherlands	-	-	99.91	-	✓	-
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	-	-	99.81	-	✓	-
Indorama Ventures Dutch Investments B.V.	The Netherlands	-	-	51.00	-	-	-
Indorama Ventures Netherlands Oxides B.V.	The Netherlands	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect 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 Química 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	-	-	99.91	-	✓	-
Autofil Holdings Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Worldwide Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Yarns Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Properties Limited	United Kingdom	-	-	99.99	-	-	-
Indorama Ventures Portugal PTA - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Indorama Ventures Portugal Utility - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Avgol Cyprus Ltd.	Cyprus	-	-	65.96	-	-	-
“Avgol” Limited Liability Company	Russia	-	-	65.96	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Holdings LP	USA	-	-	99.99	-	-	-
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	-	✓	-
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	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
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	-	-	79.99	-	-	-
Safe Tweave Inc.	USA	-	-	79.99	-	-	-
Indorama Ventures Olefins Holding LLC	USA	-	-	99.99	-	-	-
Indorama Ventures Investments USA LLC	USA	-	-	51.00	-	-	-
Indorama Ventures Olefins LLC	USA	-	-	90.40	-	✓	-
Indorama Ventures Exporter Inc.	USA	-	-	99.99	-	✓	-
Winnboro Fibres LLC	USA	-	-	99.99	-	-	-
Indorama Ventures Corpus Christi Holding LLC	USA	-	-	99.99	-	✓	-
Avgol America Inc.	USA	-	-	65.96	-	-	-
Avgol Distribution Company Inc.	USA	-	-	65.96	-	-	-
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	-	✓	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
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. (Merged with Grupo Indorama Ventures, S. de R.L. de C.V. and IVL Holding S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	99.99	-	✓	-
Grupo Indorama Ventures, S. de R.L. de C.V. (Merged with IVL Holding S. de R.L. de C.V. and IVL Holding S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	-	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures EcoMex, S. de R.L. de C.V. (Merged with Indorama Ventures EcoMex, Services, S. de R.L. de C.V. and Indorama Ventures EcoMex S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	99.99	-	✓	-
Indorama Ventures EcoMex Services, S. de R.L. de C.V. (Merged with Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex, S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	-	-	-	-
Indorama Ventures Polymers Mexico, S. de R.L. de C.V. (Merged with Indorama Ventures Servicios Corporativos, S. de R.L. de C.V. and Indorama Ventures Polymers Mexico, S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	99.99	-	-	-
Indorama Ventures Polycom, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Servicios Corporativos, S. de R.L. de C.V. (Merged with Indorama Ventures Polymers Mexico, S. de R.L. de C.V. and Indorama Ventures Polymers Mexico S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	-	-	-	-
Performance Fibers Operations Mexico, S. de R.L. de C.V. (Merged with Performance Fibers Services S. de R.L. de C.V. and Performance Fibers Operations Mexico S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	99.99	-	-	-
Performance Fibers Services, S. de R.L. de C.V. (Merged with Performance Fibers Operations Mexico S. de R.L. de C.V. and Performance Fibers Operations Mexico S. de R.L. de C.V. is a surviving entity.)	Mexico	-	-	-	-	-	-
Glanzstoff Industries Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	-	-
UTT de México Technical Textiles, S.A. de C.V.	Mexico	-	-	79.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Polimeros S.A.	Brazil	-	-	99.99	-	✓	-
Tereftalicos Industria e Participacoes Ltda.	Brazil	-	-	99.99	-	-	-
Tereftalicos 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 (Merged with Indorama Ventures Packaging (Nigeria) Limited and Bevpak (Nigeria) Limited is a surviving entity)	Nigeria	-	-	99.99	-	-	-
Indorama Ventures Packaging (Nigeria) Limited (Merged with Bevpak (Nigeria) Limited and Bevpak (Nigeria) Limited is a surviving entity)	Nigeria	-	-	-	-	-	-
Indorama Ventures Packaging (Ghana) Limited	Republic of Ghana	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
IVL Dhunseri Polyester Company S.A.E.	Egypt	-	-	49.99	-	✓	-
Medco Plast Co. for Packing & Packaging systems (S.A.E.)	Egypt	-	-	99.99	-	✓	-
Avgol Industries 1953 Ltd. (Merged with Avgol Ltd. and Avgol Industries 1953 Ltd. is a surviving entity.)	Israel	-	-	65.96	-	✓	-
Avgol Ltd. (Merged with Avgol Industries 1953 Ltd. and Avgol Industries 1953 Ltd. is a surviving entity.)	Israel	-	-	-	-	-	-
Indorama Ventures Holdings Pty Ltd.	Australia	-	-	99.99	-	-	-
Indorama Ventures Oxides Australia Pty Limited	Australia	-	-	99.99	-	✓	-
ES FiberVisions (Thailand) Co., Ltd.	Thailand	-	-	-	50.00	-	-
Toyobo Indorama Advanced Fibers Company Limited	Thailand	-	-	-	49.75	-	-
ES FiberVisions (Suzhou) Co., Ltd.	China	-	-	-	50.00	-	-
ES FiberVisions Shanghai Co., Ltd.	China	-	-	-	50.00	-	-
Shemma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.	China	-	-	-	39.20	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
PHP-Shenma Air Bag Yarn Marketing (Shanghai) Co., Ltd.	China	-	-	-	40.80	-	-
ES FiberVisions Hong Kong Limited	Hong Kong - China	-	-	-	50.00	-	-
ES FiberVisions Company Limited	Japan	-	-	-	50.00	-	-
ES FiberVisions Holdings ApS	Denmark	-	-	-	50.00	-	-
ES FiberVisions ApS	Denmark	-	-	-	50.00	-	-
TTI GmbH	Germany	-	-	-	40.00	-	-
ES FiberVisions LP	USA	-	-	-	50.00	-	-
ES FiberVisions, Inc.	USA	-	-	-	50.00	-	-
Huvis Indorama Advanced Materials, LLC	USA	-	-	-	50.00	✓	-
Indorama Loop Technologies, LLC	USA	-	-	-	50.00	✓	-
Pacific Resources Limited	Thailand	-	-	-	-	✓	✓
Cryoviva (Thailand) Limited	Thailand	-	-	-	-	-	✓
Thai Plaspac Public Company Limited	Thailand	-	-	-	-	✓	✓
Lohia Global Holdings Limited	Hong Kong - China	-	-	-	-	✓	✓
Indorama Commerce DMCC	United Arab Emirates	-	-	-	-	✓	-
Vega Aviation Limited	British Virgin Islands	-	-	-	-	✓	✓

Name of entities	Country of incorporation/ Nationality	Nature of relationships
PT. Indo-Rama Synthetics Tbk.	Indonesia	24.00% shareholder of indirect joint venture, and related parties as commissioners
PT. Irama Unggul	Indonesia	Family relationships with commissioner
PT. TIGADAYA MINERGY	Indonesia	Subsidiary of 50.00% shareholder of indirect joint venture, and related parties as commissioners
Yayasan Pendidikan Indorama	Indonesia	Family relationships with trustee and advisory board
Indorama Eleme Petrochemicals Limited	Nigeria	10.00% shareholder of indirect subsidiary, some common directors
Indorama Industries Limited	India	Family relationships with board of directors
IVL Foundation	Thailand	Common Director/Family relationships with board of directors
Corpus Christi Polymers LLC	USA	33.33% shareholder of indirect joint operation
Key management personnel	Thailand, India, Indonesia and USA	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 22 February 2021, Indorama Ventures Insurance Company USA, a new indirect subsidiary, was incorporated in the United States of America with the registered share capital of USD 0.5 million (Baht 15.0 million).

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.

On 28 April 2020, Indorama Ventures Recycling Verdun S.A.S., a new indirect subsidiary, was incorporated in France, with the registered share capital of EUR 0.01 million (Baht 0.35 million).

On 9 June 2020, PETVALUE PHILIPPINES CORPORATION, a new indirect subsidiary, was incorporated in Philippines, with the registered share capital of PHP 2,500 million (Baht 1,553 million).

On 9 November 2020, Avgol Nonwovens India Private Limited, a new indirect subsidiary, was incorporated in India, with the registered share capital of INR 10 million (Baht 4.09 million).

On 13 November 2020, Toyobo Indorama Advanced Fibers Company Limited, a new indirect joint venture, was incorporated in Thailand, with the registered share capital of Baht 786.01 million.

Significant transactions with related parties <i>Year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Subsidiaries				
Finance income	-	-	3,284,835	2,974,460
Other income	-	-	552,665	626,182
Dividend income	-	-	7,363,503	6,372,694
Administrative expenses	-	-	170,527	242,807
Finance cost	-	-	46,110	-
Joint ventures				
Revenue from sales of goods	6,417,739	4,911,892	-	-
Purchases of goods and raw materials	252,810	292,098	-	-
Other raw materials conversion charges and overheads	-	317	-	-
Finance income	2,976	6,801	-	-
Rental income	45,600	48,148	-	-
Other income	23,372	2,424	-	-
Finance cost	70	-	-	-
Joint operation				
Other income	8,448	6,949	-	-
Key management personnel compensation				
Directors' fee and bonus	19,000	24,500	17,720	23,220
Short-term employee benefits	296,741	291,487	-	-
Long-term employee benefits	5,280	5,332	-	-
Other related parties				
Revenue from sales of goods	3,759,825	2,607,339	-	-
Purchases of goods and raw materials	802,370	419,742	-	-
Other raw materials conversion charges and overheads	9,866	4,600	-	-
Distribution costs and administrative expenses	85,546	80,203	-	-
Royalty expense	242,293	235,181	20,430	17,465
Lease-related expense	7,835	8,313	-	-
Other income	5,883	6,148	-	-
Finance cost	4,689	6,772	-	-

Balances as at 31 December with related parties were as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>Trade accounts receivable</i>				
Joint ventures	1,619,910	530,117	-	-
Other related parties	171,609	237,369	-	-
	1,791,519	767,486	-	-
Less allowance for expected credit loss	-	(1,655)	-	-
Net	1,791,519	765,831	-	-
<i>Other receivables</i>				
Subsidiaries	-	-	763,186	643,880
Joint ventures	268,669	235,551	-	-
Joint operation	-	18,623	-	-
Other related parties	80,888	73,639	-	-
	349,557	327,813	763,186	643,880
Less allowance for expected credit loss	-	-	-	-
Net	349,557	327,813	763,186	643,880
<i>Other non-current assets</i>				
Joint ventures	366,130	331,434	-	-
	366,130	331,434	-	-
Less allowance for expected credit loss	-	-	-	-
Net	366,130	331,434	-	-
<i>Short-term loans to</i>				
Subsidiaries	-	-	6,316,748	6,261,090
Joint ventures	29,003	122,297	-	-
	29,003	122,297	6,316,748	6,261,090
Less allowance for expected credit loss	-	(853)	-	-
Net	29,003	121,444	6,316,748	6,261,090
<i>Long-term loans to</i>				
Subsidiaries	-	-	103,003,840	89,816,840
Joint ventures	-	167,082	-	-
	-	167,082	103,003,840	89,816,840
Less allowance for expected credit loss	-	(1,194)	-	-
Net	-	165,888	103,003,840	89,816,840
<i>(Reversal of) expected credit losses for the year ended 31 December</i>				
Trade accounts receivable	(1,764)	(174)	-	-
Short-term and long-term loans to	(2,181)	1,071	-	-
<i>Interest receivable</i>				
Subsidiaries	-	-	281,535	635,872
Joint ventures	1,226	5,241	-	-
Total	1,226	5,241	281,535	635,872

During 2021 and 2020, 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.

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Trade accounts payable				
Joint ventures	2,892	12,551	-	-
Other related parties	222,530	45,846	-	-
Total	225,422	58,397	-	-
Other current liabilities				
Subsidiary	-	-	40,655	59,025
Joint ventures	1,137	1,704	-	-
Other related parties	75,795	91,047	5,194	3,610
Total	76,932	92,751	45,849	62,635
Lease liabilities				
Joint ventures	3,926	5,212	-	-
Other related parties	47,347	108,595	-	-
Total	51,273	113,807	-	-
Long-term loans from				
Subsidiary	-	-	6,000,000	-
Total	-	-	6,000,000	-
Interest payable				
Subsidiary	-	-	16,816	-
Total	-	-	16,816	-
(Reversal of) expected credit losses of undrawn loan commitment given to related parties included in other current liabilities for the year ended 31 December	(637)	(224)	-	-

Significant agreements with related parties

Guarantee Agreements

The Company entered into Guarantee Agreements with its related parties to provide the corporate guarantee to the third parties for the term loan 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 loan has been fully paid by those related parties to third parties.

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 lease.

6 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Cash on hand	13,801	39,729	-	-
Cash at banks	15,389,497	16,999,262	220,032	999,041
Highly liquid short-term investments	811,957	1,909,533	-	-
Total	16,215,255	18,948,524	220,032	999,041

7 Trade accounts receivable

<i>At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Within credit terms	48,481,325	30,001,548	-	-
Overdue:				
Less than 3 months	4,407,972	3,068,552	-	-
3-6 months	250,406	222,171	-	-
6-12 months	29,976	87,551	-	-
Over 12 months	675,445	664,991	-	-
Total	53,845,124	34,044,813	-	-
Less allowance for expected credit loss	(673,230)	(623,208)	-	-
Net	53,171,894	33,421,605	-	-

<i>Allowance for expected credit loss</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
		<i>(in thousand Baht)</i>			
At 1 January		623,208	656,549	-	-
Assumes from business acquisition	4	-	24,979	-	-
Addition		85,066	100,890	-	-
Reversal		(39,575)	(100,164)	-	-
Write-off		(49,417)	(44,553)	-	-
Effect of movements in exchange rates		53,948	(14,493)	-	-
At 31 December		673,230	623,208	-	-

Information of credit risk is disclosed in note 37(b.1).

8 Inventories

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Finished goods	39,414,852	24,721,821	-	-
Work in progress	3,451,668	2,369,208	-	-
Raw materials	28,593,354	15,780,598	-	-
Trading materials	427,468	85,421	-	-
Spare parts and supplies	10,460,994	8,806,431	-	-
Goods in transit	7,648,094	3,187,639	-	-
	<u>89,996,430</u>	<u>54,951,118</u>	<u>-</u>	<u>-</u>
Less allowance for decline in value	<u>(1,017,462)</u>	<u>(1,012,631)</u>	<u>-</u>	<u>-</u>
Net	<u>88,978,968</u>	<u>53,938,487</u>	<u>-</u>	<u>-</u>
Inventories recognised in 'cost of sales of goods':				
- Cost	382,889,845	287,763,196	-	-
- Write-down to net realisable value	811,857	534,954	-	-
- Reversal of write-down	<u>(573,749)</u>	<u>(416,277)</u>	<u>-</u>	<u>-</u>
Net	<u>383,127,953</u>	<u>287,881,873</u>	<u>-</u>	<u>-</u>

9 Other current assets

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Value added tax receivable	5,509,040	3,195,608	31,247	17,988
Advance tax payments and withholding tax	2,774,774	2,980,918	45,875	49,208
Advance payments	2,450,479	1,258,549	22,216	11,091
Prepaid expenses	1,764,412	1,326,332	-	-
Material price adjustment receivable	515,408	290,249	-	-
Export incentive receivable	360,645	252,297	-	-
Insurance claims receivable	84,245	173,112	-	-
Others	554,830	432,061	-	-
Total	<u>14,013,833</u>	<u>9,909,126</u>	<u>99,338</u>	<u>78,287</u>

10 Investments in subsidiaries

Subsidiaries	Type of business	Ownership interest (%)		Separate financial statements (in thousand Baht)											
		Ownership interest		Paid-up capital		Cost		Impairment		At cost-net		Dividend income for the year			
		2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020		
Indorama Petrochem Limited	Manufacture of PTA and PET	99.99	99.99	10,146,167	10,146,167	7,944,151	7,944,151	-	-	7,944,151	7,944,151	-	-	-	-
Indorama Holdings Limited	Manufacture of worsted wool yarns	99.81	99.81	774,468	774,468	2,001,419	2,001,419	-	-	2,001,419	2,001,419	-	-	166,202	739,017
Indorama Polymers Public Company Limited	Manufacturing of SSP Chips and PET	72.60	72.60	1,382,198	1,382,198	7,219,741	7,219,741	-	-	7,219,741	7,219,741	-	-	441,557	943,327
Indorama Polyester Industries Public Company Limited	Manufacture of polyester fibers and yarns and PET	64.94	64.94	2,202,850	2,202,850	1,473,995	1,473,995	-	-	1,473,995	1,473,995	-	-	-	329,047
TPT Petrochemicals Public Company Limited	Manufacture of PTA	99.97	99.97	2,955,000	2,955,000	5,182,189	5,182,189	-	-	5,182,189	5,182,189	-	-	-	-
IVL Belgium N.V.	Holding company	99.99	99.99	129,800	129,800	129,800	129,800	(121,630)	(121,630)	8,170	8,170	-	-	-	-
Indorama Ventures Global Services Limited	International business center	99.99	99.99	42,757,917	42,757,917	42,757,874	42,757,874	-	-	42,757,874	42,757,874	-	-	6,755,744	4,361,303
Total				66,709,169	66,709,169	66,709,169	66,709,169	(121,630)	(121,630)	66,587,539	66,587,539	66,587,539	66,587,539	7,363,503	6,372,694

None of the Company's subsidiaries are publicly listed and consequently do not have published price quotations.

11 Investments in joint ventures

Consolidated financial statements																
Type of business	Effective ownership interest (%)		Paid-up capital		Cost method		At equity method		Effect of movements in exchange rates		Dividend income		Carrying value at equity method		Share of profit (losses) of joint ventures for the year	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
<i>(in thousand Baht)</i>																
Joint ventures																
ES Fibervisions	50.00	50.00	613,653	613,653	699,178	699,178	1,267,135	1,119,395	135,205	22,342	(6,972)	-	1,395,368	1,141,737	125,398	71,832
Marketing and sales of fiber																
ES Fibervisions (Suzhou) Co., Ltd.	50.00	50.00	786,545	786,545	392,992	392,992	448,999	412,605	65,138	24,739	-	-	514,137	437,344	11,655	36,378
Manufacture and sale of bicomponent fibers																
Shenme-PPP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.	39.20	39.20	796,144	796,144	191,864	191,864	180,804	205,954	42,645	10,616	-	-	223,449	216,570	(35,766)	11,853
Marketing																
PHP-Shenna Air Bag Yarn Marketing (Shanghai) Co., Ltd.	40.80	40.80	9,038	9,038	152,611	152,611	201,769	182,319	15,510	14,379	(20,242)	-	197,037	196,698	5,071	2,709
Research and development service																
TTI GmbH	40.00	40.00	1,119	1,119	12,852	12,852	3,153	2,763	87	390	-	-	3,240	3,153	-	(2,232)
Manufacture of polyester fibers and yarns																
ES Fibervisions (Thailand) Co., Ltd.	50.00	50.00	410,000	410,000	205,000	205,000	377,713	281,616	-	-	-	-	377,713	281,616	96,097	82,998
Manufacture of PET recycled flake																
Indorama Ventures EcoMex, S. de R.L. de C.V.	-	51.00	644,100	644,100	-	-	-	135,884	-	1,946	-	-	-	137,830	(15,661)	(68,177)
Marketing																

Consolidated financial statements																	
Type of business	Effective ownership interest (%)		Paid-up capital		Cost method		At equity method		Effect of movements in exchange rates		Dividend income		Carrying value at equity method		Share of profit (losses) of joint ventures for the year		
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	
<i>(in thousand Baht)</i>																	
Joint ventures																	
Indorama Ventures EcoMex Services, S. de R.L. de C.V.	-	51.00	7	7	-	-	3	2,493	-	(24)	-	-	-	-	2,469	30	397
Havis Indorama Advanced Materials, LLC	50.00	50.00	962,868	922,690	456,698	436,609	380,983	399,022	45,221	(4,784)	-	-	426,204	394,238	(33,344)	7,133	
Indorama Loop Technologies, LLC	50.00	50.00	96,066	96,066	48,033	48,033	45,055	46,867	5,074	(1,812)	-	-	50,129	45,055	-	-	
Toyobo Indorama Advanced Fibers Company Limited	50.00	50.00	589,546	196,515	294,773	98,258	301,450	98,179	-	67,792	-	-	301,450	98,179	6,755	(79)	
Total					2,454,001	2,578,469	3,207,061	2,887,097	308,880	67,792	(27,214)	-	3,488,727	2,954,889	160,235	142,812	

<i>Material movements for the year ended 31 December</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
		<i>(in thousand Baht)</i>			
Joint ventures					
Additional investments		216,605	153,863	-	-
Share of net profit of joint ventures		160,235	142,812	-	-
Dividend income		(27,214)	-	-	-
Effect of movements in exchange rates		313,997	67,796	-	-
Total		663,623	364,471	-	-
Acquisition of additional interests with a change in control	4(iv)	(129,785)	-	-	-
Net total		533,838	364,471	-	-

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 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(iv))

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.

During 2020, Huvis Indorama Advanced Materials, LLC ("HIAM") increased its share capital from USD 19.4 million (Baht 608.0 million) to USD 29.6 million (Baht 922.7 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2020, Indorama Ventures EcoMex, S. de R.L. de C.V. increased its share capital from USD 19.9 million (Baht 634.9 million) to USD 20.2 million (Baht 644.1 million). The Group did not subscribe to the portion of its shareholdings.

During 2020, Indorama Loop Technologies, LLC ("ILT") increased its share capital from USD 1.7 million (Baht 53.6 million) to USD 3.0 million (Baht 96.1 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2020, Toyobo Indorama Advanced Fibers Company Limited paid-up its share capital of Baht 196.5 million for which the Group entirely subscribed to the portion of its shareholdings.

None of the Group's joint ventures are publicly listed and consequently do not have published price quotations.

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 2021 (in thousand Baht)
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
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	(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	-
	ES FiberVisions (Suzhou) Co., Ltd.	ES FiberVisions 2020 (in thousand Baht)
Revenue	988,779	9,123,384
Profit from operations (a)	72,756	143,665
Other comprehensive income	-	-
Total comprehensive income (100%)	<u>72,756</u>	<u>143,665</u>
Group's share of total comprehensive income	<u>36,378</u>	<u>71,832</u>
Current assets (b)	485,727	2,352,529
Non-current assets	1,132,400	1,148,556
Current liabilities (c)	212,325	1,198,444

	ES FiberVisions (Suzhou) Co., Ltd.	
	ES FiberVisions 2020	
	<i>(in thousand Baht)</i>	
Non-current liabilities (d)	536,224	15,523
Net assets (100%)	869,578	2,287,118
Carrying amount of interest in joint ventures	437,344	1,141,737

Remark:

a. Includes:

- depreciation and amortisation	49,193	-
- finance costs	57,768	1,767
- tax expense	7,752	19,614

b. Includes cash and cash equivalents

150,779	462,954
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c. Includes current financial liabilities (excluding trade and other payables)

-	-
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d. Includes non-current financial liabilities (excluding trade and other payables)

536,224	-
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Immaterial joint ventures

The following table is summarised financial information for the Group's interest in immaterial joint ventures based on the amounts reported in the Group's consolidated financial statements:

	Immaterial joint ventures	
	2021	2020
	<i>(in thousand Baht)</i>	
Carrying amount of interests in immaterial joint ventures	1,579,222	1,375,808
Group's share of:		
- Profit from operations, net	23,182	34,602
- Other comprehensive income	-	-
- Total comprehensive income	23,182	34,602

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 15 million (Baht 501.3 million) and USD 20.0 million (Baht 600.7 million) are payable as of 31 December 2021 and 2020, respectively. The payment of consideration payable is subject to the conditions shall have been satisfied according to the Asset Purchase Agreement.

Although CC Polymers is legally separated from IVL, Alpek and Far Eastern (together 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 CC Polymers, comprising of representatives of all the three Members, had decided to extend the approval of projected capital expenditure, through 2020 to optimise project construction efficiency in order to build a competitive PTA-PET asset at the site. The Board of Managers are expected to arrange a meeting by end of June 2022 to consider the extension of approval of projected capital expenditure. There is no additional investment by the Group during the year ended 31 December 2021. The site will be adequately preserved for seamless restart of construction.

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 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	40.00	61.44	34.05	50.00	49.99	
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	5,639,626	2,236,388	3,290,754	9,834,095	6,197,403	4,056,263	
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							12,234,756
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

	31 December 2021						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd. <i>(in thousand Baht)</i>	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
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)	
	31 December 2020						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd. <i>(in thousand Baht)</i>	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
Non-controlling interest percentage	20.00	40.00	61.44	34.05	50.00	49.99	
Current assets	3,578,708	612,248	2,096,169	4,904,127	2,115,444	3,566,778	
Non-current assets	11,430,961	1,737,695	5,175,110	13,654,799	7,176,168	4,430,005	
Current liabilities	4,461,828	170,021	3,602,485	3,113,165	3,143,786	4,736,137	
Non-current liabilities	5,401,613	95,462	1,687,554	6,641,359	1,020,292	1,070,432	
Net assets	5,146,228	2,084,460	1,981,240	8,804,402	5,127,534	2,190,214	
Carrying amount of non-controlling interest	496,910	833,836	1,101,961	2,615,336	2,388,421	1,058,653	8,495,117
Other individually immaterial non-controlling interest of the Group's subsidiaries							457,673
Total							8,952,790

	31 December 2020						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd. <i>(in thousand Baht)</i>	IVL Dhunseri Petrochem Industries Private Limited	IVL Dhunseri Polyester Company S.A.E.	Total
Revenue	8,985,788	2,891,887	7,006,829	11,985,904	14,658,327	10,099,586	
Profit (loss)	(592,152)	433,320	(577,513)	808,493	708,346	396,410	
Other comprehensive income (expense)	<u>(83,094)</u>	<u>(2,595)</u>	<u>(15,517)</u>	<u>(42,872)</u>	<u>(29,863)</u>	<u>9,694</u>	
Total comprehensive income (expense)	<u>(675,246)</u>	<u>430,725</u>	<u>(593,030)</u>	<u>765,621</u>	<u>678,483</u>	<u>406,104</u>	
Profit (loss) allocated to non-controlling interest	<u>(118,430)</u>	<u>173,328</u>	<u>(354,824)</u>	<u>278,846</u>	<u>354,173</u>	<u>198,205</u>	531,298
Other individually immaterial non- controlling interest of the Group's subsidiaries							<u>(145,512)</u>
Total							<u>385,786</u>
Dividends to non- controlling interest	-	(24,000)	-	-	(130,960)	-	
Other comprehensive income (expense) allocated to non- controlling interest	<u>77,237</u>	<u>(1,038)</u>	<u>(75,644)</u>	<u>(96,115)</u>	<u>(135,806)</u>	<u>(5,815)</u>	(237,181)
Other individually immaterial non- controlling interest of the Group's subsidiaries							<u>38,719</u>
Total							<u>(198,462)</u>
Cash flows from operating activities	964,189	567,261	550,411	2,745,361	2,474,954	12,217	
Cash flows used in investing activities	(521,322)	(214,095)	(149,800)	(187,942)	(94,094)	(318)	
Cash flows used in financing activities	<u>(331,268)</u>	<u>(197,314)</u>	<u>(424,587)</u>	<u>(1,275,616)</u>	<u>(2,601,572)</u>	<u>(14,485)</u>	
Net increase (decrease) in cash and cash equivalents	<u>111,599</u>	<u>155,852</u>	<u>(23,976)</u>	<u>1,281,803</u>	<u>(220,712)</u>	<u>(2,586)</u>	

14 Property, plant and equipment

		Consolidated financial statements							
		Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares	Construction in progress	Total
		<i>(in thousand Baht)</i>							
Cost									
At 1 January 2020		10,416,234	28,661,607	202,285,916	2,155,679	413,732	1,270,716	44,412,529	289,616,413
Additions		918	71,510	2,155,537	126,031	31,262	206,434	14,135,070	16,726,762
Acquisitions through business combinations	4	2,541,091	1,830,741	44,656,693	60,836	490,289	-	2,363,591	51,943,241
Transfers		14,025	912,876	37,160,615	462,685	30,547	1,250	(38,581,998)	-
Reclassifications		(286,197)	291,168	127,186	(611)	-	(14,235)	(217,333)	(100,022)
Disposals		-	(25,656)	(730,026)	(72,414)	(18,659)	(5,683)	(6,531)	(858,969)
Effect of movements in exchange rates		310,060	484,940	1,821,056	60,672	2,284	(8,731)	986,299	3,656,580
At 31 December 2020		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

	Consolidated financial statements							
	Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares	Construction in progress	Total
	<i>(in thousand Baht)</i>							
Depreciation and impairment loss								
At 1 January 2020	(550,070)	(7,352,100)	(69,752,613)	(1,340,264)	(232,988)	(229,372)	(3,997)	(79,461,404)
Depreciation charge for the year	(144,821)	(1,060,344)	(14,031,820)	(292,284)	(107,930)	(44,751)	-	(15,681,950)
Impairment losses	-	(32)	(581,558)	(3,589)	-	-	(39,461)	(624,640)
Reclassifications	57,664	(54,245)	(82,957)	(3,068)	-	-	-	(82,606)
Disposal	-	13,283	544,665	71,323	11,702	2,180	-	643,153
Effect of movements in exchange rates	(4,634)	(234,424)	(1,207,250)	(41,719)	306	507	1,600	(1,485,614)
At 31 December 2020	(641,861)	(8,687,862)	(85,111,533)	(1,609,601)	(328,910)	(271,436)	(41,858)	(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)	(4,714)	(6,061,639)
At 31 December 2021	(845,779)	(10,480,075)	(104,109,116)	(2,012,909)	(418,806)	(316,646)	(46,572)	(118,229,903)
Net book value								
At 31 December 2020	12,354,270	23,539,324	202,365,444	1,183,277	620,545	1,178,315	23,049,769	264,290,944
Owned assets								
At 31 December 2021	13,671,846	24,751,851	217,664,747	1,199,644	640,299	1,269,375	32,479,175	291,676,937
Owned assets								

On 1 August 2020, there was a lightning strike at Indorama Ventures Olefins LLC (“IVOL”) facility and subsequently flaring. Consequently, IVOL recorded 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 of the year 2020. During 2021, IVOL recorded an additional impairment loss due to damage of machineries from a lightning strike which occurred in 2020 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 is partial operation in November to December 2021, and fully operation in January 2022.

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.

Capitalised borrowing costs relating to the construction of the new plant are amounted to Baht 312.7 million (2020: Baht 464.3 million), with a capitalisation rate of 1.25-8.00% (2020: 1.56-8.00%) (see note 33).

15 Right-of-use assets

	Note	Consolidated financial statements					Total
		Leasehold land	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment (in thousand Baht)	Transportation equipment	
Cost							
At 1 January 2020		4,582,211	2,604,691	1,571,186	26,775	1,887,254	10,672,117
Additions		-	340,022	316,082	12,080	427,869	1,096,053
Acquisitions through business combinations	4	93,793	281,293	1,416,724	-	684,052	2,475,862
Remeasurement		2,626	13,229	(51,321)	-	(1,669)	(37,135)
Disposals		-	(5,484)	-	-	(6,418)	(11,902)
Effect of movements in exchange rates		78,229	62,872	(47,990)	1,215	(10,205)	84,121
At 31 December 2020		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
Depreciation							
At 1 January 2020		(55,524)	(214,112)	(53,686)	-	(40,384)	(363,706)
Depreciation charge for the year		(147,024)	(393,518)	(631,704)	(10,904)	(910,743)	(2,093,893)
Disposals		-	640	-	-	1,183	1,823
Effect of movements in exchange rates		(689)	(2,835)	17,997	(9)	27,801	42,265
At 31 December 2020		(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)
Impairment losses							
At 1 January 2020		-	-	-	-	-	-
Impairment losses		-	(306)	-	-	-	(306)
Effect of movements in exchange rates		-	12	-	-	-	12
At 31 December 2020		-	(294)	-	-	-	(294)
Effect of movements in exchange rates		-	(33)	-	-	-	(33)
At 31 December 2021		-	(327)	-	-	-	(327)
Net book value							
At 31 December 2020		4,553,622	2,686,504	2,537,288	29,157	2,058,740	11,865,311
At 31 December 2021		4,596,767	2,690,833	2,326,617	30,611	1,805,413	11,450,241

During 2021, depreciation of right of use assets of Baht 6.2 million was capitalised in property, plant and equipment (2020: Baht 18.7 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	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Amounts recognised in profit or loss				
Depreciation of right-of-use assets:				
- Leasehold land	142,109	131,933	-	-
- Buildings and building improvements	354,354	389,949	-	-
- Machinery and equipment	732,335	631,704	-	-
- Office furniture, fixtures and equipment	20,824	10,904	-	-
- Transportation equipment	808,411	910,743	-	-
Interest on lease liabilities	445,680	472,365	-	-
Expenses relating to short-term leases	154,054	220,413	-	-
Expenses relating to leases of low-value assets	25,404	17,675	-	-

In 2021, total cash outflow for leases of the Group was Baht 2,485 million (2020: Baht 2,503 million).

17 Goodwill

	<i>Note</i>	Consolidated financial statements	
		2021	2020
		<i>(in thousand Baht)</i>	
Cost			
At 1 January		15,385,817	15,249,931
Acquired through business combinations	4	274,524	102,893
Effect of movements in exchange rates		1,750,301	32,993
At 31 December		<u>17,410,642</u>	<u>15,385,817</u>
Net book value			
At 31 December		<u>17,410,642</u>	<u>15,385,817</u>

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	
	2021	2020
	<i>(in million Baht)</i>	
CGU 1 - Indorama Ventures OGL Holdings LP and its subsidiaries	6,983	6,276
CGU 2 - Avgol Industries 1953 Ltd. and its subsidiaries	4,653	4,182
Others	5,775	4,928
Total	17,411	15,386

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 does not exceed 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.

2021	CGU1	CGU2
Growth rate (%)	1.0	0.0
Discount rate (%)	9.6	8.5
2020	CGU1	CGU2
Growth rate (%)	1.0	0.0
Discount rate (%)	10.2	9.4

The estimated recoverable amount of each CGU exceeded its carrying amount therefore no impairment losses to be recognised as of 31 December 2021 and 2020.

In respect of CGU1 and CGU2, a fall in growth rate to nil would not result in impairment loss. The increase in discount rate to 17.1% and 14.9% (2020: 13.4% and 12.2%, respectively) in CGU 1 and CGU 2, respectively, would remove the remaining headroom.

18 Other intangible assets

Cost	Note	Rights acquired	Consolidated financial statements										Total
			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		
At 1 January 2020		195,420	7,103,823	587,298	11,257,452	10,911,434	3,127,870	301,540	960,931	6,954	-	34,452,722	
Additions		-	-	33,021	-	28,754	-	-	99,985	15,727	1,965,192	2,142,679	
Acquisitions through business combinations		-	-	-	-	-	-	-	-	-	-	-	
● Integrated Oxides and Derivatives business/assets of Huntsman Corporation	4(i)	-	-	-	-	7,583,330	-	-	-	-	-	7,583,330	
● AG Resinas Ltda.	4(ii)	-	-	-	13,219	1,909	-	-	-	-	-	15,128	
Reclassifications		29,577	-	8,686	-	(3,719)	-	-	6,499	-	19,782	60,825	
Write-off		-	-	-	-	-	-	-	-	(7,779)	(4,014)	(11,793)	
Effect of movements in exchange rates		6,985	54,089	16,904	3,456	(221,525)	78,838	(1,170)	70,219	185	535	8,516	
At 31 December 2020 and 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		-	-	-	-	-	-	-	-	-	-	-	
● Indorama Ventures EcoMex, S. de R.L. de C.V. and Indorama Ventures EcoMex Services, S. de R.L. de C.V.	4(iv)	-	-	-	133,178	-	25,980	-	-	-	-	159,158	
● Recycled Polyethylene Terephthalate assets of CarbonLite Holdings LLC and its subsidiaries	4(v)	-	-	-	-	43,537	-	-	-	-	-	43,537	
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		250,806	7,712,218	769,085	12,223,295	19,971,858	3,540,891	334,197	1,291,276	282,387	4,336,619	50,712,632	

		Consolidated financial statements										
		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
		<i>(in thousand Baht)</i>										
Amortisation												
At 1 January 2020		(62,293)	(2,322,903)	(370,893)	(2,947,454)	(3,561,190)	(577,737)	(123,007)	(277,640)	(55)	-	(10,243,172)
Amortisation charge for the year		(16,640)	(426,622)	(81,877)	(636,801)	(1,127,161)	(270,056)	(16,515)	(129,471)	-	-	(2,705,143)
Reclassifications		-	-	3,205	-	-	(208)	-	-	-	-	2,997
Effect of movements in exchange rates		(1,935)	17,393	(8,375)	(8,594)	3,886	(19,906)	1,140	(23,178)	(5)	-	(39,574)
At 31 December 2020 and 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		(104,979)	(3,385,639)	(562,893)	(4,573,746)	(6,184,171)	(1,265,326)	(171,556)	(572,982)	(61)	-	(16,821,353)
Impairment losses												
At 1 January 2020		(660)	-	(1,100)	-	(42,738)	-	-	-	-	-	(44,498)
Effect of movements in exchange rates		128	-	213	-	8,288	-	-	-	-	-	8,629
At 31 December 2020 and 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		(326)	-	(544)	-	(21,109)	-	-	-	-	-	(21,979)
Net book value												
At 31 December 2020		150,582	4,425,780	187,082	7,681,278	13,581,268	2,338,801	161,988	707,345	15,027	1,981,495	31,230,646
At 31 December 2021		145,501	4,326,579	205,648	7,649,549	13,766,578	2,275,565	162,641	718,294	282,326	4,336,619	33,869,300

Capitalised borrowing costs related to the intangible assets under development are amounted to Baht 66.3 million (2020: Baht 8.2 million) (see note 33).

19 Other non-current assets

	Note	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Advance payment on purchase of property, plant and equipment		1,012,389	891,334	-	-
Advance tax credit	27	572,367	-	-	-
Refundable deposits		387,688	297,573	-	-
Finance lease receivable from related party	5	366,130	329,070	-	-
Others		980,066	1,012,150	-	-
Total		3,318,640	2,530,127	-	-

20 Interest-bearing liabilities

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<i>(in thousand Baht)</i>				
Bank overdrafts	2,243,455	3,019,308	-	-
Secured	196,635	230,128	-	-
Unsecured	2,046,820	2,789,180	-	-
Short-term loans from financial institutions (a)	24,375,305	17,706,303	-	-
Secured	8,689,229	5,727,482	-	-
Unsecured	15,686,076	11,978,821	-	-
Long-term loans from financial institutions (b)	110,663,800	108,367,794	9,210,963	8,988,664
Secured	14,078,104	13,311,242	-	-
Unsecured	96,585,696	95,056,552	9,210,963	8,988,664
Lease liabilities	10,343,260	10,658,050	-	-
Debentures (c)	76,600,483	72,208,998	57,905,633	54,412,231
Unsecured	76,600,483	72,208,998	57,905,633	54,412,231
Total interest-bearing liabilities	224,226,303	211,960,453	67,116,596	63,400,895

<i>Assets pledged as security for liabilities as at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<i>(in thousand Baht)</i>				
Trade accounts receivable	23,571,475	14,483,692	-	-
Inventories	28,232,001	19,218,400	-	-
Property, plant and equipment	27,640,863	41,811,542	-	-
Total	79,444,339	75,513,634	-	-

(a) *Short-term loans from financial institutions*

Short-term loans from financial institutions comprise the following:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Secured short-term loan secured by trade accounts receivable, inventories, plant and machine and working capital with interest 0.60% - 11.85% (2020: 1.00%-14.25%)	3,210,815	1,374,735	-	-
Unsecured short-term loan with interest 0.50% - 28.00% (2020: 0.50%-18.50%)	13,504,239	10,537,761	-	-
Secured revolving loan (USD 135,530,668) (2020: USD 112,906,136) secured by trade accounts receivable and inventories with interest 1.56%-4.00% (2020: 1.38%-3.94%)	4,529,421	3,391,373	-	-
Secured revolving loan (USD 1,663,226) (2020: USD 1,782,305) secured by trade accounts receivable and inventories with interest 2.83%-5.63% (2020: 2.83%-5.63%)	55,585	53,535	-	-
Unsecured revolving loan (EUR 40,000,000) (2020: EUR 30,000,000) with interest 1.20%-1.30% (2020: 1.30%)	1,515,792	1,106,292	-	-
Unsecured revolving loan (EUR 17,576,155) with interest 1.50%-4.75%	666,045	-	-	-
Packing credits	757,779	764,774	-	-
Promissory note	-	334,768	-	-
Bill discount	135,629	143,065	-	-
Total	24,375,305	17,706,303	-	-

Under the terms of trust receipt agreements with banks, certain imported inventory has been released by the bank to the Group in trust. The Group is accountable to the banks for the inventory balance or its related sales proceeds until the inventory is fully paid for.

(b) *Long-term loans from financial institutions*

Long-term loans from financial institutions comprise the following:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Unsecured loan, due in July 2023, repayable in semi-annually, with interest at 3 month LIBOR plus margin per annum	3,229,957	3,020,680	3,229,957	3,020,680
Unsecured loan, due in June 2023, repayable in lumpsum, with interest at MLR minus 3.25% per annum	6,000,000	6,000,000	6,000,000	6,000,000
Unsecured loan, due in December 2024, repayable quarterly, with Philippine Treasury Reference Rate with fixed interest rate	325,863	456,140	-	-
Unsecured loan, due in May 2022, repayable in lumpsum, with interest at 6 month EURIBOR plus margin per annum	-	3,681,650	-	-
Unsecured loan, due in December 2024 repayable in quarterly installments with interest at 3 month LIBOR plus margin per annum	30,077,910	37,846,746	-	-
Unsecured loan, due in June 2024, repayable semi-annually, with the central bank of the People's Republic of China interest rate plus margin per annum	53,114	65,273	-	-
Unsecured loan, due in March 2023, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	1,668,655	1,499,545	-	-
Unsecured loan, due in March 2022, repayable in lumpsum, with interest at with interest at 3 month LIBOR plus margin per annum	-	4,498,635	-	-
Unsecured loan, due in February 2022, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	3,337,310	2,999,090	-	-
Unsecured loan, due in December 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	4,078,934	4,998,483	-	-
Unsecured loan, due in March 2024, repayable in lumpsum, with interest at 3 month EURIBOR	4,625,109	6,136,083	-	-
Unsecured loan, due in May 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	3,337,310	2,999,090	-	-

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Unsecured loan, due in December 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	6,674,620	5,998,180	-	-
Unsecured loan, due in March 2025, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	8,510,141	7,647,680	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	5,005,965	2,999,090	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	3,337,310	1,999,393	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	1,668,655	999,697	-	-
Unsecured loan, due in June 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	2,669,848	-	-	-
Unsecured loan, due in June 2024, repayable in lumpsum, with interest at 3 month EURIBOR plus margin per annum	5,676,270	-	-	-
Unsecured loan, due in July 2026, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	3,337,310	-	-	-
Unsecured loan, due in December 2024, repayable in quarterly, with interest at 3 month LIBOR plus margin per annum	1,203,116	1,441,781	-	-
Secured loan, due in February 2024, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	312,389	393,096	-	-
Secured loan, due in October 2025, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	369,280	414,932	-	-
Secured loan, due in June 2026, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	395,755	434,847	-	-

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Secured loan, due in June 2026, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	233,939	360,445	-	-
Unsecured loan, due in December 2028, repayable in annually with fixed interest rate	1,336,796	-	-	-
Unsecured loan, due in December 2028, repayable in annually with fixed interest rate	334,199	-	-	-
Secured loan, due in June 2023, repayable semi-annually, with interest at 3 month LIBOR plus margin per annum secured by land	-	289,107	-	-
Secured loan, due in September 2027, repayable quarterly, with interest at 3 month LIBOR plus margin per annum secured by land	-	1,007,144	-	-
Secured loan, due in September 2030, repayable quarterly, with interest at 3 month LIBOR plus margin per annum secured by land	2,665,782	2,395,949	-	-
Unsecured loan, due in February 2027, repayable in lumpsum, with interest at 3 month EURIBOR plus margin per annum	265,263	258,135	-	-
Secured loan, due in March 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	94,384	124,590	-	-
Secured loan, due in December 2024, repayable quarterly, with 1 year MCLR plus margin per annum, secured by property, plant and equipment	175,459	209,050	-	-
Secured loan, due in March 2024, repayable quarterly, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	157,825	189,266	-	-
Secured loan, due in June 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	201,614	252,685	-	-
Secured loan, due in March 2028, repayable quarterly, with fixed interest rate secured by property, plant and equipment	-	326,840	-	-
Secured loan, due in March 2028, repayable quarterly, with fixed interest rate secured by property, plant and equipment	210,790	237,945	-	-

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Secured loan, due in June 2025, repayable quarterly, with interest at 3 month EURIBOR plus margin per annum secured by property, plant and equipment, inventory and trade accounts receivable	299,267	322,513	-	-
Secured loan, due in April 2024, repayable semi-annually with fixed interest rate, secured by property, plant and equipment	559,500	613,650	-	-
Secured loan, due in June 2023, repayable quarterly, with interest at 1 year MCLR secured by property, plant and equipment	255,132	388,645	-	-
Secured loan, due in June 2024, repayable annually, with fixed interest rate secured by property, plant and equipment	270,127	290,461	-	-
Unsecured loan, due in April 2024, repayable quarterly, with interest at 6 month MCLR plus margin per annum	276,393	265,915	-	-
Unsecured loan, due in August 2024, repayable in monthly, with interest at 1 month LIBOR plus margin per annum	129,283	-	-	-
Secured revolving loan, (USD 223,151,686) (2020: USD 157,440,186) due in January 2025, repayable with interest at 1 month LIBOR plus margin per annum, secured by trade accounts receivable and inventories	7,457,707	4,729,047	-	-
Other long-term borrowings	725,233	553,103	-	-
Total long-term loans from financial institutions	111,543,514	109,344,601	9,229,957	9,020,680
Less deferred financing costs	(879,714)	(976,807)	(18,994)	(32,016)
Net long-term loans from financial institutions	110,663,800	108,367,794	9,210,963	8,988,664
Less current portion due within one year, net of related deferred financing costs	(9,587,605)	(8,919,764)	(771,511)	(112,274)
Long-term loans from financial institutions	101,076,195	99,448,030	8,439,452	8,876,390

The above loan agreements contain certain covenants relating to the declaration and payment of dividends, maintenance of financial ratios, acquisition of major fixed assets, additional indebtedness and share transfers.

As at 31 December 2021, the Group and the Company had unutilised credit facilities totaling Baht 41,485.5 million and Baht 8,563.5 million, respectively (2020: Baht 73,103.0 million and Baht 9,514.0 million, respectively).

(c) *Debentures*

As at 31 December, the Group and the Company had outstanding debentures as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
IVL - Debentures (i)	57,905,633	54,412,231	57,905,633	54,412,231
IVL Singapore - Debentures (ii)	4,605,672	4,137,983	-	-
AVGOL - Debentures (iii)	4,120,306	4,720,000	-	-
IVGSL - Debentures (iv)	9,968,872	8,938,784	-	-
Total	76,600,483	72,208,998	57,905,633	54,412,231

(i) IVL Debentures

As at 31 December 2021, the Company had outstanding unsubordinated and unsecured debentures totaling Baht 57,970 million (2020: Baht 54,470 million) as follows:

Debentures no.	Principal <i>(in thousand Baht)</i>	Interest rate <i>(% p.a.)</i>	Term	Maturity date	Deferred debenture issuance expense <i>(in thousand Baht)</i>	Net
1/2012-2	1,250,500	5.10 for 1st - 3rd year 5.60 for 4th - 7th year 6.00 for 8th - 10th year	10 years	5 Apr 22	73	1,250,427
1/2012-5	2,649,500	5.52	10 years	5 Apr 22	155	2,649,345
2/2012-3	1,645,000	5.11	10 years	14 Dec 22	348	1,644,652
2/2012-4	1,475,000	5.28	12 years	14 Dec 24	807	1,474,193
1/2013-3	1,100,000	5.10	10 years	27 Jun 23	583	1,099,417
1/2014-3	1,400,000	5.30	10 years	14 Mar 24	694	1,399,306
1/2015-1	1,100,000	4.20	10 years	13 Oct 25	757	1,099,243
1/2015-2	500,000	4.00	7 years	13 Oct 22	102	499,898
2/2015-1	1,150,000	3.92	10 years	9 Dec 25	630	1,149,370
1/2016-2	200,000	3.68	10 years	20 Oct 26	162	199,838
1/2016-3	2,200,000	4.10	12 years	20 Oct 28	2,106	2,197,894
1/2016-4	2,300,000	4.39	15 years	20 Oct 31	2,538	2,297,462
1/2017-2	500,000	3.24	5 years	4 May 22	86	499,914
1/2017-3	1,000,000	3.75	7 years	4 May 24	851	999,149
1/2017-4	2,000,000	4.11	10 years	4 May 27	2,720	1,997,280
1/2017-5	2,000,000	4.28	12 years	4 May 29	3,116	1,996,884
2/2017-1	300,000	2.92	7 years	16 Nov 24	204	299,796
2/2017-2	700,000	3.46	10 years	16 Nov 27	682	699,318
2/2017-3	1,000,000	3.90	15 years	16 Nov 32	1,203	998,797
1/2018-2	3,000,000	2.78	5 years	8 Jun 23	1,392	2,998,608
1/2018-3	1,500,000	3.18	7 years	8 Jun 25	1,190	1,498,810
1/2018-4	1,800,000	3.83	10 years	8 Jun 28	1,874	1,798,126
1/2018-5	5,000,000	4.12	12 years	8 Jun 30	5,685	4,994,315
1/2018-6	3,200,000	4.27	15 years	8 Jun 33	3,946	3,196,054
1/2020-1	4,000,000	2.78	5 years	27 Nov 25	5,699	3,994,301
1/2020-2	1,990,000	3.15	7 years	27 Nov 27	3,062	1,986,938
1/2020-3	3,010,000	3.42	10 years	27 Nov 30	4,890	3,005,110

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debenture issuance expense (in thousand Baht)	Net
1/2021-1	3,000,000	2.48	5 years	3 Nov 26	5,584	2,994,416
1/2021-2	2,000,000	3.00	7 years	3 Nov 28	3,758	1,996,242
1/2021-3	5,000,000	3.60	10.5 years	3 May 32	9,470	4,990,530
Total	57,970,000				64,367	57,905,633
Less portion due within one year	(6,545,000)				(12,076)	(6,532,924)
Net	51,425,000				52,291	51,372,709

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 issue of debentures totally not exceeding Baht 150,000 million (in Baht or equivalent foreign currency).

On 27 November 2020, the Company raised in cash by Baht 9,000 million, through the issuance and offering of unsubordinated and unsecured Baht debentures in a private placement.

On 3 November 2021, the Company issued and offered a Baht 10 billion triple-tranche Sustainability-Linked Bond (“SLB”) No.1/2021 (“the Bonds”) at par value and offering price of Baht 1,000 per unit. The SLB was offered both to institutions and high-net-worth investors. The Bonds are unsubordinated and unsecured debentures with a debenture holders’ representative in the name-registered certificate.

The certain debentures contain covenant relating to the maintenance of financial ratio.

(ii) IVL Singapore Debentures

As at 31 December 2021, IVL Singapore Pte. Ltd. (“IVLS”), an indirect subsidiary of the Company, had outstanding senior unsecured guaranteed debentures totaling SGD 195.0 million (Baht 4,611.9 million) (2020: SGD 195.0 million (Baht 4,145.1 million)), as follows:

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debenture issuance expense (in thousand Baht)	Net
1/2015-1	4,611,946	3.73	10 years	7 Oct 25	6,274	4,605,672
Total	4,611,946				6,274	4,605,672

The resolution of IVLS held on 25 August 2015 approved the issuance of debentures up to an amount not exceeding USD 140 million equivalent in Singapore dollars. The debenture is guaranteed by Credit Guarantee & Investment Facility, a trust fund of the Asian Development Bank and listed on the SGX-ST.

The certain debentures contain covenant relating to the maintenance of financial ratio.

(iii) AVGOL Debentures

As at 31 December 2021, Avgol Industries 1953 Ltd. (“Avgol”), an indirect subsidiary of the Company, had outstanding unsecured debentures totaling USD 123.9 million (Baht 4,139.4 million) (2020: USD 158.0 million (Baht 4,746.4 million)), as follows:

Debentures no.	Principal <i>(in thousand Baht)</i>	Interest rate <i>(% p.a.)</i>	Term	Maturity date	Deferred debentures issuance expense <i>(in thousand Baht)</i>	Net
1/2014-C	2,698,184	4.75	10 years	31 Dec 24	7,988	2,690,196
1/2017-D	1,441,209	3.90	8 years	31 Dec 25	11,099	1,430,110
Total	4,139,393				19,087	4,120,306
Less portion due within one year	(1,259,344)				(8,470)	(1,250,874)
Net	2,880,049				10,617	2,869,432

(iv) IVGSL Debentures

As at 31 December 2021, Indorama Ventures Global Services Limited (“IVGSL”), a subsidiary of the Company, had outstanding senior unsecured debentures totaling USD 300.0 million (Baht 10,011.9 million) (2020: USD 300.0 million (Baht 8,997.3 million)) as follows:

Debentures no.	Principal <i>(in thousand Baht)</i>	Interest rate <i>(% p.a.)</i>	Term	Maturity date	Deferred debentures issuance expense <i>(in thousand Baht)</i>	Net
1/2019-1	10,011,930	4.375	5 years	12 Sep 24	43,058	9,968,872
Total	10,011,930				43,058	9,968,872

The resolution of IVGSL held on 27 June 2019 approved the issuance of debentures up to an amount not exceeding USD 600.0 million or its equivalent in any other currency.

On 12 September 2019, IVGSL issued senior unsecured debentures to foreign institutional investors for the total amount of USD 300.0 million. The debenture is guaranteed by the Company.

21 Trade accounts payable

	Note	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
Related parties	5	225,422	58,397	-	-
Other parties		90,039,512	57,724,164	-	-
Total		90,264,934	57,782,561	-	-

22 Other current liabilities

	Note	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Accrued operating expenses		10,349,169	8,040,586	71,113	23,695
Other payables		4,938,305	3,619,714	45,850	62,635
Materials price adjustments payable		1,847,055	2,351,957	-	-
Contract liabilities	26	1,216,295	1,391,536	-	-
Interest payable		693,496	611,682	332,613	293,182
Withholding tax payable		609,046	377,358	-	-
Payable for acquiring joint operation	12	501,298	600,742	-	-
Value added tax payable		449,371	560,404	-	-
Others		1,163,139	1,076,883	2,665	13,185
Total		21,767,174	18,630,862	452,241	392,697

23 Non-current provisions for employee benefits

<i>At 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<i>(in thousand Baht)</i>				
Statement of financial position				
Non-current provisions for:				
Post-employment benefits:				
Thailand legal severance plan	795,758	693,992	-	-
Defined benefit plans established in Europe	3,512,890	3,754,978	-	-
Defined benefit plans established in United States	2,582,175	2,692,452	-	-
Defined benefit plans established in rest of the world	588,871	496,844	-	-
Other long-term employee benefits	19,996	20,207	-	-
Total	7,499,690	7,658,473	-	-

<i>For the year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Statement of income:				
Recognised in profit or loss:				
Post-employment benefits:				
Thailand legal severance plan	56,242	52,308	-	-
Defined benefit plans established in Europe	313,832	251,259	-	-
Defined benefit plans established in United States	450,065	224,603	-	-
Defined benefit plans established in rest of the world	96,400	91,606	-	-
Other long-term employee benefits	9,835	3,679	-	-
Total	926,374	623,455	-	-
Recognised in other comprehensive income:				
Remeasurement (gains) losses:				
Actuarial (gains) losses	(942,365)	1,136,630	-	-
Losses (return) on plan assets excluding amounts included in interest income	186,720	(339,464)	-	-
Others	4	-	-	-
Total	(755,641)	797,166	-	-

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 184.0 million in contributions to its defined benefit plans in 2022.

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	714,199	647,120	-	-
Recognised in profit or loss:				
Current service costs	50,228	44,682	-	-
Interest on obligation	8,388	9,891	-	-
Actuarial losses for other long-term employee benefits	7,461	1,414	-	-
	66,077	55,987	-	-

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Financial assumptions	(27,354)	2,351	-	-
- Experience adjustment	102,165	35,502	-	-
	<u>74,811</u>	<u>37,853</u>	<u>-</u>	<u>-</u>
Others				
Benefits paid by the plan	(39,333)	(26,761)	-	-
	<u>(39,333)</u>	<u>(26,761)</u>	<u>-</u>	<u>-</u>
At 31 December	<u>815,754</u>	<u>714,199</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 202.6 million (EUR 5.1 million, GHC 1.5 million) in contributions to its defined benefit plans in 2022.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	3,412,552	3,464,584	-	-
Effect of movement in exchange rates	100,338	290,394	-	-
Statement of financial position obligation	<u>3,512,890</u>	<u>3,754,978</u>	<u>-</u>	<u>-</u>

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	6,583,823	5,298,314	-	-
Recognised in profit or loss:				
Current service costs	254,849	206,594	-	-
Past service costs	30,844	14,256	-	-
Interest on obligation	52,337	61,473	-	-
Actuarial losses	591	504	-	-
	<u>338,621</u>	<u>282,827</u>	<u>-</u>	<u>-</u>
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Demographic assumptions	20	(36,154)	-	-
- Financial assumptions	(650,925)	514,930	-	-
- Experience adjustment	(493)	57,158	-	-
- Others	(29,125)	-	-	-
	<u>(680,523)</u>	<u>535,934</u>	<u>-</u>	<u>-</u>

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Others				
Defined benefit obligations assumed through business combinations	-	7,539	-	-
Benefits paid by the plan	(102,812)	(73,838)	-	-
Expected employees contribution	15,355	13,419	-	-
Effect of movements in exchange rates	178,466	519,628	-	-
	<u>91,009</u>	<u>466,748</u>	<u>-</u>	<u>-</u>
At 31 December	<u>6,332,930</u>	<u>6,583,823</u>	<u>-</u>	<u>-</u>

<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	2,828,847	2,074,399	-	-
Recognised in profit or loss:				
Interest income	24,789	31,568	-	-
	<u>24,789</u>	<u>31,568</u>	<u>-</u>	<u>-</u>
Recognised in other comprehensive income:				
Return on plan assets excluding amounts included in interest income	(433,836)	202,801	-	-
Others				
Expected plan participant contributions	15,355	13,419	-	-
Benefits paid by the plan	(25,758)	(18,913)	-	-
Contribution paid into the plan	332,513	296,337	-	-
Effect of movements in exchange rates	78,130	229,234	-	-
	<u>400,240</u>	<u>520,077</u>	<u>-</u>	<u>-</u>
At 31 December	<u>2,820,040</u>	<u>2,828,845</u>	<u>-</u>	<u>-</u>
Statement of financial position obligation at 31 December	<u>3,512,890</u>	<u>3,754,978</u>	<u>-</u>	<u>-</u>

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Equity securities	53,130	14,845	-	-
Insurance contract	2,695,665	2,710,795	-	-
Interest bearing securities	71,245	103,205	-	-
Total	<u>2,820,040</u>	<u>2,828,845</u>	<u>-</u>	<u>-</u>

Defined benefit plans established in United States

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 3.5 million (USD 0.1 million) in contributions to its defined benefit plans in 2022.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	2,310,866	2,746,141	-	-
Effect of movement in exchange rates	271,309	(53,689)	-	-
Statement of financial position obligation	<u>2,582,175</u>	<u>2,692,452</u>	<u>-</u>	<u>-</u>
<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	5,813,594	639,826	-	-
Recognised in profit or loss:				
Current service costs	332,675	251,660	-	-
Past service costs	5,388	-	-	-
Interest on obligation	174,884	196,794	-	-
Actuarial losses (gains)	982	(5,783)	-	-
	<u>513,929</u>	<u>442,671</u>	<u>-</u>	<u>-</u>
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Demographic assumptions	(6,232)	5,147	-	-
- Financial assumptions	(400,549)	500,226	-	-
- Experience adjustment	91,732	5,286	-	-
	<u>(315,049)</u>	<u>510,659</u>	<u>-</u>	<u>-</u>
Others				
Defined benefit obligations assumed through business combinations	1,950	4,395,672	-	-
Benefits paid by the plan	(410,651)	(104,052)	-	-
Expected employees contribution	7,164	-	-	-
Effect of movements in exchange rates	638,132	(71,182)	-	-
	<u>236,595</u>	<u>4,220,438</u>	<u>-</u>	<u>-</u>
At 31 December	<u>6,249,069</u>	<u>5,813,594</u>	<u>-</u>	<u>-</u>

<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	3,121,142	195,978	-	-
Recognised in profit or loss:				
Interest income	89,016	219,257	-	-
Others	(25,152)	(1,189)	-	-
	63,864	218,068	-	-
Recognised in other comprehensive income:				
Return on plan assets excluding amounts included in interest income	247,244	136,669	-	-
Others				
Fair value of plan assets assumed through business combinations	-	2,668,020	-	-
Benefits paid by the plan	(367,579)	(95,762)	-	-
Contribution paid into the plan	235,400	15,662	-	-
Effect of movements in exchange rates	366,823	(17,493)	-	-
	234,644	2,570,427	-	-
At 31 December	3,666,894	3,121,142	-	-
Statement of financial position obligation at 31 December	2,582,175	2,692,452	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Equity securities	2,174,819	2,245,839	-	-
Government bonds	4,026	4,551	-	-
Interest bearing securities	1,457,731	847,635	-	-
Others	30,318	23,117	-	-
Total	3,666,894	3,121,142	-	-

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 13.9 million in contributions to its defined benefit plans in 2022.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	538,991	505,781	-	-
Effect of movements in exchange rates	49,880	(8,937)	-	-
Statement of financial position obligation	588,871	496,844	-	-
<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	529,057	399,079	-	-
Recognised in profit or loss:				
Current service costs	67,433	58,621	-	-
Interest on obligation	36,498	31,071	-	-
Actuarial (gains) losses	(5,296)	3,523	-	-
	98,635	93,215	-	-
Recognised in other comprehensive income:				
Actuarial (gains) losses				
- Demographic assumptions	-	212	-	-
- Financial assumptions	(20,791)	46,504	-	-
- Experience adjustment	(237)	5,468	-	-
- Others	(576)	-	-	-
	(21,604)	52,184	-	-
Others				
Defined benefit obligations assumed through business combinations	-	7,799	-	-
Benefits paid by the plan	(34,494)	(16,035)	-	-
Effect of movements in exchange rates	52,925	(7,185)	-	-
	18,431	(15,421)	-	-
At 31 December	624,519	529,057	-	-

<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	32,212	17,768	-	-
Recognised in profit or loss:				
Interest income	2,236	1,609	-	-
	2,236	1,609	-	-
Recognised in other comprehensive income:				
Return on plan assets excluding amounts included in interest income	(130)	(6)	-	-
Others				
Fair value of plan assets assumed through business combinations	-	7,799	-	-
Contributions paid into the plan	2,312	3,851	-	-
Benefits paid by the plan	(4,027)	(560)	-	-
Effect of movements in exchange rates	3,045	1,752	-	-
	1,330	12,842	-	-
At 31 December	35,648	32,213	-	-
Statement of financial position obligation at 31 December	588,871	496,844	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Insurance contract	-	21,102	-	-
Others	35,648	11,111	-	-
Total	35,648	32,213	-	-

<i>Principal actuarial assumptions</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	(%)		(%)	
Thailand legal severance plan				
Discount rate	1.75	1.30	-	-
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 2021, the weighted-average duration of the defined benefit obligation was 8.00 years (2020: 8.00 years).

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	(%)		(%)	
Defined benefit plans established in Europe				
Discount rate	(0.02)-23.10	(0.02)-13.60	-	-
Expected return on plan assets	1.00-1.50	0.60-1.50	-	-
Future salary increases	0.80-18.00	0.80-8.50	-	-
Employee turnover	0.00-14.87	0.00-14.87	-	-

At 31 December 2021, the weighted-average duration of the defined benefit obligation were 8.50 to 26.90 years (2020: 8.10 to 28.50 years).

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	(%)		(%)	
Defined benefit plans established in United States				
Discount rate	2.30-7.85	2.10-5.75	-	-
Expected return on plan assets	2.50-5.75	2.50-7.75	-	-
Future salary increases	2.50-4.75	2.50-4.75	-	-
Employee turnover	3.66-25.00	3.52-26.50	-	-

At 31 December 2021, the weighted-average duration of the defined benefit obligation were 1.46 to 11.55 years (2020: 2.57 to 12.18 years).

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	(%)		(%)	
Defined benefit plans established in rest of the world				
Discount rate	6.18-7.50	4.08-7.00	-	-
Expected return on plan assets	6.55	6.30	-	-
Future salary increases	3.00-8.00	3.00-8.00	-	-
Employee turnover	0.00-15.00	0.00-15.00	-	-

At 31 December 2021, the weighted-average duration of the defined benefit obligation were 7.00 to 15.21 years (2020: 9.17 to 24.56 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.

<i>As at 31 December</i>	Consolidated financial statements			
	0.5% increase in assumption		0.5% decrease in assumption	
	2021	2020	2021	2020
	<i>(in million Baht)</i>			
<i>Thailand legal severance plan</i>				
Discount rate	(29)	(28)	31	30
Future salary increases	30	29	(29)	(27)
Employee turnover	(31)	(29)	33	31
<i>Defined benefit plans established in Europe</i>				
Discount rate	(604)	(785)	707	913
Expected return on plan assets	(23)	(24)	27	27
Future salary increases	66	77	(64)	(75)
Employee turnover	(14)	(17)	15	17
<i>Defined benefit plans established in United States</i>				
Discount rate	(218)	(284)	232	309
Expected return on plan assets	(26)	(15)	26	15
Future salary increases	87	51	(85)	(48)
Employee turnover	(1)	(1)	1	1
<i>Defined benefit plans established in rest of the world</i>				
Discount rate	(20)	(23)	20	24
Future salary increases	22	26	(22)	(24)
Employee turnover	(5)	-	6	7

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 Legal reserve

Section 116 of the Public Companies Act B.E. 2535 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.

25 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.

On 7 November 2019, Indorama Ventures Global Services Limited (“IVGSL”), a direct subsidiary of the Company, resolved to approve the purchase of the Debentures issued and offered by the Company for an amount up to Baht 1,400 million. As at 31 December 2019, the balance of the purchased Debentures amounting to Baht 679.6 million is presented as “Subordinated perpetual debentures acquired by subsidiary” as part of equity in the consolidated financial statement as at 31 December 2019.

During 2020, IVGSL sold the Debentures issued and offered by the Company amount of Baht 679.6 million to financial institution.

26 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.

The Group continues to consolidate its existing businesses. Fundamental shifts in the portfolio, both in its existing shape and form, necessitate the need to review the way the Group’s CODM analyse and report segment. In 2021, the Group’s reportable segments have been changed as following;

Reportable segments in 2020

Segment 1	Manufacture and distribution of PET value chain comprising PX, PTA, PET, and Recycling (“Integrated PET”)
Segment 2	Manufacture and distribution of specialty PET-related chemicals comprising PIA and NDC (“Specialty Chemicals”)
Segment 3	Manufacture and distribution of PET preforms and packaging (“Packaging”)
Segment 4	Manufacture and distribution of integrated EG, integrated purified EO, PO/MTBE and integrated surfactants comprising EOA, LAB and others (“Integrated Oxides and Derivatives”)
Segment 5	Manufacture and distribution of polyester, rayon, nylon, polypropylene, composites and worsted wool fibers, for three end-use segments: mobility, lifestyle and hygiene (“Fibers”)

Reportable segments in 2021

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”)

As a result, the Group has restated the previously reported segment information of the year 2020.

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 before finance costs and tax expense (income), as included in the internal management reports that are reviewed by the Group's CODM. Segment profit before finance costs and tax expense (income) is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments.

The Group's main revenue is derived from contracts with customers and recognised at a point in time.

Year ended 31 December 2021	Consolidated financial statements					
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
<i>Information about reportable segments</i>						
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	(22,907,054)	-	468,108,318
<i>Disaggregation of revenue from sales of goods</i>						
Primary geographical markets						
Thailand	14,082,954	20,092	4,047,516	627	-	18,151,189
North America	91,308,029	64,624,310	25,787,138	-	-	181,719,477
Europe	83,886,282	1,827,567	37,689,816	-	-	123,403,665
Rest of the world	86,653,835	9,394,283	48,785,869	-	-	144,833,987
Total segment revenue	275,931,100	75,866,252	116,310,339	627	-	468,108,318
Finance income	298,622	2,355	85,323	(2,427,917)	-	(2,041,617)
Unallocated revenue	-	-	-	-	7,006,250	7,006,250
Total revenue	293,768,962	80,442,819	117,189,891	(25,334,971)	7,006,250	473,072,951
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	24,739,630	9,495,064	10,093,505	(2,858,720)	-	41,469,479
Net foreign exchange (gain) loss	634,214	12,699	(83,000)	2,704,701	-	3,268,614
Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net	31,423	29,937	48,398	-	(12,686)	97,072
Impairment loss of property, plant and equipment and right-of-use assets	-	215,809	74,222	-	-	290,031
Depreciation and amortisation	8,709,142	7,763,564	5,108,864	-	-	21,581,570
Unallocated expenses	-	-	-	-	1,635,135	1,635,135
Total expenses	261,254,934	77,256,949	113,970,422	(22,949,226)	1,622,449	431,155,528
Share of profit (loss) of joint ventures, net of tax	(48,975)	-	209,210	-	-	160,235
Profit (loss) before finance costs and						

Year ended 31 December 2021	Consolidated financial statements					
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
tax expense (income)	32,465,053	3,185,870	3,428,679	(2,385,745)	5,383,801	42,077,658
Finance costs	(2,373,297)	(878,868)	(1,387,948)	2,427,918	-	(2,212,195)
Unallocated items	-	-	-	-	(4,908,467)	(4,908,467)
Profit (loss) before tax expense (income)	30,091,756	2,307,002	2,040,731	42,173	475,334	34,956,996
Tax expense (income)	6,049,712	368,711	120,840	-	-	6,539,263
Unallocated items	-	-	-	-	163,991	163,991
Profit (loss) for the year	24,042,044	1,938,291	1,919,891	42,173	311,343	28,253,742

<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
Cash and cash equivalents	6,484,758	351,270	4,706,569	-	-	11,542,597
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	-	-	-	-	100,502,606	100,502,606
Total assets	234,253,958	114,689,216	99,572,167	(7,189,707)	100,502,606	541,828,240
Trade accounts payable	67,335,959	5,761,808	23,048,590	(5,971,708)	-	90,174,649
Other payables	3,817,082	3,050,859	1,646,332	(4,038,903)	-	4,475,370
Interest-bearing liabilities	64,486,415	39,030,619	41,225,217	(101,447,863)	-	43,294,388
Unallocated liabilities	-	-	-	-	232,880,405	232,880,405
Total liabilities	135,639,456	47,843,286	65,920,139	(111,458,474)	232,880,405	370,824,812
Capital expenditure and investments	12,077,652	6,683,120	4,326,820	-	3,126,472	26,214,064
Depreciation	7,564,413	6,705,629	4,247,077	-	116,645	18,633,764
Amortisation	1,081,726	1,057,935	942,710	-	20,554	3,102,925
Loss on disposal and written-off of property, plant and equipment	106,132	8,543	27,716	-	51	142,442

Year ended 31 December 2020	Consolidated financial statements					
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
<i>Information about reportable segments</i>						
External revenue	201,426,756	46,148,494	83,937,657	-	-	331,512,907
Inter-segment revenue	10,845,145	2,404,271	420,029	(13,669,445)	-	-
Total segment revenue	212,271,901	48,552,765	84,357,686	(13,669,445)	-	331,512,907
<i>Disaggregation of revenue from sales of goods</i>						
Primary geographical markets						
Thailand	9,419,716	19,120	2,983,524	-	-	12,422,360
North America	66,729,487	38,540,309	18,145,574	-	-	123,415,370
Europe	55,139,894	2,038,577	30,231,229	-	-	87,409,700
Rest of the world	70,137,659	5,550,488	32,577,330	-	-	108,265,477
Total segment revenue	201,426,756	46,148,494	83,937,657	-	-	331,512,907
Net foreign exchange gain (loss)	(203,463)	28,634	(200,163)	3,902,232	-	3,527,240
Gain on bargain purchase	-	1,806,350	-	-	-	1,806,350
Finance income	244,273	1,227	17,409	(2,853,880)	-	(2,590,971)
Unallocated revenue	-	-	-	-	2,406,691	2,406,691
Total revenue	212,312,711	50,388,976	84,174,932	(12,621,093)	2,406,691	336,662,217
Cost of sales of goods	175,318,880	37,391,243	71,647,566	(14,302,694)	-	270,054,995
Distribution costs and administrative expenses	19,020,470	8,183,387	8,120,750	(2,916,397)	-	32,408,210
Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net	19,613	(2,120)	25,867	-	10,766	54,126
Impairment loss of property, plant and equipment and right-of-use assets	39,461	474,095	111,390	-	-	624,946
Depreciation and amortisation	7,931,342	7,251,841	5,238,310	-	-	20,421,493
Unallocated expenses	-	-	-	-	4,010,458	4,010,458
Total expenses	202,329,766	53,298,446	85,143,883	(17,219,091)	4,021,224	327,574,228
Share of profit (loss) of joint ventures, net of tax	(60,647)	-	203,459	-	-	142,812
Profit (loss) before finance costs and						

	Consolidated financial statements					
<i>Year ended 31 December 2020</i>	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
tax expense (income)	9,922,298	(2,909,470)	(765,492)	4,597,998	(1,614,533)	9,230,801
Finance costs	(2,935,413)	(1,029,751)	(1,571,870)	2,853,880	-	(2,683,154)
Unallocated items	-	-	-	-	(4,990,707)	(4,990,707)
Profit (loss) before tax expense (income)	6,986,885	(3,939,221)	(2,337,362)	7,451,878	(6,605,240)	1,556,940
Tax expense (income)	1,252,492	(1,506,557)	(443,395)	-	-	(697,460)
Unallocated items	-	-	-	-	(545,662)	(545,662)
Profit (loss) for the year	5,734,393	(2,432,664)	(1,893,967)	7,451,878	(6,059,578)	2,800,062

<i>At / for the year ended 31 December 2020</i>	Consolidated financial statements					
	Combined PET	Integrated Oxides and Derivatives	Fibers <i>(in thousand Baht)</i>	Eliminations	Unallocated	Total
Cash and cash equivalents	6,617,866	743,964	5,770,561	-	-	13,132,391
Trade accounts receivable	22,034,348	6,736,869	8,479,002	(5,529,757)	-	31,720,462
Inventories	32,194,313	6,253,716	15,550,241	-	-	53,998,270
Property, plant and equipment	123,702,318	83,190,668	56,060,537	-	-	262,953,523
Unallocated assets	-	-	-	-	91,366,860	91,366,860
Total assets	184,548,845	96,925,217	85,860,341	(5,529,757)	91,366,860	453,171,506
Trade accounts payable	41,487,271	5,462,700	15,365,542	(4,568,149)	-	57,747,364
Other payables	2,249,300	1,374,001	751,832	(1,878,326)	-	2,496,807
Interest-bearing liabilities	64,561,430	32,432,686	39,611,371	(93,839,017)	-	42,766,470
Unallocated liabilities	-	-	-	-	214,553,080	214,553,080
Total liabilities	108,298,001	39,269,387	55,728,745	(100,285,492)	214,553,080	317,563,721
Capital expenditure and investments	9,611,016	64,224,575	3,031,013	-	1,498,685	78,365,289
Depreciation	6,850,268	6,564,361	4,295,623	-	46,931	17,757,183
Amortisation	1,081,074	687,480	942,688	-	18,771	2,730,013
Loss (gain) on disposal and written-off of property, plant and equipment	(12,820)	8,362	132,977	-	(43)	128,476

(b) Geographical segments

In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers. Segment assets are based on the geographical location of the assets.

The Group operates in the following main geographical areas:

Segment 1	Thailand
Segment 2	North America
Segment 3	Europe
Segment 4	Rest of the world

Consolidated financial statements				
	Segment assets		Capital expenditure and investments	
	2021	2020	2021	2020
<i>(in thousand Baht)</i>				
Thailand	36,951,252	39,879,445	4,013,085	2,318,926
North America	254,641,864	215,034,477	16,661,130	70,614,631
Europe	137,660,943	112,217,798	3,608,359	3,923,700
Rest of the world	112,574,181	86,039,786	1,931,490	1,508,032
Total	541,828,240	453,171,506	26,214,064	78,365,289

(c) Promotional privileges

Certain subsidiaries incorporated in Thailand have been granted promotional certificates by the Office of the Board of Investment for manufacturing of worsted wool yarn, wool top, purified terephthalic acid, polyethylene terephthalate resin, PET preforms and closures, amorphous resin and being an international business center (“promoted businesses”). The certain subsidiaries incorporated in Thailand have been granted several privileges including exemption and/or reduction from payment of income tax on the net profit derived from promoted operations with certain time, terms and conditions prescribed in the promotional certificates.

Consolidated financial statements						
<i>Year ended</i> 31 December	2021			2020		
	Promoted businesses	Non-promoted businesses	Total	Promoted businesses	Non-promoted businesses	Total
<i>(in thousand Baht)</i>						
Export sales	11,340,683	21,901,558	33,242,241	10,694,705	14,679,748	25,374,453
Local sales	4,863,665	33,570,346	38,434,011	4,979,027	19,834,097	24,813,124
Eliminations	(5,367,817)	-	(5,367,817)	(3,562,986)	-	(3,562,986)
Total	10,836,531	55,471,904	66,308,435	12,110,746	34,513,845	46,624,591

(d) 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 year are as follows:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
At 1 January	1,391,536	563,485	-	-
Recognised as revenue from sale of goods during the year	(17,236,112)	(14,532,328)	-	-
Advance received during the year	16,936,284	15,411,345	-	-
Reclassification	-	(22,035)	-	-
Effect of movements in exchange rates	124,587	(28,931)	-	-
At 31 December	1,216,295	1,391,536	-	-

27 Other income

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Income from tax credits	1,151,680	-	-	-
Insurance claim	1,150,788	942,824	-	-
Others	2,446,421	2,088,656	552,665	626,182
Total	4,748,889	3,031,480	552,665	626,182

Indorama Ventures Polimeros S.A. and Indorama Ventures Fibras Brasil Ltda., indirect subsidiaries of the Company, incorporated in Brazil, had recognised income from tax credits amounting to BRL 194.2 million (Baht 1,151.7 million) in May 2021 which resulted pursuant to the final judgment of the Brazilian Supreme Federal Court (the “Court”) issued in May 2021, 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.

28 Cost of sales of goods

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Changes in inventories of finished goods and work in progress	(14,595,915)	10,722,945	-	-
Raw materials and consumables used	285,783,256	187,960,504	-	-
Depreciation and amortisation	19,384,261	18,203,118	-	-
Personnel expense	30,318,263	27,021,978	-	-
Others	62,238,088	43,973,328	-	-
Total	383,127,953	287,881,873	-	-

29 Distribution costs

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Distribution	24,157,721	17,921,023	-	-
Insurance expense	1,125,632	1,027,457	-	-
Travelling expense	229,307	235,329	-	-
Royalty expense	529,527	424,913	-	-
Others	1,807,410	1,552,960	-	-
Total	27,849,597	21,161,682	-	-

30 Administrative expenses

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Personnel expense	6,530,521	5,289,628	-	-
Depreciation and amortisation	2,352,427	2,284,078	-	-
Professional fees	2,198,973	1,674,462	272,543	188,679
Others	8,090,750	8,294,114	225,222	280,650
Total	19,172,671	17,542,282	497,765	469,329

31 Employee benefit expenses

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Management				
Wages and salaries	194,533	177,001	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	5,280	5,332	-	-
Others	121,208	126,986	17,720	23,220
	321,021	309,319	17,720	23,220
Other employees				
Wages and salaries	27,069,894	24,530,311	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	3,417,586	2,816,665	-	-
Bonus	1,839,688	1,223,257	-	-
Staff welfare	4,483,659	3,701,586	-	-
Others	37,957	39,787	-	-
	36,848,784	32,311,606	-	-
Total employee benefit expenses	37,169,805	32,620,925	17,720	23,220

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 2021 amounted to Baht 35.1 million (2020: Baht 31.8 million), which included in employee benefit expenses.

Employee retirement schemes

Subsidiaries in United States established a 401(k) plan that allows eligible employees to contribute up to 60% of their compensation, with the contributions by the US subsidiaries of 50% of employee contributions but not exceed 6% of their compensation. 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 2021 amounted to approximately USD 8.5 million (Baht 272.6 million) (2020: USD 7.7 million (Baht 239.5 million)), which included in employee benefit expenses.

Subsidiaries in Europe established a defined contribution plan that provides benefits for its 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 2021 was GBP 0.1 million and EUR 3.8 million (Baht 150.0 million) (2020: GBP 0.1 million and EUR 3.6 million (Baht 133.0 million)), which included in employee benefit expenses.

32 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:

		Consolidated financial statements		Separate financial statements	
	<i>Note</i>	2021	2020	2021	2020
		<i>(in thousand Baht)</i>			
Changes in inventories of finished goods and work in progress	28	(14,595,915)	10,722,945	-	-
Raw materials and consumables used	28	285,783,256	187,960,504	-	-
Employee benefit expenses	31	36,848,784	32,311,606	-	-
Depreciation and amortisation	28, 30	21,736,688	20,487,196	-	-
Impairment loss of property, plant and equipment and right-of-use assets		290,031	624,946	-	-
Distribution expense	29	24,157,721	17,921,023	-	-

33 Finance costs

	Note	Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
<i>(in thousand Baht)</i>					
Interest expense:					
Related parties	5	4,759	6,772	291,427	-
Financial institutions		7,494,911	8,139,564	2,190,155	2,231,194
Total interest expense		7,499,670	8,146,336	2,481,582	2,231,194
Less: amount included in the cost of assets under construction and intangible assets under development	14, 18	(379,008)	(472,475)	-	-
Net		7,120,662	7,673,861	2,481,582	2,231,194

34 Tax expense (income)

<i>Income tax recognised in profit or loss</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<i>(in million Baht)</i>				
Current tax expense				
Current year	4,767	38	20	8
Adjustment for under provided in prior years	197	41	-	-
	4,964	79	20	8
Deferred tax expense				
Movements in temporary differences	3,032	899	9	32
Recognition of previously unrecognised tax losses	(1,293)	(2,221)	-	-
	1,739	(1,322)	9	32
Total tax expense (income)	6,703	(1,243)	29	40

<i>Income tax</i>	Consolidated financial statements					
	Before tax	2021 Tax (expense) benefit	Net of tax	Before tax	2020 Tax (expense) benefit	Net of tax
<i>(in million Baht)</i>						
Recognised in other comprehensive income						
Net investment hedge	(2,845)	87	(2,758)	862	(9)	853
Cash flow hedges reserve	1,420	(197)	1,223	(1,188)	94	(1,094)
Defined benefit plan actuarial gains (losses)	755	(157)	598	(797)	186	(611)
Total	(670)	(267)	(937)	(1,123)	271	(852)

<i>Income tax</i>	Separate financial statements					
	Before Tax	2021 Tax (expense) benefit	Net of tax (in million Baht)	Before tax	2020 Tax (expense) benefit	Net of tax
Recognised in other comprehensive income						
Net investment hedge	(14)	3	(11)	(99)	20	(79)
Cash flow hedges reserve	74	(15)	59	(64)	12	(52)
Total	60	(12)	48	(163)	32	(131)

Reconciliation of effective tax rate	Consolidated financial statements			
	2021		2020	
	Rate (%)	(in million Baht)	Rate (%)	(in million Baht)
Profit before tax expense (income)		34,957		1,557
Income tax using the Thai corporation tax rate	20.00	6,991	20.00	311
Income tax reduction - deferred - other countries		(118)		(66)
Effect of different tax rates in foreign jurisdictions		(537)		(677)
Income not subject to tax and tax privileges		(1,523)		(931)
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(150)
Expenses not deductible for tax purposes		1,220		880
Utilisation of previously unrecognised tax losses		(355)		(374)
Recognition of deferred tax assets from previously unrecognised tax losses		(1,293)		(2,221)
Current year losses for which no deferred tax asset was recognised		328		451
Under provided in prior years		197		41
Written-off unrecoverable deferred tax assets from loss carry forward		1		677
Share of profit of joint ventures		(138)		(55)
Foreign exchange differences arising from transaction of intercompany loans considered as part of net investment in foreign operations		854		82
Gain on bargain purchase		-		(410)
Change in recognition of temporary difference		1,440		1,353
Others		(214)		(154)
Total	19.17	6,703	(79.83)	(1,243)

Reconciliation of effective tax rate	Separate financial statements			
	2021		2020	
	Rate (%)	(in million Baht)	Rate (%)	(in million Baht)
Profit before tax expense		8,229		7,287
Income tax using the Thai corporation tax rate	20.00	1,646	20.00	1,457
Income not subject to tax		(1,472)		(1,274)
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(150)
Expenses not deductible for tax purposes		10		7

<i>Reconciliation of effective tax rate</i>	Separate financial statements			
	2021		2020	
	<i>Rate (%)</i>	<i>(in million Baht)</i>	<i>Rate (%)</i>	<i>(in million Baht)</i>
Change in recognition of temporary difference		(5)		-
Total	0.35	29	0.55	40

<i>Deferred tax</i> <i>At 31 December</i>	Consolidated financial statements					
	Assets		Liabilities		Net	
	2021	2020	2021	2020	2021	2020
	<i>(in million Baht)</i>					
Property, plant and equipment	(1,915)	(1,889)	28,859	23,579	26,944	21,690
Right-of-use assets	(101)	(53)	-	-	(101)	(53)
Intangible assets	(2,564)	(2,769)	5,408	5,424	2,844	2,655
Trade accounts receivable	(16)	-	4	-	(12)	-
Derivatives	(256)	(257)	479	378	223	121
Inventories	(382)	(132)	12	3	(370)	(129)
Provisions	(1,014)	(868)	321	1,409	(693)	541
Loss carry forward	(9,272)	(8,492)	-	-	(9,272)	(8,492)
Others	(2,910)	(2,300)	592	41	(2,318)	(2,259)
Total	(18,430)	(16,760)	35,675	30,834	17,245	14,074
Set off of tax	15,773	14,148	(15,773)	(14,148)	-	-
Net deferred tax (assets) liabilities	(2,657)	(2,612)	19,902	16,686	17,245	14,074

<i>Deferred tax</i> <i>At 31 December</i>	Separate financial statements					
	Assets		Liabilities		Net	
	2021	2020	2021	2020	2021	2020
	<i>(in million Baht)</i>					
Derivatives	(12)	(27)	167	170	155	143
Provisions	(2)	(5)	-	-	(2)	(5)
Loss carry forward	-	(6)	-	-	-	(6)
Total	(14)	(38)	167	170	153	132
Set off of tax	14	38	(14)	(38)	-	-
Net deferred tax liabilities	-	-	153	132	153	132

<i>Net deferred tax (assets) liabilities</i>	Consolidated financial statements					
	At 1 January 2021	Charged / (Credited to) :				At 31 December 2021
		Profit or loss	Other comprehensive income	Acquired through business combinations	Exchange differences	
	<i>(in million Baht)</i>					
Property, plant and equipment	21,690	3,117	-	(8)	2,145	26,944
Right-of-use assets	(53)	(42)	-	-	(6)	(101)
Intangible assets	2,655	71	-	(19)	137	2,844
Trade accounts receivable	-	(12)	-	-	-	(12)
Derivatives	121	(12)	110	-	4	223
Inventories	(129)	(230)	-	-	(11)	(370)
Provisions	541	(1,245)	-	(12)	23	(693)
Loss carry forward	(8,492)	117	-	(5)	(892)	(9,272)
Others	(2,259)	(25)	157	(1)	(190)	(2,318)
Total	14,074	1,739	267	(45)	1,210	17,245

Consolidated financial statements							
Net deferred tax (assets) liabilities	At 1 January 2020	Charged / (Credited to) :				Exchange differences	At 31 December 2020
		Opening balance adjustment	Profit or loss	Other comprehensive income	Acquired through business combinations		
Property, plant and equipment	14,307	-	3,880	-	3,529	(26)	21,690
Right-of-use assets	-	-	(54)	-	-	1	(53)
Intangible assets	5,394	-	(118)	-	(2,811)	190	2,655
Trade accounts receivable	(3)	3	-	-	-	-	-
Derivatives	306	(21)	(77)	(90)	-	3	121
Inventories	(171)	-	42	-	-	-	(129)
Provisions	(185)	(6)	813	-	(56)	(25)	541
Loss carry forward	(3,867)	-	(4,775)	-	-	150	(8,492)
Others	(1,093)	(1)	(1,033)	(181)	2	47	(2,259)
Total	14,688	(25)	(1,322)	(271)	664	340	14,074

Separate financial statements				
Net deferred tax (assets) liabilities	At 1 January 2021	Charged / (Credited to) :		At 31 December 2021
		Profit or loss	Other comprehensive income	
Derivatives	143	-	12	155
Provisions	(5)	3	-	(2)
Loss carry forward	(6)	6	-	-
Total	132	9	12	153

Separate financial statements				
Net deferred tax (assets) liabilities	At 1 January 2020	Charged / (Credited to) :		At 31 December 2020
		Profit or loss	Other comprehensive income	
Derivatives	175	-	(32)	143
Provisions	(3)	(2)	-	(5)
Loss carry forward	(40)	34	-	(6)
Total	132	32	(32)	132

Unrecognised deferred tax assets	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Deductible temporary differences	36	14	-	-
Tax losses	3,257	2,724	-	-
Total	3,293	2,738	-	-

The tax losses expire from 2022 onward. The deductible temporary differences do not expire under current tax legislation. The Group has not recognised these items as deferred tax assets because it is not probable that the Group will have sufficient future taxable profit to utilise the benefits therefrom.

35 Earnings per share

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht/thousand shares)</i>			
Profit for the year attributable to owners of the parent	26,288,027	2,414,276	8,200,735	7,246,565
Less: coupon payment on subordinated perpetual debentures	<u>(750,000)</u>	<u>(748,869)</u>	<u>(750,000)</u>	<u>(752,055)</u>
Profit attributable to ordinary shareholders of the Company (basic)	<u>25,538,027</u>	<u>1,665,407</u>	<u>7,450,735</u>	<u>6,494,510</u>
Weighted average number of ordinary shares outstanding (basic) at 31 December	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>
Earnings per share (basic) <i>(in Baht)</i>	<u>4.55</u>	<u>0.30</u>	<u>1.33</u>	<u>1.16</u>

36 Dividends

The shareholders of the Company have approved dividends as follows:

	Approval date	Payment schedule	Dividend rate per share <i>(Baht)</i>	Amount <i>(in million Baht)</i>
<i>2021</i>				
2020 Annual dividend	27 April 2021	May 2021	<u>0.175</u>	<u>982.55</u>
2021 Interim dividend	14 May 2021	June 2021	<u>0.250</u>	<u>1,403.64</u>
2021 Interim dividend	16 August 2021	September 2021	<u>0.250</u>	<u>1,403.64</u>
2021 Interim dividend	12 November 2021	December 2021	<u>0.250</u>	<u>1,403.64</u>
<i>2020</i>				
2019 Interim dividend	10 April 2020	May 2020	<u>0.175</u>	<u>982.55</u>
2020 Interim dividend	13 May 2020	June 2020	<u>0.175</u>	<u>982.55</u>
2020 Interim dividend	14 August 2020	September 2020	<u>0.175</u>	<u>982.55</u>
2020 Interim dividend	10 November 2020	December 2020	<u>0.175</u>	<u>982.55</u>

37 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. It 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.

At 31 December	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
					(in million Baht)				
2021									
Other financial assets									
Interest rate swaps	419	-	-	-	419	-	419	-	419
Forward exchange contracts	34	142	-	-	176	-	176	-	176
Cross currency swaps	631	-	-	-	631	-	631	-	631
Commodity derivatives	556	115	-	-	671	-	671	-	671
Total other financial assets	1,640	257	-	-	1,897	-			
Other financial liabilities									
Interest rate swaps	150	5	-	-	155	-	155	-	155
Forward exchange contracts	1,879	106	-	-	1,985	-	1,985	-	1,985
Cross currency swaps	299	-	-	-	299	-	299	-	299
Commodity derivatives	72	58	-	-	130	-	130	-	130
Total other financial liabilities	2,400	169	-	-	2,569	-			
2020									
Other financial assets									
Forward exchange contracts	1,529	138	-	-	1,667	-	1,667	-	1,667
Cross currency swaps	1,021	-	-	-	1,021	-	1,021	-	1,021
Commodity derivatives	541	43	-	-	584	-	584	-	584
Total other financial assets	3,091	181	-	-	3,272	-			
Other financial liabilities									
Interest rate swaps	1,045	17	-	-	1,062	-	1,062	-	1,062
Forward exchange contracts	322	160	-	-	482	-	482	-	482
Cross currency swaps	237	-	-	-	237	-	237	-	237
Commodity derivatives	56	5	-	-	61	-	61	-	61
Total other financial liabilities	1,660	182	-	-	1,842	-			

At 31 December	Separate financial statements					Total
	Hedging instruments	Carrying amount	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	
2021						
Other financial assets						
Forward exchange contracts	-	-	1	-	-	1
Total other financial assets	-	-	1	-	-	1
Other financial liabilities						
Interest rate swaps	62	-	-	-	-	62
Total other financial liabilities	62	-	-	-	-	62
2020						
Other financial assets						
Forward exchange contracts	222	-	1	-	-	223
Total other financial assets	222	-	1	-	-	223
Other financial liabilities						
Interest rate swaps	136	-	-	-	-	136
Total other financial liabilities	136	-	-	-	-	136

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 futures/ 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

Consolidated financial statements					
Contractual cash flows					
<i>At 31 December</i>	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>		
2020					
<i>Non-derivative financial liabilities</i>					
Bank overdrafts	3,019,308	3,019,308	-	-	3,019,308
Trade accounts payable	57,782,561	57,782,561	-	-	57,782,561
Short-term loans from financial institutions	17,706,303	17,706,303	-	-	17,706,303
Long-term loans from financial institutions	108,367,794	8,919,764	88,807,546	10,640,484	108,367,794
Lease liabilities	10,658,050	1,713,584	3,937,284	5,007,182	10,658,050
Debentures	72,208,998	7,583,570	39,240,850	25,384,578	72,208,998
Interest payable	677,844	4,296,964	10,733,079	4,564,529	19,594,572
	<u>270,420,858</u>	<u>101,022,054</u>	<u>142,718,759</u>	<u>45,596,773</u>	<u>289,337,586</u>
<i>Derivative financial liabilities</i>					
Cross currency swaps:	237,400				
- Cash outflow		247,711	988,396	10,236,482	11,472,589
- Cash inflow		(354,540)	(1,418,160)	(10,386,965)	(12,159,665)
Interest rate swaps	1,062,388	500,854	635,109	-	1,135,963
Forward exchange contracts	481,877				
- Cash outflow		6,737,303	9,956,615	-	16,693,918
- Cash inflow		(6,930,851)	(10,142,000)	-	(17,072,851)
Commodity derivatives	60,562	60,562	-	-	60,562
	<u>1,842,227</u>	<u>261,039</u>	<u>19,960</u>	<u>(150,483)</u>	<u>130,516</u>

Separate financial statements					
Contractual cash flows					
<i>At 31 December</i>	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>		
2021					
<i>Non-derivative financial liabilities</i>					
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>
<i>Derivative financial liabilities</i>					
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>

<i>At 31 December</i>	Separate financial statements					Total
	Carrying amount	Contractual cash flows			Total	
		1 year or less	More than 1 year but less than 5 years	More than 5 years		
			<i>(in thousand Baht)</i>			
2020						
<i>Non-derivative financial liabilities</i>						
Long-term loans from financial institutions	8,988,664	112,274	8,876,390	-	8,988,664	
Debentures	54,412,231	6,487,787	22,539,865	25,384,579	54,412,231	
Interest payable	293,182	2,321,700	6,153,530	4,392,350	12,867,580	
	<u>63,694,077</u>	<u>8,921,761</u>	<u>37,569,785</u>	<u>29,776,929</u>	<u>76,268,475</u>	
<i>Derivative financial liabilities</i>						
Interest rate swaps	136,321	67,105	69,837	-	136,942	
	<u>136,321</u>	<u>67,105</u>	<u>69,837</u>	<u>-</u>	<u>136,942</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:

(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.

The Group's/Company's risk management policy is to hedge up to 90% its estimated foreign currency exposure in respect of forecast sales and purchases within 12 months at any point in time. The Group/Company uses forward exchange contracts to hedge its currency risk, mostly with less-than-one-year maturity from the reporting date. These contracts are generally designated as financial instruments measured at FVTPL.

The Group/Company designates the spot element of forward foreign exchange contracts to hedge its currency risk and applies a hedge ratio of 1:1. The Group's/Company's policy specifies the critical terms of the forward exchange contracts to align with the hedged item.

The Group/Company determines the existence of an economic relationship between the hedging instrument and hedged item based on the currency, amount and timing of their respective cash flows. The Group/Company assesses whether the derivative designated in each hedging relationship is effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedge relationships, the main sources of ineffectiveness are:

- the effect of the counterparties' and the Group/Company's own credit risk on the fair value of the forward foreign exchange contracts, which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in exchange rates; and
- differences in the timing of the hedged transactions.

<i>Exposure to foreign currency, regardless of derivatives at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>United States Dollars</i>				
Cash and cash equivalents	4,511,027	1,013,970	1,134	1,047
Trade accounts receivable	6,710,114	3,449,307	-	-
Short-term loans to related parties	-	-	3,267,325	3,023,380
Interest-bearing liabilities	(64,840,800)	(53,496,259)	(3,224,278)	(3,010,979)
Trade accounts payable	(16,774,249)	(7,548,371)	-	-
Net statement of financial position exposure	<u>(70,393,908)</u>	<u>(56,581,353)</u>	<u>44,181</u>	<u>13,448</u>
<i>Euro</i>				
Cash and cash equivalents	350,761	205,053	15	15
Trade accounts receivable	1,840,866	1,009,925	-	-
Interest-bearing liabilities	(10,696,931)	(11,448,925)	-	-
Trade accounts payable	(962,641)	(214,747)	-	-
Net statement of financial position exposure	<u>(9,467,945)</u>	<u>(10,448,694)</u>	<u>15</u>	<u>15</u>
<i>Pounds Sterling</i>				
Cash and cash equivalents	39,512	83,055	-	-
Trade accounts receivable	61,954	76,277	-	-
Interest-bearing liabilities	-	(1)	-	-
Trade accounts payable	(17,802)	(13,110)	-	-
Net statement of financial position exposure	<u>83,664</u>	<u>146,221</u>	<u>-</u>	<u>-</u>
<i>Japanese Yen</i>				
Cash and cash equivalents	46	71	-	-
Trade accounts receivable	-	10	-	-
Trade accounts payable	(187,359)	(29,705)	-	-
Net statement of financial position exposure	<u>(187,313)</u>	<u>(29,624)</u>	<u>-</u>	<u>-</u>

<i>Exposure to foreign currency, regardless of derivatives at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Chinese Yuan				
Cash and cash equivalents	332,471	378,303	-	-
Trade accounts receivable	481,073	337,825	-	-
Interest-bearing liabilities	(53,114)	(75,369)	-	-
Trade accounts payable	(339,171)	(171,904)	-	-
Net statement of financial position exposure	421,259	468,855	-	-
Mexican Peso				
Cash and cash equivalents	161,091	148,442	-	-
Trade accounts receivable	918,791	378,530	-	-
Short-term loans to related parties	-	56,250	-	-
Interest-bearing liabilities	(102,407)	(57,953)	-	-
Trade accounts payable	(903,794)	(1,364,689)	-	-
Net statement of financial position exposure	73,681	(839,420)	-	-
Polish Zloty				
Cash and cash equivalents	-	80,774	-	-
Trade accounts receivable	-	101,631	-	-
Trade accounts payable	-	(179,948)	-	-
Net statement of financial position exposure	-	2,457	-	-
Indonesian Rupiah				
Cash and cash equivalents	147,031	167,089	-	-
Trade accounts receivable	1,018,920	790,556	-	-
Interest-bearing liabilities	-	(9,814)	-	-
Trade accounts payable	(2,333,058)	(1,473,252)	-	-
Net statement of financial position exposure	(1,167,107)	(525,421)	-	-
Singapore Dollars				
Cash and cash equivalents	6,133	5,508	-	-
Interest-bearing liabilities	(4,605,672)	-	-	-
Trade accounts payable	(176)	-	-	-
Net statement of financial position exposure	(4,599,715)	5,508	-	-
Danish Krone				
Cash and cash equivalents	140,101	506,237	-	-
Trade accounts receivable	226,705	179,467	-	-
Interest-bearing liabilities	(324)	(4,518)	-	-
Trade accounts payable	(488,664)	(444,322)	-	-
Net statement of financial position exposure	(122,182)	236,864	-	-

<i>Exposure to foreign currency, regardless of derivatives at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>Turkish Lira</i>				
Cash and cash equivalents	1,298	3,334	-	-
Trade accounts payable	(13,505)	(6,143)	-	-
Net statement of financial position exposure	(12,207)	(2,809)	-	-
<i>Indian Rupee</i>				
Cash and cash equivalents	10,595	125,640	-	-
Trade accounts receivable	61,960	45,686	-	-
Trade accounts payable	(8,595)	(2,854)	-	-
Net statement of financial position exposure	63,960	168,472	-	-
<i>Czech Koruna</i>				
Cash and cash equivalents	461	35,650	-	-
Trade accounts receivable	979	1,274	-	-
Interest-bearing liabilities	(59,935)	-	-	-
Trade accounts payable	(9,383)	(96,279)	-	-
Net statement of financial position exposure	(67,878)	(59,355)	-	-
<i>Egyptian pound</i>				
Cash and cash equivalents	4,590	19,599	-	-
Trade accounts receivable	79,090	28,047	-	-
Interest-bearing liabilities	-	(17,186)	-	-
Trade accounts payable	(39,238)	(19,739)	-	-
Net statement of financial position exposure	44,442	10,721	-	-
<i>Brazilian real</i>				
Cash and cash equivalents	78,306	70,672	-	-
Trade accounts receivable	55,787	54,243	-	-
Trade accounts payable	(20,347)	(30,925)	-	-
Net statement of financial position exposure	113,746	93,990	-	-
<i>Israeli New Shekels</i>				
Cash and cash equivalents	63,966	413,881	-	-
Trade accounts receivable	192,833	35,984	-	-
Interest-bearing liabilities	(2,690,196)	(3,127,223)	-	-
Trade accounts payable	(17,545)	(14,147)	-	-
Net statement of financial position exposure	(2,450,942)	(2,691,505)	-	-

<i>Exposure to foreign currency, regardless of derivatives at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Russian ruble				
Cash and cash equivalents	119,911	175,026	-	-
Trade accounts receivable	259,171	119,878	-	-
Trade accounts payable	(6,818)	(7,029)	-	-
Net statement of financial position exposure	372,264	287,875	-	-
Arab Emirates Dirham				
Cash and cash equivalents	5,939	-	-	-
Trade accounts receivable	149,758	66,762	-	-
Net statement of financial position exposure	155,697	66,762	-	-
Bulgarian Lev				
Trade accounts receivable	4,609	-	-	-
Trade accounts payable	(44,121)	-	-	-
Net statement of financial position exposure	(39,512)	-	-	-
New Zealand dollar				
Cash and cash equivalents	10,220	-	-	-
Trade accounts receivable	19,109	-	-	-
Net statement of financial position exposure	29,329	-	-	-

The net fair value position of cross currency swaps and forward exchange contracts at 31 December 2021 was Baht 1,476.3 million (net liability position) (2020: Baht 1,968.6 million (net asset position)).

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.

<i>At 31 December 2021</i>	Movement (%)	Consolidated financial statements			
		Profit or loss		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
		<i>(in thousand Baht)</i>			
USD	1	702,663	(702,663)	62,683	(49,117)
EUR	1	100,773	(100,773)	118,274	39,334
At 31 December 2020					
USD	1	544,507	(544,507)	(64,267)	161,837
EUR	1	105,434	(105,434)	159,095	166

<i>At 31 December 2021</i>	Movement (%)	Separate financial statements			
		Profit or loss		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
USD	1	(442)	442	-	-
EUR	1	-	-	-	-
<i>At 31 December 2020</i>					
USD	1	(134)	134	-	-
EUR	1	-	-	15,551	(8,037)

(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.

The Group/Company determines the existence of a relationship between the hedging instrument and hedged item based on the reference interest rates, tenors, repricing dates and maturities and the notional or par amounts.

The Group/Company assesses whether the derivative designated in each hedging relationship is expected to be effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedge relationships, the main sources of ineffectiveness are:

- the effect of the counterparty's and the Group/Company's own credit risk on the fair value of the swaps, which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in interest rates; and
- differences in repricing dates between the swaps and the borrowings.

<i>Exposure to interest rate risk at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>Financial instruments with variable interest rates</i>				
Financial assets	30,229	292,573	-	-
Financial liabilities	(124,165,948)	(119,498,257)	(9,229,957)	(9,020,680)
Net statement of financial position exposure	(124,135,719)	(119,205,684)	(9,229,957)	(9,020,680)
Interest rate swaps	71,165,205	80,042,676	2,955,990	3,003,710
Net exposure	(52,970,514)	(39,163,008)	(6,273,967)	(6,016,970)

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 0.6 to 2.22 percent per annum to a fixed interest

rate ranging from -0.3 to 2.47 percent per annum, with monthly and quarterly settlement starting on January 2019 until March 2025.

Fair value sensitivity analysis for fixed-rate instruments

The Group/Company does not account for any fixed-rate financial assets or financial liabilities, at FVTPL, and the Group/Company does not designate derivatives (interest rate swaps) as hedging instruments under a fair value hedge accounting model. Therefore, a change in interest rates at the reporting date would not affect profit or loss.

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>			

2021

Financial instruments with variable interest rate	1,241,659	(1,241,659)	-	-
Interest rate swaps	-	-	1,420,014	(1,055,029)
Cash flow sensitivity (net)	<u>1,241,659</u>	<u>(1,241,659)</u>	<u>1,420,014</u>	<u>(1,055,029)</u>

2020

Financial instruments with variable interest rate	1,194,983	(1,194,983)	-	-
Interest rate swaps	3,563	403	1,566,195	(1,759,503)
Cash flow sensitivity (net)	<u>1,198,546</u>	<u>(1,194,580)</u>	<u>1,566,195</u>	<u>(1,759,503)</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>			

2021

Financial instruments with variable interest rate	92,300	(92,300)	-	-
Interest rate swaps	-	-	(34,209)	(86,520)
Cash flow sensitivity (net)	<u>92,300</u>	<u>(92,300)</u>	<u>(34,209)</u>	<u>(86,520)</u>

2020

Financial instruments with variable interest rate	90,207	(90,207)	-	-
Interest rate swaps	-	-	48,539	(50,742)
Cash flow sensitivity (net)	<u>90,207</u>	<u>(90,207)</u>	<u>48,539</u>	<u>(50,742)</u>

(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>
2021		
Foreign currency risk		
Receivables, loan assets, payables, and borrowings	203,593	-
Interest rate risk		
Variable-rate instrument	234,060	-
Commodity price risk		
Raw material purchases forecast	491,860	-
2020		
Foreign currency risk		
Receivables, loan assets, payables, and borrowings	89,044	-
Interest rate risk		
Variable-rate instrument	(1,067,634)	-
Commodity price risk		
Raw material purchases forecast	488,201	-

<i>At 31 December</i>	Separate 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>
2021		
Interest rate risk		
Variable-rate instrument	(61,999)	-
2020		
Interest rate risk		
Variable-rate instrument	(136,321)	-

The amounts relating to items designated as hedging instruments and hedge ineffectiveness were as follows.

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
Foreign currency risk				
At 31 December				
Cross-currency swaps - nominal amount	27,276,448	26,590,528	-	-
Foreign currency forwards - nominal amount	1,856,268	7,447,133	-	-
Carrying amount included in:				
- other current financial assets	128,624	174,292	-	-
- other non-current financial assets	529,122	871,923	-	-
- other current financial liabilities	1,095	1,554	-	-
- other non-current financial liabilities	299,062	237,400	-	-
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	119,388	(834,204)	-	-
Interest rate risk				
At 31 December				
Interest rate swap contracts - nominal amount	71,165,205	80,042,676	2,955,990	3,003,710
Carrying amount included in:				
- other current financial assets	69,692	-	-	-
- other non-current financial assets	349,091	-	-	-
- other current financial liabilities	-	127,396	-	-
- other non-current financial liabilities	150,265	918,125	61,999	136,321
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	1,302,078	(894,974)	74,323	(64,027)
<i>Recognised in profit or loss</i>				
- hedge ineffectiveness included in finance cost	(35,352)	-	-	-
Commodity price risk				
At 31 December				
Commodity swap contracts - nominal amount (thousand metric tons)	109	386	-	-
Commodity future contracts - nominal amount (thousand metric tons)	-	27	-	-
Carrying amount included in:				
- other current financial assets	457,985	502,503	-	-
- other non-current financial assets	97,817	39,147	-	-
- other current financial liabilities	71,837	55,423	-	-
For the year ended 31 December				
<i>Recognised in OCI</i>				
- changes in value of the hedging instrument	(35,809)	30,008	-	-
- hedging reserve transferred to cost of goods sold	17,813	546,499	-	-

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>Recognised in profit or loss</i>				
- hedge ineffectiveness included in cost of goods sold	(10,876)	(24,205)	-	-

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	
	2021	2020	2021	2020
	<i>(in thousand Baht)</i>			
<i>Hedging reserve</i>				
Balance at 1 January	(400,807)	664,806	(109,057)	(57,835)
Changes in fair value:				
Foreign currency risk	119,388	(834,204)	-	-
Interest rate risk	1,302,078	(894,974)	74,323	(64,027)
Commodity price risk	(35,809)	30,008	-	-
Amount reclassified to profit or loss:				
Foreign currency risk	-	-	-	-
Interest rate risk	-	-	-	-
Commodity price risk	17,813	546,499	-	-
Tax on movements on reserves during the year	(190,097)	87,058	(14,865)	12,805
Balance at 31 December	<u>812,566</u>	<u>(400,807)</u>	<u>(49,599)</u>	<u>(109,057)</u>

(c.2) Net investment hedges

A foreign currency exposure arises from the Group's/Company's net investment in its overseas subsidiaries that has Euro/USD functional currency. The risk arises from the fluctuation in spot exchange rates between the Euro/USD and the Thai Baht, which causes the amount of the net investment to vary.

The hedged risk in the net investment hedge is the risk of a weakening Euro/USD against the Thai Baht 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 Euro/USD long term foreign forward contracts which mitigates the foreign currency risk arising from the subsidiary's net assets. The long term forward contract is designated as a hedging instrument for the changes in the value of the net investment that is attributable to changes in the THB/EUR and THB/USD spot rate.

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 that is attributable to a change in the spot rate with changes 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 (in thousand Baht)	
2021		
EUR net investment	265,994	790,018
USD net investment	(1,345,106)	-
AUD net investment	(1,081)	-
2020		
EUR net investment	488,873	582,018
USD net investment	1,276,771	-
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 (in thousand Baht)	
2021		
EUR net investment	836,771	836,771
2020		
EUR net investment	850,567	628,711

The amounts related to items designated as hedging instruments were as follows.

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Net investment risk				
At 31 December				
Foreign exchange - nominal amount				
- forward contracts (USD)	41,273,577	20,275,043	-	-
- forward contracts (EUR)	11,368,440	12,537,976	-	1,475,056
- forward contracts (AUD)	485,254	-	-	-
Carrying amount included in:				
- other current financial assets	-	221,857	-	221,857
- other non-current financial assets	7,247	1,281,922	-	-
- other non-current financial liabilities	1,877,457	320,153	-	-
For the year ended 31 December				
Recognised in OCI				
- changes in value of the hedging instrument	(2,845,836)	862,462	(13,856)	(99,307)

38 Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain confidence of stakeholders including customers, suppliers, creditors, investors and markets and to sustain future growth and development of the business. The Board of Directors regularly monitor the return on capital employed by evaluating result from operating activities divided by total shareholders' equity, excluding non-controlling interests, plus net interest bearing debt outstanding and also monitors the level of dividends to ordinary shareholders.

39 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<i>(in million Baht)</i>				
Capital commitments				
<i>Contracted but not provided for:</i>				
Land and land improvements	275	231	-	-
Buildings and other construction	179	179	-	-
Machinery and equipment	3,582	1,702	-	-
Intangible asset	-	1,982	-	-
Total	4,036	4,094	-	-
Other commitments				
Short-term lease and lease of low-value asset commitments	1,100	1,054	-	-
Purchase orders and unused letters of credit for goods and supplies	14,013	13,920	-	-
Bank guarantees	6,711	5,845	2,183	1,469
Others	415	138	-	-
Total	22,239	20,957	2,183	1,469

Certain subsidiaries have executed long-term purchase agreements committing them to purchase agreed quantities of raw materials for periods up to six years, at prices limited to the market prices of the underlying commodities.

40 Events after the reporting period

IVL, through its indirect subsidiary, INBV, signed agreement for sale and purchase in UCY Polymers CZ s.r.o (“UCY”) located in Czech Republic and shareholders' agreement with Maximilian Josef Söllner (the “Transaction”) to acquire a 85% stake on 18 February 2022 and such transaction has been completed on the same day.

IVL, through its indirect subsidiary, Indorama Netherlands B.V., has entered into a Sale and Purchase Agreement with Tollegno 1900 S.p.A. (“Tollegno”) on 24th February 2022 for the purchase of 100% of the corporate capital of Filatura Tollegno 1900 S.R.L (“Filatura Tollegno”), a limited liability company incorporated under the laws of Italy. Filatura Tollegno will be engaged in worsted yarn business.

On 26 February 2022, the board of directors proposed for the dividend payment of Baht 0.25 per share, amounting to Baht 1,403.6 million. This dividend payment is subject to the approval by the shareholders of the Company.

41 Reclassification of accounts

Certain accounts in the statement of income for the year ended 31 December 2020 has been reclassified to conform to the disclosure in the 2021 financial statements as follows:

	2020		
	Consolidated financial statements		
	Before reclassification	Reclassification <i>(in million Baht)</i>	After reclassification
<i>Statement of income for the year ended 31 December 2020</i>			
Cost of sales of goods	287,803	79	287,882
Distribution costs	20,737	425	21,162
Administrative expenses	18,046	<u>(504)</u>	17,542
		<u><u>-</u></u>	

The reclassifications have been made because, in the opinion of management, the new classification is more appropriate to the Group's business.



Audit Committee Report to the Shareholders for the year 2021

The Audit Committee of Indorama Ventures Public Company Limited consists of three Independent Non - Executive Directors in line with the SET requirements. The Independent Directors possesses appropriate qualifications to serve on the Audit Committee. In addition, there is an advisor appointed by the Audit Committee (Ex Audit Committee member).

Mr. Rathian Srimongkol	-	Chairman
Dr. Siri Ganjarerndee	-	Member
Mr. Tevin Vongvanich	-	Member
Mr. Maris Samaram	-	Advisor

During the year 2021, the Committee held 6 meetings. Attendance of committee members was 100% during the year.

The Audit Committee independently performed its duties, in accordance with the Audit Committee Charter, which has been reviewed and approved by the Board of Directors and is in alignment with the regulations of the Stock Exchange of Thailand (SET).

Significant activities of the committee during the year are summarized here as under-

1. Review and approval of Financial Statements

The Audit Committee reviewed the quarterly and annual consolidated financial statements of the Company and its subsidiaries, prepared in accordance with Thai Financial Reporting Standards (TFRS), which is in conformance with the International Financial Reporting Standards (IFRS). The Committee reviewed material issues and exceptional items and obtained sufficient clarifications from the external auditors and the management, and confirmed that the financial statements are accurate, complete, presented fairly with adequate information and disclosure in notes to the financial statements, which duly complied with the relevant laws and financial reporting standards. The Audit Committee also reviewed Key Audit Matters (KAMs) as presented quarterly by the Statutory Auditors of the Company.

The Audit Committee approved quarterly consolidated financial statements and reviewed annual consolidated financial statements before the Board of Directors approves it.

The committee also held independent meeting with external auditors to review external auditor's scope of work, audit approach and to discuss any issues that they might be facing.

2. Review and approval of Management Discussion and Analysis

Every quarter the Audit Committee deliberated on the Management Discussion and Analysis (MD&A) in consultation with the Management. The Committee approved the quarterly MD&A reports and reviewed the annual MD&A reports before recommending it to the Board of Directors for approval. The Committee believed that the Management Discussion and Analysis reports (MD&A) fairly presented the adequate information.

3. Review of Internal Control Systems' Adequacy and Effectiveness

Audit Committee assessed the adequacy of internal control systems with the Company's management, external and internal auditors. The Committee worked together with the Internal Auditors and the Management to streamline the internal control systems and procedures as a continuous process. The Committee also reviewed the progress of Control Self-Assessment Questionnaires (CSAs), a tool developed by Internal Audit department and distributed to business process owners globally to assist them in conducting "Self Business - Process Audit" and address in control gaps as deemed appropriate. Audit Committee reviewed the Evaluation of "Sufficiency of Internal Controls Systems" for the year 2021. Based on its review, the Committee is in agreement with Management and Internal Audit department and believes that the company's internal control systems are adequate, suitable, effective and adaptable to evolving circumstances to meet the company's businesses requirements, present and future, while complying with the related laws and regulations.

4. Oversight of Internal Audit Function

Audit Committee reviewed and approved the Annual Internal Audit Plan for the year 2021. On half - yearly basis Committee reviewed internal audit department presentation elaborating upon the progress of audit plan, reviewing significant audit findings and the follow - up implementation status of the past reported findings. Audit Committee also reviews the new initiatives undertaken by

Internal Audit department to further enhance the effectiveness and efficiency of Internal Audit process. The Committee also escalated some of the significant Internal Audit matters to the Board for their information. Based on its review, the Committee is of the opinion that the Company's internal audit function including their independence and team size is adequate and effective.

5. Review of Connected Transactions in compliance with the Law and Stock Exchange of Thailand's Regulations

Audit Committee approved New Connected transactions, on quarterly basis, which are required to be approved by the Audit Committee as per SEC/SET regulations and Connected Transaction Policy of the company.

Based on its review, the Committee is of the opinion that all such transactions took place at regular commercial conditions and justifiable terms on arm's length basis as would have been entered into with the third parties, in the best interest of the Company, in line with the Connected Transaction Policy of the Company and in compliance with regulatory requirements.

6. Compliance with Securities and Stock Market Laws, Regulations of Stock Exchange of Thailand and/or other applicable laws

Audit Committee reviewed, on quarterly basis, the status of the company's compliance with the laws and regulations of the Stock Exchange of Thailand, the Securities and Exchange Commission and other relevant laws pertaining to the Company's business. There were no significant non-compliances noted.

The Committee further reviewed the status of compliance with the local and all other applicable laws and regulations of respective countries in which the company subsidiaries operates and observed no significant issue of non-compliance.

7. Appointment of External Auditors

Audit Committee evaluated the performance of KPMG Phoomchai Audit Limited, the external auditors of the Company, for the year 2021 and being satisfied, recommended to the Board for their re-appointment for the year 2022 along with the proposed audit fee.

8. Review of Anti-Corruption Measures

Audit Committee periodically reviewed the measures taken by the Company and its subsidiaries for countering any anti-corruption and /or bribe related matters, as part of good Corporate Governance measures, in line with the guidelines of the Thai Institute of Directors Association.

9. Self-Assessment of Audit Committee Members

Audit Committee conducted a self-assessment to review and evaluate its performance by benchmarking it with the Audit Committee Charter and best practice guidelines. The Audit Committee is satisfied that it has been effective in carrying out its duties and has followed the terms of reference in its charter. The results of the self-assessment were reported to the Board of Directors of the Company.

10. Report of the Audit Committee

Audit Committee from time to time reported critical issues related to Internal Audit and other activities to the Board of Directors.

Based on above it can be concluded that the Audit Committee performed its duties as specified in the Board-approved Charter with competence, prudence, and independence in equitable interests of all the stakeholders. In the opinion of the Committee, IVL's financial reports were accurately prepared in all material aspects under generally accepted accounting principles. IVL has adequate risk management practices, appropriate internal controls and internal audit systems, compliance with good corporate governance, legislation, requirements, and obligations as relevant to its businesses.

The Audit Committee received good cooperation and support throughout 2021 from the Board of Directors, Executive Officers, Auditors and all other relevant departments.

On behalf of the Audit Committee



Mr. Rathian Srimongkol
Chairman of the Audit Committee



Sustainability and Risk Management Committee Report 2021

The Sustainability and Risk Management Committee (the “Committee”) was established by the Board and operates in accordance with the Sustainability and Risk Management Committee Charter, to oversee the Group’s sustainability activities and provide risk management oversight, including monitoring the effectiveness of the risk management framework and mitigation plans. Its findings are reported to the Board.

The Committee, which includes four independent and four executive directors, is accountable to the Board for its performance and is supported by the Chief Strategy Officer and Chairman of ESG Council.

Mr. Alope Lohia	Chairman
Mr. Rathian Srimongkol	Member
Mr. Kanit Si	Member
Mr. Russell Leighton Kekuewa	Member
Mr. Tevin Vongvanich	Member
Mr. Dilip Kumar Agarwal	Member
Mr. Uday Paul Singh Gill	Member
Mr. Yashovardhan Lohia	Member

Four Committee meetings were convened in 2021, on February 22, May 7, August 6, and November 8. Attendance by committee members was 100% for all four meetings.

The Committee performed its duties in accordance with the SRMC Charter and within applicable laws and regulations. Noteworthy items for the year were:

1. Overseeing Sustainability Goals and Strategy

The committee reviewed and advised on IVL’s sustainability goals and strategy in parallel with ongoing initiatives, enabling the Company to flexibly adapt to external changes and strive towards achieving sustainable and resilient operations. These actions were shaped by IVL’s strategic priorities which address important megatrends such as climate change, the circular economy, water stewardship, product safety and transparency, and health and wellness. They also reflect international frameworks such as the Sustainable Development Goals (SDGs), UN Global Compact (UNGC), the perspectives of a broad spectrum of stakeholders, and the impacts on corporations.

The Decarbonization Committee and ESG Council were formed in 2021 to pursue our decarbonization ambitions and a range of ESG-related projects and initiatives. They are driving these initiatives, together with the corporate sustainability team, to achieve IVL’s sustainability targets.

2. Overseeing Risk Management

Significant risks were monitored throughout 2021 by the Committee, the Risk Management Council, and the Risk committees at the segment and plant level. The Council implemented IVL’s Risk Policy Statement, which is applicable to the whole organization. They also introduced Risk Capability & Culture Programs, which included the Risk Leadership Program Cohort 1 and Inaugural Global Risk Town Hall 2021, attended by more than 200 leaders from our businesses and plants around the globe.

The Corporate Risk Profile was reviewed and endorsed with key strategic risks monitored and deliberated on a quarterly basis.

- **Key Strategic Risks** are tracked and triggered for Board conversation through Risk Indicators and Mitigation Implementation Status
 - Cyber Security Risk – inability to effectively manage cyber security risk may result in business, reputation and value erosion
 - EHS Risk – process safety failures, occupational safety and environmental compliance leading to major EHS incidents, potential liabilities and reputational damage
 - Regulatory Risk – adverse regulatory changes could lead to operational challenges and value erosion. Risk includes carbon pricing, the Emissions Trading Scheme (ETS), Carbon Border Adjustment Mechanism (CBAM) and plastic tax.
- **Emerging Risks:** Imminent advancement of key future disruptors like new technology, changing customer preferences, new global laws including tax, cyber laws, etc.

Additionally, Financial Risks had been presented by the Finance team. The Company’s loans and future financing will be assessed and aligned based on the corporate ESG rating performance as this is in compliance with the principal approach of banks and institutions which cover carbon taxes, the insurance portfolio, and the ETS.

3. Sustainability Performance Review & Initiatives

The Committee reviewed IVL's sustainability performance during the year and suggested improvements, particularly related to health and safety, operational eco-efficiency, and decarbonization. The Committee also reviewed short-term (2025), medium-term (2030) and long-term targets (2050), along with strategies and the roadmap. The Committee emphasized that sustainability projects must be prioritized in order to achieve our short, medium and long-term targets. The impact of not achieving targets will be significant and can pose a reputational risk.

The following are a few key initiatives overseen by the Committee:

- **Decarbonization:** The Decarbonization Standard Operating Procedures (SOPs) were launched in 2021 in conjunction with the Decarbonization Committee. IVL also jointly declared its commitment, with other GCNT members, to achieving net zero GHG emissions by 2050 or no later than 2070 at the forum. IVL will commit to Science-Based Targets (SBTs) in 2022.
- **Renewable Electricity:** Increasing the consumption of renewable electricity, both onsite (rooftop and ground mounting) and offsite (virtual power purchase agreements), in addition to engaging a consultant for RE projects.
- **Global Carbon Pricing:** Implemented an internal carbon price (ICP) of USD 20 per tCO₂; the CBAM is viewed as beneficial for IVL; while the ETS is also relevant.
- **Sustainability Targets for 2030:** Stepped up to accelerate our Sustainability commitments by setting new 2030 targets as follows:
 - 30% GHG intensity reduction (2020 base year)
 - 15% energy intensity reduction (2020 base year)
 - 25% renewable energy
 - 20% water intensity reduction (2020 base year)
- **Health & Safety:** Launched the Injury & Illness Prevention Program (I2P2) and Golden Safety Rules to improve the health and safety of our direct and indirect workforce.
- **Plastic Regulations:** Increased advocacy and joined several organizations and partnerships to promote a more positive understanding of PET.
- **Sustainability-linked Bond (SLB):** IVL's first issuance of sustainability-linked Thai baht debentures, or SLBs, valued at THB 10 billion.
- **Deja™ Products:** Launched on Earth Day, 22 April 2021. An essential benefit of Deja™ products is their reduced carbon footprint, in addition to supporting our customers in achieving their carbon neutrality targets.

4. Advising on a Future Sustainability Path

The Committee offered recommendations relating to the following initiatives:

- **Decarbonization:** The Committee recommended a clear roadmap for decarbonization targets, a coal-phase out roadmap with a scheduled implementation, and being focused on setting-up SBTs.
- **Sustainability Targets 2025/2030:** The Committee emphasized the need for KPIs, engagement by the Manufacturing Leadership Council (MLC) and concrete action plans to achieve the 2025 and 2030 targets. The Committee re-emphasized the need for a robust sustainability culture across the organization.
- **Health & Safety:** The Committee strongly believes that a safety culture cannot be compromised and that health and safety standards must be continuously enhanced. They further recommended external benchmarking.
- **Risk Management:** The Committee recommended the continued development of business continuity plans and a risk culture as well as capability upskilling at the plant level and a stronger social media-friendly communications strategy.
- **CSR:** The Committee recommended a short and medium-term CSR strategy and roadmap, and improved alignment of CSR with our strategic priorities and core business values.

5. Sustainability Assessment Review

The Committee reviewed and acknowledged the recommendations from the Dow Jones Sustainability Indices (DJSI) Corporate Sustainability Assessment, together with sustainability assessments by the CDP, EcoVadis, ChemScore by ChemSec, MSCI, FTSE4Good Index, Sustainalytics, the Stock Exchange of Thailand, and other ESG evaluations including from customers and funds, and recommended adopting suitable best practices.

6. Committee Performance Evaluation

The Committee reviews its Charter and self-assessment forms on a periodic basis to improve the Committee's success. The Committee conducted a self-assessment to review and evaluate its performance and effectiveness in carrying out its duties. The overall performance and effectiveness were satisfactory during the year.

Committee Leadership

Throughout 2021, we delivered real organic growth and achieved important ESG milestones, notably our inclusion in the Dow Jones Sustainability World Index for the third consecutive year and inclusion in the Dow Jones Emerging Markets Index for the fifth consecutive year. We also received an outstanding rating in EcoVadis with the Platinum medal placing in the Top 1% of best performers for the first

time; while we received 1st rank among the world's top 50 chemical producers with ChemScore. All of these recognitions confirm that we are maintaining our trajectory through our commitment and leadership in sustainability.

One of our key focuses in 2021 was decarbonization and many of our initiatives and projects were in alignment with our 2030 targets. We will continue to focus on our decarbonization plan and roadmap incorporating new technologies and advanced innovations. The Committee believes that our business portfolio of carbon neutral products, rPET and recycling help expand our sustainability matrix and strengthen our position from a fossil fuel base to an increasingly prominent and environmentally friendly level.

In the pursuit of business growth and profitability, we strive to do things the right way – economically, socially and environmentally. We take our responsibilities seriously and remain focused on ensuring safe and profitable operations with a reduced impact on the environment. We respond with integrity to the trust and expectations of our stakeholders, and through our diverse business activities, we aim to contribute to sustainable development and resolving critical issues globally.

On behalf of the Sustainability and Risk Management Committee,



Mr. Alope Lohia
Chairman



Nomination Compensation and Corporate Governance (NCCG) Committee Report for the Year 2021

The NCCG Committee (henceforth referred to as “Committee”) is a sub-committee of the Board of Directors. The Committee supports the Board in matters of nominating and compensating Directors of the Board and the company’s Group Chief Executive Officer. Furthermore the Committee supports the Board’s effort to enhance its ESG profile by overseeing corporate governance.

The Committee members consist of five Independent Directors, who possess appropriate qualifications to serve in the Committee:

Mr. Russell Leighton Kekuewa	Chairman
Mr. William Ellwood Heinecke	Member
Mr. Kanit Si	Member
Dr. Siri Ganjarerndee	Member
Mrs. Kaisri Nuengsigkapan	Member

Mr. Alope Lohia, Group CEO & Vice Chairmen of the Board serves as an advisor to the Committee.

There were three meetings held during 2021: February 22, August 13 and November 8.

The attendance record at Committee meetings is as follows:

Mr. Russell Leighton Kekuewa	3/3
Mr. William Ellwood Heinecke	1/3
Mr. Kanit Si	3/3
Dr. Siri Ganjarerndee	3/3
Mrs. Kaisri Nuengsigkapan	3/3

The Committee performed its duties in accordance with the NCCG Charter and within applicable laws and regulations.

Noteworthy items for the year were:

1. Appointments to the Board and to Sub-Committees

Ambassador Michael George DeSombre, formerly US Ambassador to Thailand was elected as Independent Director on 27 April 2021 (AGM). He succeeded Mr. Chakramon Phasukavanich who retired from the Board due to the age limit specified in the Board of Directors’ charter having served since November 2015. On 1 November 2021 Ambassador Michael George DeSombre resigned from the Board for personal reasons.

Mr. Harald Link, Chairman of B. Grimm was elected by the Board on 1 November 2021 to be Independent Director effective immediately to replace Ambassador Michael George DeSombre.

Mrs. Kaisri Nuengsigkapan, currently Independent Director was appointed to the NCCG Committee succeeding Mr. Chakramon Phasukavanich with effect from 27 April 2021 (AGM).

2. Election of Directors to Replace those Retiring by Rotation

In compliance with Section 71 of the Public Limited Companies Act and the Article 14 of the Company’s Articles of Association, one-third of the directors must retire from office at the Annual General Meeting of Shareholders. The directors who were scheduled for retirement at the AGM on 27 April 2021 are:

a) Mr. Sri Prakash Lohia	Non-Executive Director and Chairman of the Board
b) Mr. Alope Lohia	Executive Director, Vice Chairman of the Board, Chairman of the Sustainability and Risk Management Committee, and Group Chief Executive Officer
c) Mr. Amit Lohia	Non-Executive Director
d) Mr. Russell Leighton Kekuewa	Independent Director, Chairman of the Nomination, Compensation and Corporate Governance Committee, and Member of the Sustainability and Risk Management Committee
e) Mr. Udey Paul Singh Gill	Executive Director, Member of the Sustainability and Risk Management Committee, and Chief Strategy Officer
f) Mr. Chakramon Phasukavanich	Independent Director and Member of the Nomination, Compensation and Corporate Governance Committee

Five of the Directors: a) Mr. Sri Prakash Lohia; b) Mr. Alope Lohia; c) Mr. Amit Lohia; Mr. Russell Leighton Kekuewa; and e) Mr. Udey Paul Singh Gill consented to be reappointed to the Board. However, Mr. Chakramon Phasukavanich, who attained the mandatory retirement age was ineligible for reappointment.

3. Re-Appointment of Members to the Audit Committee

The two-year term of service of the following Audit Committee members expired on 18 September 2021:

- | | |
|---------------------------|----------|
| a) Mr. Rathian Srimongkol | Chairman |
| b) Dr. Siri Ganjaremdée | Member |
| c) Mr. Tevin Vongvanich | Member |

In view of their good performance, expertise, meeting attendance record and their desire to remain on the Audit Committee, the members were re-appointed for another term of two (2) years with effect from 19 September 2021 to 18 September 2023.

4. Re-Appointment of Members to the Sustainability and Risk Management Committee (SRMC)

The two-year term of service of the following SRMC members expired on 6 August 2021:

- | | |
|---------------------------------|----------|
| a) Mr. Alope Lohia | Chairman |
| b) Mr. Rathian Srimongkol | Member |
| c) Mr. Dilip Kumar Agarwal | Member |
| d) Mr. Udey Paul Singh Gill | Member |
| e) Mr. Russell Leighton Kekuewa | Member |
| f) Mr. Yashovardhan Lohia | Member |
| g) Mr. Tevin Vongvanich | Member |
| h) Mr. Kanit Si | Member |

In view of their good performance, expertise, meeting attendance record and their desire to remain on the SRMC, the members were re-appointed for another term of two (2) years with effect from 1 September 2021 to 31 August 2023.

5. Remuneration of the Board of Directors

There was no change in the retainer fee structure in 2021 compared to 2020. As in previous years no retainer fee was paid to Executive Directors. A benchmarking in January 2020 verified that board remuneration is indeed competitive and reasonably aligned with market rates.

However, the total annual performance bonus paid to Directors was reduced from Baht 15.0 million in 2019 to Baht 10.0 million for 2020 due to the decline in profitability. The relation to net profit, consolidated cash profit and paid dividends were the primary criteria for determining the bonus amount.

6. Remuneration of Senior Management

To provide more visibility of senior management remuneration the Committee approved the disclosure of remuneration for the Group CEO and CEO. In addition the remuneration of the remaining members of the Indorama Management Council – Deputy Group CEO, Chief Financial Officer, Group HR Officer and Chief Strategy Officer are disclosed collectively.

7. Introduction of the New Employee Engagement Process

“The Customer is Why We Exist” and key to this company value is the level of employee commitment and engagement. The Committee supported and endorsed an initiative by Group Human Resources to develop and deploy a new process beginning in 2021.

8. Adoption of a New Whistle-Blowing Process

As a world-class company we strive to have a robust and effective whistle-blowing process. With societal issues being brought to the forefront e.g. racial tensions, workplace inequality, employee harassment, etc., and communicated widely and readily through social media, it was imperative to revisit the effectiveness of our whistle-blowing process. The Committee voted in favor of the recommendations made by management to refine the process and establish a more robust and timely approach for dealing with whistle-blowing issues. The Committee reviews the whistle-blowing reports at least once annually. There were no critical issues in 2021.

9. Review of Corporate Governance Practices

The Committee oversaw the initiatives being undertaken in the organization to embed Code of Conduct policies and overall corporate governance practices. Among the initiatives receiving attention in 2021 was the company-wide training in Anti-Corruption.

10. Long-Term Incentive Plan (LTI Plan)

Advocates of good corporate governance and sustainable performance have highlighted the need for long-term incentives to complement short-term incentives in management rewards. A new LTI Plan was endorsed by the Committee and deployed among senior executives. The LTI Plan is also expected to serve as a retention tool for our high potential executives.

11. Introduction of the Pledge Process and Declaration on Human Rights

One of our core values is, “We are responsible. In pursuit of business growth and profitability we do things the right way – economically, socially and environmentally.” To strengthen compliance to corporate governance policies a Pledge Process was implemented with the inaugural pledge aimed toward the company’s declaration on Human Rights.

12. Review of the NCCG Committee Charter

The Committee did its annual review of the charter and determined that there is nothing material which requires modification.

13. Performance Evaluation of the NCCG Committee

As per the Committee charter a performance review of the Committee was undertaken through self-assessment evaluations completed by each of the Committee Members. The results showed no areas for concern and overall the performance was deemed satisfactory. However, it is believed that the content of the self-assessment questionnaire could be better aligned with the roles and responsibilities stated in the Charter. This improvement will be done in 2022.

On behalf of the Nomination, Compensation and Corporate Governance Committee,



Russell Leighton Kekuewa
Chairman

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 Subsidiaries and Associated Companies
Appendix 3	Business Assets and Information on Appraisal Report
Appendix 4	Board of Directors Charter, Audit Committee Charter, Nomination, Compensation and Corporate Governance Committee Charter and Sustainability and Risk Management Committee Charter
Appendix 5	Corporate Governance Manual
Appendix 6	Investment in Subsidiaries



Please find more details of the Company's information from the appendixes 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.



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